DRAFT

Holiday Inn Express Suites Project

Prepared for:

City of Hawaiian Gardens
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Hawaiian Gardens, California 90716
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Table of Contents

APPENDICES

FIGURES

TABLES

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AB	Assembly Bill
AQMP	Air Quality Management Plan
BMPs	best management practices
BUG	backlight, uplight, and glare
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Occupational Health and Safety Administration
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
City	City of Hawaiian Gardens
CMP	Congestion Management Program
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	County of Los Angeles
dB	decibel
dBA	A-weighted decibel
EIR	Environmental Impact Report
EO	Executive Order
FHSZ	fire hazard severity zones
GHG	greenhouse gas
HVAC	heating, ventilation, and air conditioning
I-	Interstate
IS	Initial Study
LACFD	Los Angeles County Fire Department
LBWRP	Long Beach Water Reclamation Plant
L_{eq}	equivalent sound level
LASD	Lakewood Sheriff Department
LID	Low Impact Development
LOS	Level of service
LST	localized significance threshold
MLD	most likely descendant
MM-	Mitigation Measure
MND	Mitigated Negative Declaration
MRZ	Mineral Resource Zone
MT	metric ton
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NO_2	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
O_3	ozone

Acronym/Abbreviation	Definition
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
RCNM	Roadway Construction Noise Model
RTP	Regional Transportation Plan
RTP/SCS	Regional Transportation Plan/Sustainable Community Strategies
RWQCB	Regional Water Quality Control Board
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCS	Sustainable Communities Strategy
SR-	State Route
SWPPP	Storm Water Pollution Prevention Plan
SVP	Society of Vertebrate Paleontologists
TAC	toxic air contaminant
VOC	volatile organic compound

1 Introduction

1.1 Project Overview

The project site consists of a 1.25-acre vacant site located at the northeast corner of Norwalk Boulevard and 226th Street in the southern portion of the City of Hawaiian Gardens (City; see Figure 1, Project Location). The project involves the construction of a four-story, 42,164-square-foot, 71-unit hotel with a bar and lounge and surface parking lot (project or proposed project) (see Figure 2. Site Plan). The project will have a maximum height of 53 feet.

1.2 California Environmental Quality Act Compliance

The City is the lead agency responsible for the review and approval of the proposed project under California Environmental Quality Act (CEQA, Public Resources Code Section 21000 et seq.). The City prepared an Initial Study (IS) to determine whether the project may have a significant effect on the environment. Based on the findings of the (IS), the City has made the determination that any potential significant effects on the environment can be mitigated to a point where clearly no significant effect on the environment would occur, and therefore a Mitigated Negative Declaration (MND) is the appropriate environmental document to be prepared in compliance with .Public Resources Code Section 21064.

This draft IS/MND has been prepared by the City as lead agency and is in conformance with Section 15070(a), of the State CEQA Guidelines set forth in Title 14 of the California Code of Regulations (14 CCR 15000 et seq.). The purpose of the MND and the IS Checklist is to identify any potentially significant impacts associated with the proposed project and to incorporate mitigation measures into the project design, as necessary, eliminate those effects or to reduce them to a less than significant level.

1.3 Public Review Process

In accordance with CEQA, a good-faith effort has been made during the preparation of this IS/MND to contact affected agencies, organizations, and persons who may have an interest in this project.

A copy of the draft IS/MND and related documents are available for review at the City Community Development Department (see address as follows) between the hours 8:00 a.m. and 5:00 p.m. Monday through Thursday:

City of Hawaiian Gardens
21815 Pioneer Boulevard
Hawaiian Gardens, California 90716

A copy of the draft IS/MND and related documents is also available for review at the Hawaiian Gardens Library (see address as follows) during standard library hours:

Hawaiian Gardens Library
11940 Carson Street
Hawaiian Gardens, California 90716

In addition to the locations listed above, the document is available on the City's website:

https://www.hgcity.org/hg/

In accordance with Section 15072(a) of the CEQA Guidelines, written comments on the IS/MND will be accepted during a 30-day public review and comment period. The 30-day review and comment period will take place from March 6, 2020, to April 6, 2020. Following the close of the public comment period, the City will consider this IS/MND and the comments received to determine whether to approve the proposed project.

Written comments on the IS/MND may be delivered electronically or by mail, or may be submitted in person, to the following address by 5:00 p.m., April 6, 2020.

City of Hawaiian Gardens
Community Development Department, Planning Division
21815 Pioneer Boulevard
Hawaiian Gardens, California 90716
Attn: Kevin M. Nguyen, Associate Planner
Telephone: 562.420.2641
Email: knguyen@hgcity.org

2 Project Description

2.1 Project Location

The project site is located in the southern portion of the City of Hawaiian Gardens (City), which is located in the southeast region of the County of Los Angeles (County). Regionally, the City is bordered by the Los Angeles County cities of Lakewood and Long Beach, and by the Orange County city of Cypress (see Figure 1, Project Location). Locally, the project site is located at the northeast corner of Norwalk Boulevard and 226th Street. The approximately 1.25-acre site consists of one parcel (Assessor's Parcel Number 7076-033-910). The address associated with the project is 22434 Norwalk Boulevard, Hawaiian Gardens, California 90716.

2.2 Environmental Setting

City of Hawaiian Gardens

The City is the smallest in the County, encompassing a total of 0.9 square miles, and is located in the southeast region of the County. Generally, the City is an urban community consisting primarily of residential and commercial land uses. Additionally, the City includes a relatively small portion of industrial and public service land uses. Residential uses are primarily abundant in the southern and northeastern portions of the City. Commercial uses are concentrated along Norwalk Boulevard and Carson Street.

The City is surrounded by the City of Long Beach to the west and south, the City of Lakewood to the north, and the Orange County City of Cypress is adjacent to the east. The City is directly accessible from Interstate (I) 605, which is located on the west side of the City. Additionally, the City is regionally accessible from I-405 located approximately 2.8 miles to the south, and Highway 91 approximately 2.3 miles to the north.

Project Site

The 1.25-acre project site is currently vacant and consists entirely of dirt and grasses. According to the City of Hawaiian Gardens General Plan Land Use Map, the project site is designated as General Commercial (GC) (City of Hawaiian Gardens 2010). The project site is zoned C-4 (General Commercial) (City of Hawaiian Gardens 2011). The existing land use designations and zoning designations are shown on Figures 3 and 4, respectively. Pursuant to Section 18.60.050 of the City's Municipal Code, "hotels and motels" are conditionally permitted in the C-4 zone.

Surrounding Land Uses

The project site is located in a predominantly urbanized area of the City. Surrounding land uses include mainly residential and commercial uses. Adjoining and nearby properties include the following:

- **North:** Brittain Street, a two lane, unstriped road, forms the northern project boundary. A small strip of single-story commercial development is located north of Brittain Street consisting of food vendors, medical offices, auto-related retailors and other commercial uses. Residential development is located adjacent to and east of the commercial businesses consisting of single-family residences. Residential development extends to the north and northeast of the project site. The City of Lakewood is located to the north.

- **East:** Land uses east of the project site primarily consist of medium-density residential uses. Hawaiian Elementary School is located approximately 680 feet southeast of the project site. Coyote Creek, a concrete-lined, channelized creek, runs north to south approximately 0.3-mile east of the project site. The City of Cypress is located to the east.
- **South:** The southern project boundary is formed by 226th Street and borders the City of Long Beach. A small, single-story commercial development and adjacent single-family residences are located directly south of the project site, across 226th Street and in the City of Long Beach. Residential development continues to the south and southeast. The Hawaiian Terrace Senior Apartments, a three-story apartment complex, and associated parking lots, as well as vacant land designated for a future residential project (located in the City of Long Beach) are located diagonally across the intersection of 226th Street and Norwalk Boulevard, southwest of the project site.
- **West**: Uses west of the project site consist of Norwalk Boulevard, a four-lane road that runs north to south and forms a commercial corridor through the City. One- and two-story commercial development is located across Norwalk Boulevard and continues north along the road. Single-family residential development is located west of the commercially dominated Norwalk Boulevard. A concrete-lined storm drainage channel runs north–south through the residential neighborhood. The City of Lakewood is also located to the west.

2.3 Project Characteristics

2.3.1 Project Description

The project involves the construction of a four-story, 42,164-square foot, 71-unit hotel on a vacant, 1.25-acre lot (see Figure 2, Site Plan). The project site is located at the northeast corner of Norwalk Boulevard and 226th Street. As shown in Figure 2, Site Plan, the hotel building would be constructed on the eastern portion of the parcel, and surface parking, drive aisles, and landscaping would occupy the western portion of the parcel, with a limited amount of parking and a driveway east of the hotel building.

The first floor would include a lobby area, guest rooms, a meeting room, offices, a bar and lounge (restricted to guests only during their temporary stay), fitness room, multipurpose room, business center, kitchen and breakfast area, public restrooms, laundry room, an outdoor pool and patio, storage areas, a pool equipment room, and a mechanical/electrical room. The second, third, and fourth floors would primarily include guest rooms. The third floor would also include a storage area adjacent to the elevator lobby.

The roof of the building would be 41 feet, 4 inches, while the maximum building height to the top of the parapet would be 53 feet. The first floor would be 11 feet high, with the remaining building floors being 8 feet in height. The proposed building style is modern with smooth trowel finish omega stucco, aluminum and metal elements, and aluminum window frames and glass windows. An existing 6-foot-high block wall along the eastern project boundary would be extended to the north and south to cover the entire length of the eastern project boundary. The wall would be reduced to 3 feet in height at its northern and southern ends. The parking area and drive aisles would be paved with permeable pavers. Additionally, the project would install two deep catch basins and four stormwater planter boxes, and would construct one cast-iron pipe for stormwater overflow according to the project's low impact development (LID) plan. Figure 5 shows the proposed east and west building elevations, and Figure 6 shows the proposed north and south building elevations, respectively.

Access, Circulation and Parking

Site access would be available via one driveway on Norwalk Boulevard and two driveways on 226th Street. The project would provide 64 parking spaces, including 4 Americans with Disabilities Act-compliant parking spaces, 6 "clean air" vehicle spaces, and 4 spaces earmarked for electric vehicle charging stations, as well as bicycle parking stations and a storage shed. Six parking spaces would be located east of the hotel building next to the pool and outdoor patio, and the remainder of the parking would be located west of the hotel building. The project would include the construction of new sidewalks along the north and west project boundary, and the existing sidewalk along the southern project boundary would be retained. The delivery-loading zone would be located on the south side of the proposed hotel, parallel to 226th Street.

Project Operation and Maintenance

Once constructed, the hotel would operate 24 hours a day, 7 days a week and would require a maximum of 5 full-time employees per shift, excluding additional maintenance and cleaning staff who would likely be part-time employees.

2.3.2 Project Construction and Scheduling

Project construction would occur over a period of approximately 11 months. Table 1 provides the tentative duration for each phase of project construction. It is anticipated that project construction would employ a maximum of 24 construction workers at any one time.

Table 1. Tentative Project Construction Timeline

Phase Name	Duration
Site preparation	2 days
Grading	4 days
Building construction	200 days
Paving	10 days
Architectural coating	10 days

2.4 Project Approvals

The actions and/or approvals that the City needs to consider for the proposed project include, but are not limited to, the following (list is preliminary, and may not be comprehensive):

- **Conditional Use Permit (CUP) No. PLNG2019-0033CUP.** Pursuant to Section 18.60.050 of the City's Municipal Code, "hotels and motels" are conditionally permitted in the C-4 zone.
- **City of Hawaiian Gardens Variance for parking requirement.** Pursuant to Section 18.70.010 of the City's Municipal Code, parking and loading requirements for hotels and motels are 1 space/unit; 1 space/employee; and 2 spaces for the manager. The project would provide 64 parking spaces, which is below the number of spaces as required by the City (76 spaces required). The variance would be for a 15% parking reduction (or 12 fewer parking spaces).

- **City of Hawaiian Gardens Variance for height requirement.** Pursuant to Section 18.60.020 of the City's Municipal Code, maximum height of general commercial (C-4) structures is 45 feet. The maximum building height to the top of the parapet would be 53 feet.

Subsequent non-discretionary approvals (which would require separate processing through the City) would include, but may not be limited to, a grading permit, building permits, and occupancy permits.

3 Initial Study Checklist

1. **Project title:**
   Holiday Inn Express Suites Project

2. **Lead agency name and address:**
   City of Hawaiian Gardens
   Community Development Department
   21815 Pioneer Boulevard
   Hawaiian Gardens, California 90716

3. **Contact person and phone number:**
   Kevin M. Nguyen
   562.420.2641 ext. 246

4. **Project location:**
   The project site is located at the northeast corner of Norwalk Boulevard and 226th Street, at 22434 Norwalk Boulevard, Hawaiian Gardens, California 90716. Assessor's Parcel Number 7076-0333-910.

5. **Project sponsor's name and address:**
   Hawaiian 1311 LLC
   17918 Pioneer Boulevard
   Artesia, California 90701

6. **General plan designation:**
   General Commercial (GC)

7. **Zoning:**
   General Commercial (C-4)

8. **Description of project:**
   See Section 2 of this IS/MND for further detail.

9. **Surrounding land uses and setting:**
   See Section 2.2 of this IS/MND for further detail.

10. **Other public agencies whose approval is required:**
    - Los Angeles County Fire Department: Site plan review
    - Los Angeles County Sheriff's Department: Site plan review
    - County of Los Angeles: National Pollutant Discharge Elimination System (NPDES) General Construction Permit

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, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?**

    The City sent out AB 52 notification letters to all tribal representatives identified on a contact list provided by the NAHC. One tribe requested formal consultation pursuant to AB 52. See Section 3.18 of this IS/MND for further detail.

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	☐ Energy
☐ 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	☐ Tribal Cultural Resources
☐ Utilities and Service Systems	☐ Wildfire	☐ 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
Joseph Colombo, Community Development Director

3/2/2020
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 Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
I. **AESTHETICS** – Except as provided in Public Resources Code Section 21099, 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) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
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. The project site is currently vacant and is visible from surrounding land uses, including surrounding roadways, commercial areas, and residential areas. The project site is not located within a designated scenic vista area, and there are no scenic vistas designated in the City. As such, visual changes at the project site would not adversely affect scenic vistas. Those who currently have visual access to the project site from public vantage points are afforded views of a vacant dirt lot surrounded by chain-link fencing with green fence fabric (see Figure 7, Existing Conditions – Project Site). Implementation of the proposed project would replace the existing vacant lot with a four-story hotel and associated parking and landscaping. Since there are no scenic vistas in the City, the project would result in no impact to scenic vistas.

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 eligible or officially designated state scenic highways located in the City (Caltrans 2017). The closest scenic highway to the project site is State Route (SR) 1, located in Orange County approximately 5.4 miles southwest of the project site. SR-1 is not visible from the project site, nor is the project site visible from SR-1. Therefore, the project would result in no impact to scenic resources within a state scenic highway.

c) ***In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?***

Less-Than-Significant Impact. California Public Resources Code Section 21071 defines an "urbanized area" as "(a) an incorporated city that meets either of the following criteria: (1) Has a population of at least 100,000 persons, or (2) Has a population of less than 100,000 persons if the population of that city and not more than two contiguous incorporated cities combined equals at least 100,000 persons." As of January 2019, the population of Hawaiian Gardens is 14,723 persons (California Department of Finance 2019). However, the City of Long Beach borders the City to the south and has a population of 475,984 persons (California Department of Finance 2019). Therefore, the project is in urbanized area, and the following analysis considers whether the project would conflict with applicable zoning and other regulations governing scenic quality.

The project site is zoned C-4 General Commercial and would be subject to all applicable development standards, regulations, and policies governing scenic quality in the C-4 zone (City of Hawaiian Gardens 2011). In an effort to ensure that any future changes related to visual character and quality do not result in adverse impacts, and to ensure the proposed hotel structure is visually compatible with surrounding land uses, the project would be designed in accordance with the City's Municipal Code Section 18.60.020, which sets forth development standards for the C-4 zone. In addition, the project would be subject to review by the zoning administrator to ensure that the design of the proposed structures is consistent with all applicable design requirements, standards, and regulations set forth in the Municipal Code.

Figure 2 of this IS/MND illustrates the site plan and on-site circulation for the approximately 1.25-acre property; and Figures 5 and 6 detail the elevations of the proposed hotel building. The figures also identify proposed building materials and accent features. As shown on Figures 5 and 6, the exterior of the building would primarily be made of stucco, aluminum, glass windows, and mounted light fixtures, with steel railing around the patio and pool areas.

Table 2 presents the development standards applicable to the C-4 zone and the project's consistency with those regulations. Standards related to lighting and illuminated signage are addressed below under threshold D.

Table 2. Consistency with Zoning Ordinance

C-4 Standards		Project Site/Design
Minimum lot size	10,000 square feet	55,107 square feet
Minimum lot width	100 feet	Approximately 212 feet
Minimum lot depth	100 feet	Approximately 260 feet
Maximum lot coverage	70%	19.9%
Setbacks		There are no setback requirements with the exception of the rear lot line where the project site abuts residential. The proposed hotel would be 53 feet , and therefore a 23-foot setback is required from the rear lot line. The
Front	None	
Except where permitted driveways enter front wall of building	That portion of wall shall be located not less than 20 feet from front lot line	
Side	None	

Table 2. Consistency with Zoning Ordinance

C-4 Standards		Project Site/Design
Except where permitted driveways enter side wall of building	That portion of wall shall be located not less than 20 feet from side lot line	proposed hotel structure would be set back 28 feet from the rear lot line. Therefore, the project is consistent with this requirement.
Side abutting a residential zone	1 foot for each foot the building exceeds 30 feet in height	
Rear	None	
If lot abuts residential	1 foot for each foot the building exceeds 30 feet in height	
Maximum height	45 feet	53 feet to top of entry tower
Minimum distance between buildings	10 feet	N/A (only one building proposed)

As shown in Table 2, the project would be in compliance with all applicable regulations related to scenic quality for the C-4 zone, with the exception of the maximum height requirement, which states that building heights are not to exceed 45 feet. The project would have a maximum height of 53 feet, which is 8 feet taller than the maximum allowable height. Given that the Hawaiian Gardens Municipal Code allows for a maximum height of 45 feet, a Variance is being requested to accommodate the project's nominal increase in height. As indicated in Section 18.100.060 (b) of the City's Zoning Code, the criteria for a Minor Exception related to height is limited to an increase in the allowable height of a building up to a maximum of 5 additional feet in a C-4 zone. Therefore, as stated in Section 18.100.100 (d), a Variance shall be requested for any application that exceeds or does not meet the criteria for a Minor Exception. This request represents a nominal increase (8 feet) compared to the maximum allowable height. Section 18.100.100 of the City's Zoning Code states that the Community Development Director shall make a recommendation to the Planning Commission and the Planning Commission shall consider a proposed Variance and may approve, conditionally approve, or deny the request subject to the findings set forth in Section 18.100.100 of the Zoning Code. . As such, upon approval of the Variance application, the project's height would be allowed and consistent with regulations governing scenic quality and not incongruous with nearby structures.

The project site is located on Norwalk Boulevard, which serves as one of two commercial corridors in the City, where the majority of commercial development is concentrated. As shown in Figure 7, the project site is currently vacant land surrounded by a chain-link fence with green fence fabric, and there is no existing development on site. The immediately surrounding area is developed with commercial uses to the west, north, and south, and residential uses to the east, north, and south. Further, as shown in Figure 8, nearby development in the City primarily consists of commercial and residential development. As shown in Figure 8, Photo B, commercial development along Norwalk Boulevard primarily consists of one- to two-story strip mall development and commercial shopping centers. Commercial buildings in the City vary in color; however, the majority consist of off-white, tans, and greys to yellows and reds. Further, commercial uses such as the Gardens Casino and the Bingo Club add bulk and scale to the commercial environment. The Bingo Club (Figure 8, Photo D) is a large, two-story bingo hall located approximately 0.28 miles north of the project site along Norwalk Boulevard. Additionally, the only other hotel in the City is a four-story La Quinta Inn and Suites, located approximately 0.8 miles (driving distance) northeast of the project site, on East Carson Street. Figure 8 also depicts residential development near the project site, which includes residential neighborhoods consisting of one- to two-story single-family homes (Photo C), as well as up to three-story multi-family apartment complexes (Photo A).

As proposed, the hotel building would present an organized appearance consistent with that of the Holiday Inn Express Suites brand standards and guidelines. Visible signage would be affixed to the western, northern, and southern façades of the structure and would quickly convey to the public the intent and functionality of the structure. The project would display a cohesive, modern aesthetic that would be punctuated by a variety of building materials, non-continuous façades, and a context-sensitive landscape scheme. Building design would incorporate windows on all sides of the building that would lighten interior spaces and enhance daylighting opportunities. While the height and mass of the new four-story structure would be larger than the immediately surrounding development, it would be comparable to that of multifamily residential and commercial development in the area (see Figure 8). Existing visual quality of the vacant, dirt lot is considered low, and the introduction of a hotel structure and landscaping that would create visible contrast with the existing vacant, horizontal terrain.

Because of the generally low visual quality of the existing features on the site and because the new hotel building would be of a similar mass and scale as existing development in the immediate area, the project would not substantially degrade the existing visual character or quality of the site and its surroundings. Further, project landscaping would add visual elements that would soften the appearance of the new hotel building as viewed from off-site vantage points and provide considerably more aesthetic quality than the site's current barren state. Therefore, with implementation of the project landscape plan and upon approval of the Minor Exception application submitted for the project, the proposed building design would be consistent with regulations governing scenic quality, and the project would not conflict with surrounding visual quality and character. Impacts 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 project site is located in an urbanized area along a main commercial corridor with many surrounding existing sources of light and glare, including streetlights, interior and exterior commercial and residential building lighting, signage lighting, landscape lighting, and security lighting. Nearby sensitive receptors include the residential uses to the north, south, and east of the project site.

Light

Construction

Construction of the project would normally occur Monday through Saturday between 7:00 a.m. and 7:00 p.m. Construction activities would typically occur during daylight hours, and nighttime lighting on the project site would not typically be required during the approximately 11-month construction phase. However, security lighting would be temporarily installed onsite during construction and temporary lighting may be brought to the project site and operate if after-hours or weekend work is determined to be necessary for specific activities. Temporary security lighting would be fully shielded and directed downward, and would not direct light or glare onto adjacent structures or lots or into vehicular traffic on off-site adjacent roadways. After-hours or weekend work would not be typical during the construction phase, and during sporadic use, mobile lighting sources would be fully shielded and directed downward to minimize skyglow and light trespass onto adjacent properties. Further, mobile lighting would be focused on the area of active construction such that the entirety of the 1.25-acre project site would not be illuminated. Because use of nighttime lighting during construction would be irregular, and mobile lighting sources and temporary security lighting would be fully shielded and directed downward, construction lighting would not adversely affect nighttime views in the area or create substantial glare. Therefore, impacts associated with the occasional use of mobile lighting during construction and temporary security lighting would be less than significant.

Operation

The project would include the installation of nighttime lighting sources on the currently vacant 1.25-acre site. Proposed lighting to be installed on the project site would include pole-mounted lights in the parking lot, wall-mounted lighting on the hotel exterior, LED accent lighting, and illuminated building signage. As depicted on Figures 5 and 6, the project would install 35 wall-mounted LED lights on the building exterior for safety and security purposes, and illuminated signage on the western, northern, and southern building facades, and hidden LED accent lighting on the upper level above the main entrance to the building. Positioning and height of the wall-mounted lights would vary between the lower, middle, and upper levels, at a height of 7 feet, 14 feet, and 25 feet, respectively. Pole-mounted lights would be distributed throughout the parking area, and would consist of seven 15-foot-tall pole-mounted lights, each with two lamp fixtures.

Project lighting nearest to the residential properties to the north, south, and east would consist of wall-mounted exterior building lighting. Light fixtures would be fully shielded and directed downward to minimize light trespass and skyglow. The existing wall that separates the residential properties to the east from the project site would also reduce light trespass to the east. Further, the proposed project lighting does not include blinking, flashing, or oscillating light sources.

There is no light trespass threshold established by the City Municipal Code; however, Section 18.70.050 regulates lighting and security standards for nonresidential development, and indicates that the intensity and design of all lighting fixtures shall be reviewed and subject to the approval of the Community Development Director. In accordance with Section 18.70.050, project lighting would be shielded and directed downward so as not to direct light into adjacent structures or lots or into vehicular traffic on off-site adjacent roadways. Further, exterior lights shall be installed in such a manner that the light source would be sufficiently obscured to prevent glare on public streets and walkways or into any residential area.

Illuminated signage would be required to comply with Section 18.90.050 of the Municipal Code, which regulates the size, height, and placement of signs in the City, and requires that all proposals for new signs obtain sign permits approved by the Community Development Director. In particular, Section 18.90.050 (d)(4) regulates sign lighting, and specifies that sign lighting shall not result in glare being directed toward surrounding properties, and exterior lighting directed at a sign shall be shielded to ensure that light is projected only upon the sign. Further, all signs shall conform to Chapter 15.04 of the Municipal Code, and where appropriate, shall conform to the current National Electrical Code and the National Electrical Safety Code. With adherence to the above policies, and upon approval and receipt of a sign permit, proposed illuminated signage would not result in a new significant source of light or glare.

All proposed light fixtures would be consistent with the California Green Building Standards Code (CALGreen) and the California Administrative Code standards for illumination, which set forth minimum requirements based on Lighting Zones, as defined in Chapter 10 of the California Administrative Code. The requirements are designed to minimize light pollution in an effort to maintain dark skies and ensure new development reduces backlight, uplight, and glare (BUG) from exterior light sources (CALGreen 2019). The project site is located within Lighting Zone 3, which establishes ambient illumination standards for urban areas (California Administrative Code 2016). The project would be required to comply with the maximum allowable BUG rating for Lighting Zone 3, as defined in Table 5.106.8 [N] of CALGreen.

With adherence to the above standards for illumination and implementation of the previously outlined design considerations, operational lighting would not adversely affect nighttime views in the area, or result in a new source of substantial light and impacts would be less than significant.

Glare

As proposed, the hotel building would incorporate a variety of building materials. As depicted on Figures 5 and 6, building materials would primarily include stucco, aluminum and metal elements, glass windows, mounted light fixtures, and steel railing around the patio and pool areas. As previously discussed, wall-mounted lights would be located on the building exterior, and pole-mounted lights would be positioned throughout the parking area. Although metallic materials and glass have been incorporated into project design, the façades of the new hotel building would not create substantial glare that would affect daytime views. Metallic materials would typically be finished and display a dull veneer. Selected glass would have a low exterior reflectance percentage to maximize daylighting opportunities to interior building spaces. Therefore, building materials would not create a new source of substantial light or glare that would adversely affect daytime views in the area. With adherence to the above design standards and regulations, proposed building materials and lighting would not result in substantial glare that would be received by off-site receptors. Further, as previously discussed, the project would be required to comply with the California Green Building Code, which establishes maximum allowable BUG ratings, which include glare. Therefore, glare impacts would be less than significant.

3.2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less-Than-Significant Impact 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?	☐	☐	☐	☒

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
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 highly urbanized area. According to the California Department of Conservation's (DOC) California Important Farmland Finder, most of the County—including the City—is not mapped under the Farmland Mapping and Monitoring Program, and, thus, does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (collectively Important Farmland) (DOC 2016a). 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 a 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 2016b). In addition, the project site and surrounding area are not zoned for agricultural uses, but instead for residential, commercial, industrial, and public facility uses (City of Hawaiian Gardens 2011). As such, implementation of the project would not conflict with existing zoning for agricultural use or land under a Williamson Act contract. Therefore, the project would not conflict with existing agricultural zoning or a Williamson Act contract, and no impact 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 urbanized area. According to the City's Zoning Map, the project site is not located on or adjacent to forest land, timberland, or timberland zoned Timberland Production (City of Hawaiian Gardens 2011). Therefore, the project would not conflict with existing zoning or cause rezoning of forest land or timberland, and 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 highly urbanized area. The project site is not located on or adjacent to forest land. No forest land, 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 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 Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
III. **AIR QUALITY** – Where available, the significance criteria established by the applicable air quality management district 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) 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?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

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), which includes the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, and all of Orange County, and is within the jurisdictional boundaries of South Coast Air Quality Management District (SCAQMD).

SCAQMD administers SCAB's Air Quality Management Plan (AQMP), 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 AQMP for the SCAB is the 2016 AQMP (SCAQMD 2017), which was adopted by SCAQMD's Governing Board in March 2017. The 2016 AQMP focuses on available, proven, and cost-effective alternatives to traditional strategies while seeking to achieve multiple goals in partnership with other entities seeking to promote reductions in greenhouse gases (GHGs) and toxic risk, as well as efficiencies in energy use, transportation, and goods movement (SCAQMD 2017).

The purpose of a consistency finding with regard to the AQMP is to determine if a project is consistent with the assumptions and objectives of the regional air quality plans and if it would interfere with the region's ability to comply with federal and state air quality standards. SCAQMD has established criteria for determining consistency with the currently applicable AQMP in Chapter 12, Sections 12.2 and 12.3 of the SCAQMD CEQA Air Quality Handbook (SCAQMD 1993). These criteria are:

- Whether the 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.
- Whether the project would exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

To address the first criterion, project-generated criteria air pollutant emissions have been estimated and analyzed for significance and are addressed under Section 3.3(b). Detailed results of this analysis are included in Appendix A. As presented in Section 3.3(b), construction and operation of the project would not generate criteria air pollutant emissions that exceed SCAQMD's thresholds.

The second criterion regarding the project's potential to exceed the assumptions in the AQMP or increments based on the year of project buildout and phase is primarily assessed by determining consistency between the project's land use designations and its potential to generate population growth. In general, projects are considered consistent with, and not in conflict with or obstructing implementation of, the AQMP if the growth in socioeconomic factors 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 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 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) (SCAG 2016). This document, which is based on general plans for cities and counties in the SCAB, is used by SCAQMD to develop the AQMP emissions inventory (SCAQMD 2017).1 The SCAG 2016 RTP/SCS and the associated Regional Growth Forecast are generally consistent with the local plans; therefore, the 2016 AQMP is generally consistent with local government plans.

The project site is zoned C-4 (General Commercial) (City of Hawaiian Gardens 2011), which conditionally permits hotels and motels. The project is consistent with the existing land use designation and does not propose a change in land use designation. In addition, the implementation of the project would not generate an increase in growth demographics that would conflict with existing projections within the region. Accordingly, the project is consistent with the SCAG RTP/SCS forecasts used in the SCAQMD AQMP development.

In summary, based on the considerations presented for the two criteria, impacts relating to the project's potential to conflict with or obstruct implementation of the applicable AQMP would be less than significant.

b) 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?

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 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.

In considering cumulative impacts from the project, 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 SCAQMD's significance thresholds, it would be considered to have a cumulatively considerable contribution to nonattainment status in the SCAB. If a project does not exceed thresholds and is determined to have less than significant project-specific impacts, it may still contribute to a significant cumulative impact on air quality. The basis for analyzing the project's cumulatively considerable contribution is if the project's contribution accounts for a significant proportion of the cumulative total emissions (i.e., it represents a "cumulatively considerable contribution" to the cumulative air quality impact) and consistency with SCAQMD's 2016 AQMP, which addresses cumulative emissions in the SCAB.

1 Information necessary to produce the emissions inventory for the SCAB is obtained from SCAQMD and other governmental agencies, including the California Air Resources Board (CARB), California Department of Transportation (Caltrans), and SCAG. Each of these agencies is responsible for collecting data (e.g., industry growth factors, socioeconomic projections, travel activity levels, emission factors, emission speciation profile, and emissions) and developing methodologies (e.g., model and demographic forecast improvements) required to generate a comprehensive emissions inventory. SCAG incorporates these data into its Travel Demand Model for estimating/projecting vehicle miles traveled and driving speeds. SCAG's socioeconomic and transportation activities projections in their 2016 RTP/SCS are integrated in the 2016 AQMP (SCAQMD 2017).

Short-Term Construction Emissions

Proposed construction activities would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and volatile organic compound [VOC] off-gassing) and off-site sources (i.e., on-road haul trucks, vendor trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity; the specific type of operation; and, for particulate matter, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated.

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate emissions from construction of the project. Internal combustion engines used by construction equipment, trucks, and worker vehicles would result in emissions of VOCs, oxides of nitrogen (NOx), carbon monoxide (CO), particulate matter less than or equal to 10 microns in diameter (PM10), and particulate matter less than or equal to 2.5 microns in diameter (PM2.5). PM10 and PM2.5 emissions would also be generated by entrained dust, which results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil. The project would be required to comply with SCAQMD Rule 403 to control dust emissions generated during any dust-generating activities. Standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active dust areas two times per day, with additional watering depending on weather conditions. The project would involve application of architectural coating (e.g., paint and other finishes) for the hotel building. The contractor is required to procure architectural coatings from a supplier that complies with the requirements of SCAQMD's Rule 1113 (Architectural Coatings). Table 3 presents the estimated maximum daily construction emissions from both onsite and offsite sources generated during construction of the project. Details of the emission calculations are provided in Appendix A.

Table 3. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	pounds per day					
2019	2.51	19.51	15.41	0.03	3.58	2.17
2020	40.08	16.38	14.93	0.03	1.28	0.91
Maximum	*40.08*	*19.51*	*15.41*	*0.03*	3.58	*2.17*
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

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

As shown in Table 3, the project construction would not exceed SCAQMD's daily thresholds. Therefore, construction impacts associated with criteria air pollutant emissions would be less than significant.

Long-Term Operational Emissions

Emissions from the operational phase of the project were estimated using CalEEMod. Operational year 2021 was assumed as it would be the first full year following completion of construction.

Area Sources

CalEEMod was used to estimate operational emissions from area sources, including emissions from consumer product use, architectural coatings, and landscape maintenance equipment. Emissions associated with natural gas usage in space heating and water heating are calculated in the building energy use module of CalEEMod, as described in the following text.

Consumer products are chemically formulated products used by household and institutional consumers, including detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. Other paint products, furniture coatings, or architectural coatings are not considered consumer products (CAPCOA 2017). Consumer product VOC emissions were estimated in CalEEMod based on the floor area of buildings and default factor of pounds of VOC per building square foot per day. The CalEEMod default values for consumer products were assumed.

VOC off-gassing emissions result from evaporation of solvents contained in surface coatings, such as in paints and primers used during building maintenance. CalEEMod calculates the VOC evaporative emissions from the application of surface coatings based on the VOC emission factor, the building square footage, the assumed fraction of surface area, and the reapplication rate. The VOC emissions factor is based on the VOC content of the surface coatings, and SCAQMD's Rule 1113 (Architectural Coatings) governs the VOC content for interior and exterior coatings. This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories (SCAQMD 2016). The default CalEEMod assumptions were used for architectural coatings. Consistent with CalEEMod defaults, it is assumed that the surface area for painting equals 2.7 times the floor square footage, with 75% assumed for interior coating and 25% assumed for exterior surface coating (CAPCOA 2017). CalEEMod defaults were assumed for the application of architectural coatings during operation.

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chainsaws, and hedge trimmers. The emissions associated with landscape equipment use are estimated based on CalEEMod default values for emission factors (grams per square foot of building space per day) and number of summer days (when landscape maintenance would generally be performed) and winter days. Based on CalEEMod defaults for Los Angeles County, the average annual number of summer days is estimated at 250 days (CAPCOA 2017).

Energy Sources

As represented in CalEEMod, energy sources include emissions associated with building electricity and natural gas usage. Electricity use would contribute indirectly to criteria air pollutant emissions; however, the emissions from electricity use are only quantified for GHGs in CalEEMod, since criteria pollutant emissions occur at the site of the power plant, which is typically off site.

Mobile Sources

Following the completion of construction activities, the project would generate criteria pollutant emissions from mobile sources (vehicular traffic) as a result of the customers and employees of the project. The maximum daily trip rates, taken from the Traffic Impact Analysis for the project (Appendix C), were 594 round trips per day. These were assumed 7 days per week. The estimated trip lengths and trip modes were based on CalEEMod defaults. CalEEMod was used to estimate emissions from proposed vehicular sources (refer to Appendix A). CalEEMod default data, including temperature, trip characteristics, variable start information, emissions factors, and trip distances, were conservatively used for the model inputs. Project-related traffic was assumed to include a mixture of vehicles in accordance with the associated use, as modeled within CalEEMod, which is based on the California Air Resources Board (CARB) EMFAC2014 model. Emission factors representing the vehicle mix and emissions for 2021 were used to estimate emissions associated with vehicular sources. Table 4 presents the emissions during operation.

Table 4. Estimated Maximum Daily Operation Criteria Air Pollutant Emissions

Emissions Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
Area	0.96	0.00	0.01	0.00	0.00	0.00
Energy	0.03	0.27	0.23	0.00	0.02	0.02
Mobile	0.95	4.46	11.05	0.04	3.04	0.83
Total	**1.94**	**4.73**	**11.29**	**0.04**	**3.06**	**0.85**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

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

As shown in Table 4, the project would not exceed SCAQMD's significance thresholds during operations. Therefore, operational impacts associated with criteria air pollutant emissions would be less than significant.

c) 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 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 to the south of the project. The closest off-site sensitive receptors to the project site include residences adjacent to the eastern project site boundary.

Localized Significance Thresholds

Construction activities associated with the 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 localized significance threshold (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 presented in Table 5 and compared to the maximum daily on-site construction emissions.

Table 5. Localized Significance Thresholds Analysis for Project Construction

Pollutant	Project Construction Emissions (Pounds per Day)	LST Criteria (Pounds per Day)	Exceeds LST?
NO_2	19.48	57	No
CO	13.92	585	No
PM_{10}	3.49	4	No
$PM_{2.5}$	2.14	3	No

Source: SCAQMD 2009.
Notes: LST = localized significance threshold; NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter.
See Appendix A for detailed results.
LSTs are shown for 1-acre project sites corresponding to a distance to a sensitive receptor of 25 meters (82 feet) for Source Receptor Area 4 (South Coastal Los Angeles County).
These estimates reflect control of fugitive dust required by Rule 403.
The emissions represent worst-case operating scenario during construction.

As shown in Table 5, the project LST would not exceed the established significance thresholds, and thus, would result in a less-than-significant impact to sensitive receptors.

CO Hotspots

Traffic-congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed federal and/or state standards for CO are termed CO “hotspots.” CO transport is extremely limited and disperses rapidly with distance from the source. Under certain extreme meteorological conditions, however, CO concentrations near a congested roadway or intersection may reach unhealthy levels affecting sensitive receptors. Typically, high CO concentrations are associated with severely congested intersections operating at an unacceptable level of service (LOS) (LOS E or worse is unacceptable). Projects contributing to adverse traffic impacts may result in the formation of a CO hotspot. Additional analysis of CO hotspot impacts would be conducted if a project would result in a significant impact or contribute to an adverse traffic impact at a signalized intersection that would potentially subject sensitive receptors to CO hotspots.

Title 40 of the Code of Federal Regulations, Section 93.123(c)(5), Procedures for Determining Localized CO, PM_{10}, and $PM_{2.5}$ Concentrations (Hot-Spot Analysis), states that

> CO, PM_{10}, and $PM_{2.5}$ hot-spot analyses are not required to consider construction-related activities, which cause temporary increases in emissions. Each site which is affected by construction-related activities shall be considered separately, using established ‘Guideline’ methods. Temporary increases are defined as those which occur only during the construction phase and last five years or less at any individual site (40 CFR 93.123).

While project construction would involve on-road vehicle trips from trucks and workers during construction, construction activities would last approximately 11 months and would not require a project-level construction hotspot analysis.

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 (VMT) 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 is operating 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.

Projects contributing to adverse traffic impacts may result in the formation of CO hotspots. To verify that the project would not cause or contribute to a violation of the CO standard, a screening evaluation of the potential for CO hotspots was conducted for operation. The potential for CO hotspots was evaluated based on the results of the Traffic Impact Analysis for the project (Appendix C), and the California Department of Transportation (Caltrans) Institute of Transportation Studies Transportation Project-Level Carbon Monoxide Protocol (CO Protocol; Caltrans 2010) was followed. For projects located within an area designated as attainment or unclassified under the CAAQS or NAAQS, the CO Protocol identifies screening criteria for consideration. The first screening criteria focuses on projects that are likely to worsen air quality, which would occur if (1) the project significantly increases the percentage of vehicles operating in cold start mode (greater than 2%), (2) the project significantly increases traffic volumes (greater than 5%), and/or (3) the project worsens traffic flow. In addition to consideration of whether the project would worsen air quality, CO hotspots are typically evaluated when (1) the LOS of an intersection or roadway decreases to LOS E or worse; (2) signalization and/or channelization is added to an intersection; and (3) sensitive receptors, such as residences, schools, and hospitals, are located in the vicinity of the affected intersection or roadway segment. No intersections studies in the Traffic Impact Analysis identified an LOS that would exceed the screening thresholds (Appendix C). Therefore, the project would not cause an intersection to exceed the screening thresholds to necessitate a quantitative CO hotspots analysis.

Accordingly, the project would not generate traffic that would contribute to potential adverse traffic impacts that may result in the formation of CO hotspots. In addition, due to 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. Based on these considerations, the project would result in a less-than-significant impact to air quality with regard to potential CO hotspots.

Toxic Air Contaminants

A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute (immediate) and/or chronic (cumulative) non-cancer health effects. A toxic substance released into the air is considered a toxic air contaminant (TAC). Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on the basis of either short-term (acute) or long-term (chronic) exposure to a given TAC.

TACs are identified by federal and state agencies based on a review of available scientific evidence. In the State of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere.

Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

Project construction would result in emissions of diesel particulate from heavy construction equipment and trucks accessing the site. Diesel particulate is characterized as a TAC by the State of California. The Office of Environmental Health Hazard Assessment has identified carcinogenic and chronic noncarcinogenic effects from long-term exposure, but has not identified health effects due to short-term exposure to diesel exhaust. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period for the maximally exposed individual resident; however, such assessments should be limited to the period/duration of activities associated with the project. Thus, the duration of the proposed construction activities would only constitute a small percentage of the total 30-year exposure period. Due to this relatively short period of exposure (11 months) and minimal particulate emissions on site, TACs generated by the project would not result in concentrations causing significant health risks. Overall, the project would not result in substantial TAC exposure to sensitive receptors in the vicinity of the proposed project, and impacts would be less than significant.

In addition, the health risk public-notification thresholds adopted by the SCAQMD Board is 10 excess cancer cases in a million for cancer risk and a hazard index of more than one (1.0) for non-cancer risk. The hazard index of more than 1.0 means that predicted levels of a toxic pollutant are greater than the reference exposure level, which is considered the level below which adverse health effects are not expected. Examples of projects that emit toxic pollutants include oil and gas processing, gasoline dispensing, dry cleaning, electronic and parts manufacturing, medical equipment sterilization, freeways, and rail yards (SCAQMD 2017). The project would not emit TACs, and toxic contaminants are not anticipated to be present at the project site; as such, a formal health risk assessment will not be required for the project. Accordingly, the project is not anticipated to result in emissions that would exceed the SCAQMD Board-adopted health risk notification thresholds.

Health Impacts of Criteria Air Pollutants

Construction of the project would generate criteria air pollutant emissions; however, the project would not exceed the SCAQMD mass-emission thresholds.

The SCAB is designated as nonattainment for ozone (O_3) for the NAAQS and CAAQS. Thus, existing O_3 levels in the SCAB are at unhealthy levels during certain periods. The health effects associated with O_3 generally relate to reduced lung function. Because the project would not involve construction activities that would result in O_3 precursor emissions (VOC or NO_X) that would exceed the SCAQMD thresholds, the project is not anticipated to substantially contribute to regional O_3 concentrations and associated health impacts. Similar to construction, no SCAQMD threshold would be exceeded during operation.

In addition to O3, NOx emissions contribute to potential exceedances of the NAAQS and CAAQS for nitrogen dioxide (NO2). Exposure to NO2 and NOx can cause lung irritation, bronchitis, and pneumonia, and lower resistance to respiratory infections. Project construction and operation would not exceed the SCAQMD NOx threshold, and existing ambient NO2 concentrations are below the NAAQS and CAAQS. Thus, construction and operation of the project are not expected to exceed the NO2 standards or contribute to associated health effects.

CO tends to be a localized impact associated with congested intersections. CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. CO hotspots were discussed previously as a less-than-significant impact. Thus, the project's CO emissions would not contribute to the health effects associated with this pollutant.

The SCAB is designated as nonattainment for PM10 under the CAAQS and nonattainment for PM2.5 under the NAAQS and CAAQS. Particulate matter contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing (EPA 2016). As with O3 and NOx, the project would not generate emissions of PM10 or PM2.5 that would exceed SCAQMD's thresholds. Accordingly, the project's PM10 and PM2.5 emissions are not expected to cause any increase in related regional health effects for these pollutants.

In summary, the project would not result in any potentially significant contribution to regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants. Therefore, impacts associated with localized air emissions would be less than significant.

d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less-Than-Significant Impact. The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

Short-Term Construction Impacts

Odors would be potentially generated from vehicles and equipment exhaust emissions during construction of the project. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment and asphalt pavement application. Such odors would disperse rapidly from the project site and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, short-term construction impacts associated with odors would be less than significant.

Long-Term Operational Impacts

Land uses and industrial operations associated with odor complaints include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting operations, refineries, landfills, dairies, and fiberglass molding facilities (SCAQMD 1993). The project would not create any new sources of odor during operation. Therefore, there would be no long-term operational impacts associated with odors.

3.4 Biological Resources

	Potentially Significant Impact	Less-Than-Significant Impact 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 state or federally protected wetlands (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?***

Less-Than-Significant Impact. The project site is located in a developed part of the City and is surrounded by an urban mix of land uses including residential and commercial. The nearest open space area as identified by the City's General Plan is Lee Ware Park, which is located approximately 0.3 miles east of the project site (City of Hawaiian Gardens 2010). Due to the intervening development between the project site and this natural area, there is no direct connection between the project site and this open space area.

No native habitat is located on the project site or in the immediately surrounding area. The project site consists of a flat, vacant lot covered with disturbed soils and dry grasses. Plant species surrounding the project site are limited to non-native, ornamental species located within the public right-of-way, including turf grass and palm species. 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.

As previously mentioned, ornamental landscape trees are found within the public right-of-way. Pursuant to Chapter 12.19.060 of the City's Municipal Code, removal of a City tree would require the applicant to obtain a written permit from the City prior to removing a tree located on public property (City of Hawaiian Gardens 2018). However, according to the project site plan (see Figure 2), trees would not be removed from the public right-of-way. Therefore, the project would result in no impact to any species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

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 in a predominantly urbanized area, and consists of a flat, vacant lot covered with disturbed soils and dry grasses. Surrounding land uses primarily include residential and commercial uses. No natural vegetation communities are present within the project site or immediately surrounding area. Therefore, no impacts to riparian or sensitive vegetation communities would occur as result of the project.

c) ***Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?***

No Impact. There are no state or federally protected wetlands located on or near the project site. Further, 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) (USFWS 2019). Further, the 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 state or federally protected 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 is not recognized as an existing or proposed Significant Ecological Area that links migratory populations, as designated by the County (County of Los Angeles 2019). 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, nor are there any trees currently on site. Further, the City is located in a highly urbanized and dense area. The City is almost entirely developed, with the exception of a few vacant infill parcels throughout the community. There are no expansive open space areas, natural features or sensitive natural plant communities, or riparian habitats for which to consider conservation (City of Hawaiian Gardens 2010). Therefore, the project would not conflict with any local policies or ordinances protecting biological resources, and no impact 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 conservation plan area. Therefore, the project would not conflict with the provisions of an adopted conservation plan, and no impact would occur.

3.5 Cultural Resources

	Potentially Significant Impact	Less-Than-Significant Impact 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 pursuant to §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

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

No Impact. A significant impact may occur if grading or excavation activities associated with a project would disturb historic resources that presently exist within the project site.

A historical resource is defined by California Public Resources Code Section 21084.1 and CEQA Guidelines Section 15064.5 as any resource listed in or determined to be eligible for listing in the California Register of Historical Resources (CRHR), is listed in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), is identified as significant in a historical resource survey meeting the requirements of Public Resources Code Section 5024.1(g), or is determined to be a historical resource by the project's lead agency. The criteria for listing resources on the CRHR were expressly developed to be in accordance with criteria for listing in the National Register of Historic Places, enumerated below. A resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria (PRC Section 5024.1[c][1–4]):

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]). A significant adverse effect would occur if a project were to adversely affect a historical resource as defined by California Public Resources Code Section 21084.1 and Section 15064.5 of the CEQA Guidelines.

The project site is currently a vacant parcel (located at 22434 Norwalk Boulevard) with no existing structures on site. Despite the parcel being vacant, the project site is located in a highly urbanized and developed area. The project site has been previously graded and contains disturbed soil and dry grasses. As such, the project site would not be eligible for listing in the National Register of Historic Places or CRHR, and thus, would not be considered a historical resource as defined by CEQA. Therefore, the project would result in no impacts to historical resources.

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. A significant impact may occur if grading or excavation activities would disturb archaeological resources within the project site. The project site has been previously graded and consists of disturbed soils and dry grasses. Previous on-site development activities affected the entirety of the project site, and as such, it follows that any archaeological resources that may have once been located on the project site could have been previously disturbed.

Nonetheless, it is always possible that intact archaeological deposits, including Tribal cultural resources, could be present at subsurface depths that were not impacted by previous grading activities. As such, the project site should be treated as potentially sensitive for archaeological resources. For this reason, and based on recommendations typically provided by the Gabrieleno Band of Mission Indians-Kizh Nation (refer to Section 3.18, Tribal Cultural Resources), who is consulting on the project, Mitigation measures (MM) CUL-1 and MM-CUL-2 are recommended to reduce potential impacts to unanticipated archaeological resources and Tribal cultural resources. With the incorporation of MM-CUL-1 and MM-CUL-2, impacts associated with archaeological resources would be less than significant.

MM-CUL-1 In consultation with the Gabrieleno Band of Mission Indians-Kizh Nation Tribal Government, the project applicant shall compensate via a Native American Monitoring Service Agreement for the services of a Tribal monitor who is both approved by Gabrieleno Band of Mission Indians-Kizh Nation Tribal Government and is listed under the NAHC's Tribal Contact list for the project area. The Tribal monitor shall only be present on the project site during the construction phases involving ground disturbance, which may include but are not limited to pavement removal, pot-holing or auguring, grubbing, tree removals, boring, grading, excavation, drilling, and trenching.

The Tribal monitor shall complete daily monitoring logs that provide descriptions of the day's activities, including construction activities, locations, soil, and any cultural materials identified. The on-site Tribal monitoring shall end when ground disturbing activities are completed, or when the Tribal monitor has indicated that the project site has a low potential for impacting archaeological and Tribal resources.

MM-CUL-2 If any archaeological or Tribal resources are discovered during ground disturbing activities, construction activity shall cease in the immediate vicinity of the find until the find can be assessed. All archaeological resources unearthed by construction activities shall be evaluated by the Tribal monitor and a qualified archaeologist meeting the Secretary of the Interior’s Professional Qualification Standards. If the find is Native American in origin, the Gabrieleno Band of Mission Indians-Kizh Nation shall coordinate with the landowner regarding treatment and curation. Costs associated with treatment and curation shall be burdened by the project applicant/developer, unless otherwise specified by the Tribe.

Construction activities may continue on other parts of the project site while evaluation and, if necessary, mitigation, occurs. If the find is determined to constitute a historic resource or unique archaeological resource, time allotment and funding sufficient to allow for implementation of avoidance measures shall be made available. A treatment plan shall be prepared by the applicant/developer's qualified consultant under the guidance of the Gabrieleno Band of Mission Indians-Kizh Nation for the resource(s) in accordance with CEQA Guidelines Section 15064.5(f) and/or Public Resources Code Sections 21083.2(b).

Preservation in place (i.e., avoidance) is the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation or archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. Any historic archaeological material that is not Native American in origin shall be curated at a public, non-profit institution with a research interest in the material. If no institution accepts the archaeological material, the material shall be offered to a local school or historical society.

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

Less-Than-Significant Impact. There are no previously recorded historic or cultural resources on the project site, nor are there any known human remains, burial grounds, or cemeteries located on or adjacent to the site. However, In accordance with California Health and Safety Code Section 7050.5, if human skeletal remains are uncovered during ground-disturbing activities, the lead agency staff and the County Coroner must be immediately notified of the discovery. The coroner would provide a determination within 48 hours of notification. No further excavation or disturbance of the identified material, or any area reasonably suspected to overlie additional remains, can occur until a determination has been made. If the County Coroner determines that the remains are, or are believed to be, Native American, the coroner would notify the Native American Heritage Commission (NAHC) within 24 hours. In accordance with California Public Resources Code Section 5097.98, the NAHC must immediately notify those persons it believes to be the most likely descendent (MLD) from the deceased Native American. Within 48 hours of this notification, the MLD would recommend to the lead agency her/his preferred treatment of the remains and associated grave goods.

In addition to these regulatory requirements, the Gabrieleno Band of Mission Indians-Kizh Nation requests that additional provisions also be incorporated to ensure that impacts related to human remains are minimized to the greatest extent feasible. These supplemental measures are provided in MM-CUL-3. With compliance with existing state law and MM-CUL-3, impacts associated with human remains would be less than significant.

MM-CUL-3 In addition to the requirements established in California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097.98, if human remains or funerary objects are uncovered during ground-disturbing activities, the Tribal monitor shall immediately divert work to a minimum of 150 feet from the discovery and place an exclusion zone around the burial. The Tribal monitor shall then notify the Gabrieleno Band of Mission Indians-Kizh Nation, a qualified archaeologist, and the construction manager who will call the County Coroner. Construction activities shall continue to be diverted while the Corner determines whether the remains are Native American. The discovery shall be confidential and secure to further disturbance. If the discovery is determined to be Native American, the Corner shall notify the Native American Heritage Commission (NAHC) as mandated by state law, who shall then appoint a Most Likely Descendent (MLD).

If the Gabrieleno Band of Mission Indians-Kizh Nation is designated as the MLD, treatment measures in accordance with Tribal practices and customs shall be implemented. Treatment measures may include the land owner arranging for a designated on-site location for the respectful reburial of the human remains and/or ceremonial objects. If the discovered human remains cannot be fully documented and recovered on the same day, the remains shall be covered with muslin cloth and a steel plate that can only be moved by heavy equipment. If a steel plate is not available, a guard shall be posted on-site during all non-working hours.

Each occurrence of human remains and associated funerary objects shall be stored using opaque cloth bags. All human remains, funerary objects, sacred objects, and objects of cultural patrimony shall be removed to a secure container on-site. These items shall be retained and reburied within six months of recovery. The site of reburial/repatriation shall be on the project site but at an on-site location agreed upon between the Gabrieleno Band of Mission Indians-Kizh Nation and landowner between in an area that shall be protected in perpetuity. There shall be no publicity regarding any cultural materials recovered.

If it is determined by the Gabrieleno Band of Mission Indians-Kizh Nation the burial must be removed from the Project site, the Tribe shall work with the qualified archaeologist to ensure that the excavation is treated carefully, ethically, and respectfully. If data recovery is approved by the Tribe, documentation shall be taken that includes, at a minimum, detailed descriptive notes and sketches. Additional types of documentation may be approved by the Tribe for data recovery purposes. Cremations shall either be removed in bulk or by other means, as necessary, to ensure complete recovery of all material. If discovery of human remains includes four or more burials, the location shall be considered a cemetery and a separate treatment plan shall be prepared. Once complete, a final report of all activities shall be submitted to the Tribe and NAHC. The Tribe shall not authorize scientific study or use of invasive diagnostics on human remains.

3.6 Energy

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
VI. Energy – Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

a) Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less-Than-Significant Impact. The construction and operation of the proposed project would require the consumption of energy resources in several forms at the proposed project site and within the proposed project site area. In general, the aggregated-temporary (approximate 11-month), construction energy consumption would be less than energy consumed during the long-term operation of the facility. An overview of the forms of energy consumption for construction and operation is provided as follows:

Construction Energy Consumption

1. Temporary Direct Electrical Service: Energy Provided by Southern California Edison (SCE)
   - Construction site lighting
   - Computer equipment
   - Temporary construction trailer operation
2. Fossil Fuels (Diesel and Gasoline)
   - Off-road construction equipment
   - Diesel-fired electric generators
   - Worker vehicles, vendor trucks, and haul trucks

Operational Energy Consumption

1. Direct Electrical Service: Energy Provided by SCE
   - Building heating, ventilation, and air-conditioning (HVAC)
   - Lighting: interior and exterior facilities

- Computer, audio and video equipment
- Appliances

2. Indirect Energy Consumption
   - Supply, distribution, and treatment of water and wastewater; solid waste
3. Fossil Fuels (Diesel and Gasoline) Transportation
   - Project employees, delivery, and customers.

Construction and operational energy consumption is evaluated in detail below.

Construction

Electricity

Temporary electric power for as-necessary lighting and electronic equipment (such as computers inside temporary construction trailers) would be provided by SCE. The electricity used for such activities would be temporary and be substantially less than that required for project operation, and would have a negligible contribution to the project's overall energy consumption.

Natural Gas

Natural gas is not anticipated to be required during construction of the proposed project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed below under "Petroleum." Any minor amounts of natural gas that may be consumed as a result of project construction would be substantially less than that required for project operation and would have a negligible contribution to the project's overall energy consumption.

Petroleum

Heavy-duty construction equipment associated with demolition and construction activities would rely on diesel fuel, as would vendor trucks involved in delivery of materials to the project site. Construction workers would travel to and from the project site throughout the duration of construction. It is assumed in this analysis that construction workers would travel in gasoline-powered light-duty vehicles.

Heavy-duty construction equipment of various types would be used during each phase of project construction. Appendix A lists the assumed equipment usage for each phase of construction. The project's construction equipment is estimated to operate a total combined 10,532 hours.

Fuel consumption from construction equipment was estimated by converting the total carbon dioxide (CO2) emissions from each construction phase to gallons using the conversion factors for CO2 to gallons of gasoline or diesel. The conversion factor for gasoline is 8.78 kilograms per metric ton CO2 per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO2 per gallon (The Climate Registry 2019). The estimated diesel fuel usage from construction equipment is provided in Table 6.

Table 6. Construction Equipment Diesel Demand (Off-Road Equipment)

Phase	Pieces of Equipment	Equipment CO_2 (MT)	kg/CO_2/Gallon	Gallons
Site Preparation	3	1.55	10.21	151.49
Grading	3	2.53	10.21	248.15
Building Construction	7	181.92	10.21	17,818.25
Paving	5	5.88	10.21	576.18
Architectural Coating	1	1.28	10.21	125.03
			Total	**18,919.10**

Sources: Pieces of equipment and equipment CO_2 (Appendix A); kg/CO_2/Gallon (The Climate Registry 2019).
Notes: CO_2 = carbon dioxide; MT = metric ton; kg = kilogram.

Fuel consumption from worker, vendor, and haul truck trips are estimated by converting the total CO2 emissions from each construction phase to gallons using the conversion factors for CO2 to gallons of gasoline or diesel. Worker vehicles are assumed to be gasoline, and vendor/hauling vehicles are assumed to be diesel. Calculations for total worker, vendor, and haul truck fuel consumption are provided in Table 7, Table 8, and Table 9.

Table 7. Construction Worker Gasoline Demand

Phase	Trips	Vehicle MT CO_2	kg/CO_2/Gallon	Gallons
Site Preparation	16	0.08	8.78	9.29
Grading	32	0.16	8.78	18.59
Building Construction	6,800	33.88	8.78	3,859.02
Paving	140	0.69	8.78	78.82
Architectural Coating	80	0.40	8.78	45.05
			Total	**4,010.76**

Sources: Trips and vehicle CO_2 (Appendix A); kg/CO_2/Gallon (The Climate Registry 2019).
Notes: MT = metric ton; CO_2 = carbon dioxide; kg = kilogram.

Table 8. Construction Vendor Diesel Demand

Phase	Trips	Vehicle MT CO_2	kg/CO_2/Gallon	Gallons
Site Preparation	0	0.00	10.21	0.00
Grading	0	0.00	10.21	0.00
Building Construction	2,800	34.31	10.21	3,360.02
Paving	0	0.00	10.21	0.00
Architectural Coating	0	0.00	10.21	0.00
			Total	**3,360.02**

Sources: Trips and vehicle CO_2 (Appendix B); kg/CO_2/Gallon (The Climate Registry 2019).
Notes: MT = metric ton; CO_2 = carbon dioxide; kg = kilogram.

Table 9. Construction Haul Truck Diesel Demand

Phase	Trips	Vehicle MT CO_2	kg/CO_2/Gallon	Gallons
Site Preparation	0	0.00	10.21	0.00
Grading	18	0.69	10.21	67.56
Building Construction	0	0.00	10.21	0.00
Paving	0	0.00	10.21	0.00
Architectural Coating	0	0.00	10.21	0.00
			Total	**67.56**

Sources: Trips and vehicle CO_2 (Appendix A); kg/CO_2/Gallon (The Climate Registry 2019).
Notes: MT = metric ton; CO_2 = carbon dioxide; kg = kilogram.

In summary, construction of the project is conservatively anticipated to consume 4,011 gallons of gasoline and 22,347 gallons of diesel over approximately 11 months. By comparison, California's consumption of petroleum is approximately 74.8 million gallons per day. Based on these assumptions, approximately 18 billion gallons of petroleum would be consumed in California over the course of the construction period (EIA 2017). Within Los Angeles County, approximately 9,436 million gallons of petroleum (gasoline and diesel) would be consumed over the course of the construction period (CARB 2019). Therefore, impacts associated during construction would be less than significant. No mitigation is required.

Operation

Electricity

Operation of the project upon buildout would require electricity for multiple purposes, including cooling, lighting, appliances, and various equipment. Additionally, the supply, conveyance, treatment, and distribution of water and wastewater would indirectly result in electricity usage. Electricity consumption associated with project operation is based on CalEEMod outputs presented in Appendix A.

CalEEMod default values for energy consumption for each land use were applied for the project analysis. The project involves both residential and nonresidential uses. For residential energy use, CalEEMod uses data collected during the Residential Appliance Saturation Survey to develop energy intensity values (electricity and natural gas per square foot per year). The energy use from nonresidential land uses is calculated in CalEEMod based on the California Commercial End-Use Survey database. For parking lots, CalEEMod includes calculation of energy use from lighting, ventilation, and elevators in parking lots and structures. Energy use in buildings (both natural gas and electricity) is divided by the program into end use categories subject to California Building Standards Code (Title 24) requirements (end uses associated with the building envelope, such as the HVAC system, water heating system, and integrated lighting) and those not subject to California Building Standards Code requirements (such as appliances, electronics, and miscellaneous "plug-in" uses).

The California Building Standards Code serves to enhance and regulate California's building standards. The Building Energy Efficiency Standards are part of the California Building Standards Code (specifically, Part 6 of Title 24). The most recent version of the Building Energy Efficiency Standards is referred to as the "2019 Building Energy Efficiency Standards" and goes into effect in January 2020. As a result, the proposed project would consume approximately 328,563 kilowatt-hours per year during operation. For comparison, in 2017 the total residential and nonresidential electricity demand in Los Angeles County was 67,569,242,472 kilowatt-hours (CEC 2019a). The project's electricity consumption would represent a county-wide increase of 0.0005%, and therefore represent a less than significant impact to electrical energy resources.

__Natural Gas__

Project operation would require natural gas for various purposes, including water heating and natural gas appliances. Natural gas consumption associated with operation is based on the CalEEMod outputs (see Appendix A).

CalEEMod default values for energy consumption for each land use were applied for the project analysis. For residential energy use, CalEEMod uses data collected during the Residential Appliance Saturation Survey to develop energy intensity values (electricity and natural gas per square foot per year). The energy use from nonresidential land uses is calculated in CalEEMod based on the California Commercial End-Use Survey database. Energy use in buildings (both natural gas and electricity) is divided by the program into end use categories subject to California Building Standards Code requirements (end uses associated with the building envelope, such as the HVAC system, water heating system, and integrated lighting) and those not subject to California Building Standards Code requirements (such as appliances, electronics, and miscellaneous "plug-in" uses). Based on CalEEMod estimations, the proposed project would consume approximately 1,011,090 kilo-British Thermal Units per year. For comparison, in 2017 the nonresidential natural gas use within Los Angeles County was 295,601,223,219 kilo-British Thermal Units (CEC 2019b).

__Petroleum__

During operations, the majority of fuel consumption resulting from the project would involve the use of motor vehicles traveling to and from the project site including hotel employees and customers.

Petroleum fuel consumption associated with motor vehicles traveling to and from the project site is a function of the VMT as a result of project operation. The annual VMT attributable to the proposed project is expected to be 1,417,386 VMT (Appendix B). Similar to the construction worker and vendor trips, fuel consumption from operational trips are estimated by converting the total CO_2 emissions from operation of the project to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. Based on the annual fleet mix provided in CalEEMod, 92.3% of the fleet range from light-duty to medium-duty vehicles and motorcycles are assumed to run on gasoline. The remaining 7.7% of vehicles represent medium-heavy duty to heavy-duty vehicles, and buses and are assumed to run on diesel.

Calculations for annual mobile source fuel consumption are provided in Table 10 (gasoline) and Table 11 (diesel).

Table 10. Annual Mobile Source Gasoline Demand

	Vehicle MT CO_2	kg/CO_2/Gallon	Gallons
Operation	569.02	8.78	64,809.19

Sources: Trips and vehicle CO_2 (Appendix B); kg/CO_2/Gallon (The Climate Registry 2019).
Notes: MT = metric ton; CO_2 = carbon dioxide; kg = kilogram

Table 11. Annual Mobile Source Diesel Demand

	Vehicle MT CO_2	kg/CO_2/Gallon	Gallons
Operation	46.26	10.21	4,530.99

Sources: Trips and vehicle CO_2 (Appendix B); kg/CO_2/Gallon (The Climate Registry 2019).
Notes: MT = metric ton; CO_2 = carbon dioxide; kg = kilogram

Over the lifetime of the project, the fuel efficiency of vehicles used by employees and customers, as well as vehicles used for deliveries to the project site, is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the project site during operation would decrease over time. There are numerous regulations in place that require and encourage increased fuel efficiency. For example, CARB has adopted an approach to passenger vehicles by combining the control of smog-causing pollutants and GHG emissions into a single, coordinated package of standards. The approach also includes efforts to support and accelerate the number of plug-in hybrids and zero-emissions vehicles in California (CARB 2013). Additionally, in response to Senate Bill 375, CARB adopted the goal of reducing per-capita GHG emissions from 2005 levels by 8% by 2020, and 18% by 2035 for light-duty passenger vehicles in the SCAG planning area. As such, operation of the project is expected to use decreasing amounts of petroleum over time due to advances in fuel economy.

Summary

The proposed project would create additional electricity and natural gas demand by adding a new hotel. However, the project would be subject to the 2019 Building Energy Efficiency Standards, which apply to new construction and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. Compliance with the 2019 Building Energy Efficiency Standards would ensure that the energy efficiency of the proposed buildings is maximized to the extent feasible. For these reasons, the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy. Impacts would be less than significant, and no mitigation is required.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less-Than-Significant Impact. The proposed project would be subject to state regulations for energy efficiency, namely, California's Building Energy Efficiency Standards and CALGreen, both of which are set forth in the California Code of Regulations, Title 24. California's Building Energy Efficiency Standards were established in 1978 and serve to enhance and regulate California's building standards. These standards include regulations for residential and nonresidential buildings constructed in California to reduce energy demand and consumption. The Building Energy Efficiency Standards are updated periodically (every 3 years) to incorporate and consider new energy efficiency technologies and methodologies. CALGreen institutes mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential, and state-owned buildings, as well as schools and hospitals. The 2016 CALGreen standards became effective on January 1, 2017. The new 2019 standard become effective on January 1, 2020. The proposed project would meet Building Energy Efficiency Standards and CALGreen standards to reduce energy demand and increase energy efficiency.

At a regional level, the proposed project would be subject to the policies set forth in SCAG's 2016 RTP/SCS. The RTP/SCS is a regional growth-management strategy that targets per-capita GHG reduction from passenger vehicles and light-duty trucks in the Southern California region pursuant to Senate Bill (SB) 375.

In addition to demonstrating the region's ability to attain and exceed the GHG emission-reduction targets set forth by CARB, the 2016 RTP/SCS outlines a series of actions and strategies for integrating the transportation network with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands. Thus, successful implementation of the 2016 RTP/SCS would result in more complete communities with a variety of transportation and housing choices, while reducing automobile use. With regard to individual developments, such as the project, the strategies and policies set forth in the 2016 RTP/SCS include improved energy efficiency. The 2016 RTP/SCS goal is to actively encourage and create incentives for energy efficiency, where possible. As discussed previously, the project would comply with the 2019 CALGreen standards. For these reasons, the proposed project would be consistent with the SCAG 2016 RTP/SCS.

The proposed project would follow applicable energy standards and regulations during construction. In addition, the proposed project would be built and operated in accordance with all existing, applicable regulations at the time of construction. As such, the proposed project would not conflict with existing energy standards and regulations; therefore, impacts during construction and operation of the proposed project would be less than significant, and no mitigation is required.

3.7 Geology and Soils

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
VII. GEOLOGY AND SOILS – Would the project:				
a) Directly or indirectly cause 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?	☐	☐	☒	☐

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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 direct or indirect 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?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

a) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less-Than-Significant Impact. According to the City's General Plan, no active faults have been identified within the City. According to the General Plan Safety Element, the closest faults in the broader project region include the Norwalk Fault, the Newport-Inglewood Fault, and the Los Alamitos Fault (City of Hawaiian Gardens 2010). The Los Alamitos Fault is the closest fault and is located 4.6 miles southwest of the project site. None of these faults underlies either the City or the project site. Thus, although the project could experience strong seismic ground shaking (see Section 3.7(a)(ii)), the project site is not susceptible to surface rupture. Therefore, the project would not directly or indirectly cause potential adverse effects related to the rupture of a known earthquake fault, and impacts associated with fault rupture would be less than significant.

ii) Strong seismic ground shaking?

Less-Than-Significant Impact. Similar to other areas located in the seismically active Southern California region, the City is susceptible to ground shaking during an earthquake. Numerous faults considered active or potentially active have been mapped in Southern California, including in the vicinity of the City. However, as addressed in Section 3.7(a)(i), the project is not located within an active fault zone, and the site would not be affected by ground shaking more than any other area in the seismically active region. Therefore, the project would not directly or indirectly cause potential adverse effects related to seismic ground shaking, and impacts associated with strong seismic ground shaking would be less than significant.

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. According to Exhibit 6-3 in the City's General Plan Safety Element, the entire City is located in a liquefaction zone. The liquefaction risk is no greater for the project site than it is for the surrounding areas and cities. Additionally, the project would be designed in accordance with all applicable provisions established in the current California Building Code, which sets forth specific engineering requirements to ensure structural integrity, regardless of the specific geotechnical characteristics of a particular site. Therefore, impacts associated with liquefaction would be less than significant.

iv) Landslides?

No Impact. According to the General Plan Safety Element, the City does not have any known landslide zones (City of Hawaiian Gardens 2010). The project site and surrounding area are predominantly flat and lack any substantial topographical variations. No hillsides are located on or adjacent to the project site. Therefore, no impacts associated with landslides 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 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. However, construction activities would comply with all applicable state and local regulations for erosion control and grading. The proposed project would be required to comply with standard regulations, including SCAQMD Rules 402 and 403, which would reduce construction erosion impacts. 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). Rule 402 requires dust suppression techniques be implemented to prevent dust and soil erosion from creating a nuisance off site (SCAQMD 1976).

Additionally, the project site is larger than 1-acre and would be subject to NPDES Construction General Permit requirements; thus, construction activities would be required to incorporate various temporary BMPs designed to prevent erosion and siltation during construction (EPA 2010). Therefore, with adherence to these regulatory requirements, 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 operational, the project site would be developed with a 71-unit hotel, and paved parking areas and drive aisles. Collectively, these on-site areas would reduce the potential for soil erosion and topsoil loss. The structural and paved improvements would be impervious areas lacking any exposed soils. Therefore, long-term construction 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. According to the City's General Plan Safety Element, the City is blanketed by alluvial soil, containing sand, silt, and clay silts (City of Hawaiian Gardens 2010). The project site soil is classified as Urban land-Hueneme, drained-San Emigdio complex, which is described as discontinuous human-transported material over mixed alluvium derived from granite and/or sedimentary rock (USDA 2019).

As addressed in Section 3.7(a)(iii), the entire City has been identified as being located in a liquefaction hazard zone. However, the liquefaction risk is no greater for the project site than it is for the surrounding areas and cities. Additionally, the project would be designed in accordance with all applicable provisions established in the current California Building Code, which sets forth specific engineering requirements to ensure structural integrity, regardless of the specific geotechnical characteristics of a particular site. Furthermore, as previously mentioned in 3.7(a)(iv), the City has relatively flat topography and is not known to have any landslide zones. 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 direct or indirect 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.

As described in the City's General Plan Safety Element, the City is blanketed by alluvial soil, containing sand, silt, and clay silts (City of Hawaiian Gardens 2010). The U.S. Department of Agriculture's Web Soil Survey does not identify the project site or surrounding areas as clay soils, which are typically expansive. The project site is classified as Urban land-Hueneme, drained-San Emigdio complex, which is described as discontinuous human-transported material over mixed alluvium derived from granite and/or sedimentary rock (USDA 2019). 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 project would connect to the existing municipal sewer system and would not require a septic or alternative wastewater disposal system. Therefore, no impacts associated with the ability of soils to support septic tanks would occur.

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

Less-Than-Significant Impact with Mitigation Incorporated. A significant impact may occur if grading or excavation activities would disturb paleontological resources within the project site. The project site has been previously graded and consists of disturbed soils and dry grasses. Previous on-site development activities affected the entirety of the project site, and as such, it follows that any paleontological resources that may have once been located on the project site could have been previously disturbed. Further, according to the U.S. Department of Agriculture's Web Soil Survey, the project site is underlain by Urban land-Hueneme, drained-San Emigdio complex, which is described as discontinuous human-transported material over mixed alluvium derived from granite and/or sedimentary rock (USDA 2019). Human-transported fill materials generally do not contain significant paleontological resources on or very near the surface immediately underlying the project site. Therefore, the likelihood of affecting paleontological resources within the project site is considered low. Nonetheless, it is always possible that intact paleontological resources are present at subsurface depths that were not impacted by previous grading activities. For instance, at depths below human-transported fill materials, there is a greater likelihood of encountering sediments that are old enough to contain significant paleontological resources. Given these factors, the likelihood of impacting paleontological resources within the project site is considered low above the original ground surface, increasing with depth. Therefore, if excavations are anticipated to occur at depths below the original surface, mitigation is required. MM-GEO-1 is recommended to reduce potential impacts to unanticipated paleontological resources. With incorporation of MM-GEO-1, impacts associated with paleontological resources would be less than significant.

MM-GEO-1 If excavations reach depths below human-transported fill materials, a qualified paleontologist meeting the Society of Vertebrate Paleontologists (SVP) (2010) standards should be retained to determine when and where paleontological monitoring is warranted. The qualified paleontologist or a qualified paleontological monitor meeting the SVP (2010) standards under the direction of the qualified paleontologist shall conduct the paleontological monitoring. If the sediments are determined by the qualified paleontologist to be too young or too coarse-grained to likely preserve paleontological resources, the qualified paleontologist can reduce or terminate monitoring per the SVP (2010) guidelines and based on the excavations remaining for the project.

3.8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
VIII. 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?	☐	☐	☒	☐

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

Short-Term Construction Emissions

Less-Than-Significant Impact. Construction of the project would result in GHG emissions, which are primarily associated with use of off-road construction equipment, on-road vendor and haul trucks, and worker vehicles. As previously stated, SCAQMD recommends that construction emissions be amortized over a 30-year project lifetime; therefore, the total construction GHG emissions were calculated, amortized over 30 years, and then compared to the SCAQMD operational GHG significance threshold of 1,400 metric tons of carbon dioxide equivalent (MT CO2e) per year.

The CalEEMod was used to estimate GHG emissions during construction. Construction of the project is anticipated to last up to 11 months. On-site sources of GHG emissions include off-road equipment and off-site sources include on-road vehicles (haul trucks, vendor trucks, and worker vehicles). Table 12 presents construction GHG emissions for the project from on-site and off-site emission sources.

Table 12. Estimated Annual Construction Greenhouse Gas Emissions

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons			
2019	68.07	0.01	0.00	68.35
2020	195.30	0.03	0.00	196.04
			Total	**264.39**
			Annualized emissions over 30 years (metric tons per year)	***8.81***

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
See Appendix A for complete results.

As shown in Table 12, the estimated total GHG emissions during construction would be approximately 264 MT CO2e. Estimated project-generated construction emissions amortized over 30 years would be approximately 9 MT CO2e per year. As with project-generated construction air quality pollutant emissions, GHG emissions generated during construction of the project would be short-term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions. Because there is no separate GHG threshold for construction, the evaluation of significance is determined by adding the amortized construction emissions to the operational emissions and comparing them to the operational threshold.

Long-Term Operational Emissions

Less-Than-Significant Impact. CalEEMod was used to estimate potential project-generated operational GHG emissions from area sources (landscape maintenance), energy sources (natural gas and electricity), mobile sources, solid waste, and water supply and wastewater treatment. Emissions from each category are discussed in the following text with respect to the project. For additional details, see Appendix A for a discussion of operational emission calculation methodology and assumptions, specifically for area, energy (natural gas and electricity), and mobile sources. Operational year 2021 was assumed as the first full year of operation.

Area Sources

CalEEMod was used to estimate GHG emissions from the project's area sources, which include operation of gasoline-powered landscape maintenance equipment, which produce minimal GHG emissions. See Section 3.3(b) for a discussion of landscaping equipment emissions calculations. Consumer product use and architectural coatings result in VOC emissions, which are analyzed in the air quality analysis only, and little to no GHG emissions.

Energy Sources

The estimation of operational energy emissions was based on CalEEMod land use defaults and units or total area (i.e., square footage) of the project's land uses. For nonresidential buildings, CalEEMod energy intensity value (electricity or natural gas usage per square foot per year) assumptions were based on the California Commercial End-Use Survey database. Emissions are calculated by multiplying the energy use by the utility carbon intensity (pounds of GHGs per kilowatt-hour for electricity or 1,000 British thermal units for natural gas) for carbon dioxide (CO2) and other GHGs. Annual natural gas (non-hearth) and electricity emissions were estimated in CalEEMod using the emissions factors for SCE, which would be the energy source provider for the project. The project has no natural gas connection to the site and will not use natural gas. CalEEMod default assumptions were used for electricity use. The CalEEMod default natural gas use was converted to electricity to account for the additional electricity load.

Mobile Sources

All details for criteria air pollutants discussed in Section 3.3(b) are also applicable for the estimation of operational mobile source GHG emissions. Regulatory measures related to mobile sources include AB 1493 (Pavley) and related federal standards. AB 1493 required that CARB establish GHG emission standards for automobiles, light-duty trucks, and other vehicles determined by CARB to be vehicles that are primarily used for noncommercial personal transportation in the state. In addition, the National Highway Traffic Safety Administration and U.S. Environmental Protection Agency have established corporate fuel economy standards and GHG emission standards, respectively, for automobiles and light-, medium-, and heavy-duty vehicles. Implementation of these standards and fleet turnover (replacement of older vehicles with newer ones) will gradually reduce emissions from the project's motor vehicles. The effectiveness of fuel economy improvements was evaluated by using the CalEEMod emission factors for motor vehicles in 2021 to the extent it was captured in EMFAC 2014.

The Low Carbon Fuel Standard calls for a 10% reduction in the carbon intensity of motor vehicle fuels by 2020, which would further reduce GHG emissions. However, the carbon intensity reduction associated with the Low Carbon Fuel Standard was not assumed in EMFAC 2014 and thus was not included in CalEEMod Version 2016.3.2 or the following calculations.

Solid Waste

The project would generate solid waste and therefore would result in CO2e emissions associated with landfill off gassing. CalEEMod default values for solid waste generation were used to estimate GHG emissions associated with solid waste. Per AB 341 (requiring mandatory commercial recycling beginning July 1, 2012), a 50% diversion rate has been included in the GHG assessment.

Water and Wastewater

Supply, conveyance, treatment, and distribution of water for the project require the use of electricity, which would result in associated indirect GHG emissions. Similarly, wastewater generated by the project requires the use of electricity for conveyance and treatment, along with GHG emissions generated during wastewater treatment. Water consumption estimates for both indoor and outdoor water use and associated electricity consumption from water use and wastewater generation were estimated using CalEEMod default values. Table 13 presents the GHG emissions of the project during operation.

Table 13. Estimated Annual Operation Greenhouse Gas Emissions

Emissions Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Area	0.00	0.00	0.00	0.00
Energy	158.64	0.01	0.00	159.34
Mobile	616.29	0.04	0.00	616.08
Waste	8.57	0.51	0.00	21.24
Water	12.44	0.07	0.00	14.86
Amortized construction emissions	—	—	—	8.81
			Total	**820.33**
			SCAQMD Threshold	*1,400*
			Threshold Exceeded?	**No**

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; SCAQMD = South Coast Air Quality Management District.
See Appendix A for complete results.

As shown in Table 13, the estimated total GHG emissions during operation of the project would be approximately 820 MT CO2e, including amortized construction emissions. The project would not exceed the SCAQMD threshold of 1,400 MT CO2e per year. Projects below this significance criterion have a minimal contribution to global emissions and are considered to have less-than-significant impacts. Therefore, operational impacts associated with directly or indirectly generating a significant quantity of GHG emissions would be less than significant.

b) ***Would the project generate conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?***

Less-Than-Significant Impact. The City has not adopted a comprehensive climate action plan, and there is currently no local guidance that would be applicable to the project. At this time, no mandatory GHG plans, policies, or regulations or finalized agency guidelines would apply to implementation of the project.

Consistency with the SCAG's 2016–2040 Regional Transportation Plan and the 2016 SCAQMD AQMP

SCAG's 2016 RTP/SCS is a regional growth-management strategy that targets per-capita GHG reduction from passenger vehicles and light-duty trucks in the Southern California region. The 2016 RTP/SCS incorporates local land use projections and circulation networks in city and county general plans. Typically, a project would be consistent with the RTP/SCS if the project does not exceed the underlying growth assumptions within the RTP/SCS. Because the project is not growth inducing, this type of consistency analysis does not apply. The project would not conflict with most of the goals within SCAG's 2016 RTP/SCS. The project would conflict with the goal to improve air quality and GHG in the region. However, as shown in Sections 3.3(b) and 3.7(a), the project would not exceed any SCAQMD thresholds and would not result in a substantial amount of air pollutant or GHG emissions.

While striving to achieve the NAAQS for O3 and PM2.5 and the CAAQS for O3, PM10, and PM2.5 through a variety of air quality control measures, the SCAQMD 2016 AQMP also accommodates planned growth in the SCAB. 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). As discussed in Section 3.3(a), the demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by SCAG for their 2016–2040 RTP/SCS, which are based on general plans for cities and counties in the SCAB, were used to estimate future emissions in the 2016 AQMP (SCAQMD 2017). Accordingly, the 2016 AQMP is generally consistent with local government plans. The project does not have growth-inducing components and thus would not conflict with the growth projections within the 2016 AQMP. Therefore, the project would be consistent with the goals of the 2016 AQMP.

Consistency with CARB's Scoping Plan

The Scoping Plan (approved by CARB in 2008 and updated in 2014 and 2017) provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly applicable to specific projects; nor is it intended to be used for project-level evaluations.2 Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-global warming potential (GHGs in

2 The Final Statement of Reasons for the amendments to the CEQA Guidelines reiterates the statement in the Initial Statement of Reasons that "[t]he Scoping Plan may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009).

consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., Low Carbon Fuel Standard), among others.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32 and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. Table 14 highlights measures that have been, or will be, developed under the Scoping Plan and presents the project's consistency with Scoping Plan measures. The project would comply with all regulations adopted in furtherance of the Scoping Plan to the extent required by law and to the extent that they are applicable to the project.

Table 14. Proposed Project Consistency with Scoping Plan Greenhouse Gas Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
Transportation Sector		
Advanced Clean Cars	T-1	*Consistent.* The project's employees would operate vehicles in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase.
Low Carbon Fuel Standard	T-2	*Consistent.* Motor vehicles driven by the project's employees would use compliant fuels.
Regional Transportation-Related GHG Targets	T-3	*Not applicable.* The project would not prevent CARB from implementing this measure.
Advanced Clean Transit	—	*Not applicable.* The project would not prevent CARB from implementing this measure.
Last-Mile Delivery	—	*Not applicable.* The project would not prevent CARB from implementing this measure.
Reduction in VMT	—	*Not applicable.* The project would not prevent CARB from implementing this measure.
Vehicle Efficiency Measures 1. Tire Pressure 2. Fuel Efficiency Tire Program 3. Low-Friction Oil 4. Solar-Reflective Automotive Paint and Window Glazing	T-4	*Not applicable.* The project would not prevent CARB from implementing this measure.
Ship Electrification at Ports (Shore Power)	T-5	*Not applicable.* The project would not prevent CARB from implementing this measure.
Goods Movement Efficiency Measures 1. Port Drayage Trucks 2. Transport Refrigeration Units Cold Storage Prohibition 3. Cargo Handling Equipment, Anti-Idling, Hybrid, Electrification 4. Goods Movement Systemwide Efficiency Improvements 5. Commercial Harbor Craft Maintenance and Design Efficiency 6. Clean Ships 7. Vessel Speed Reduction	T-6	*Not applicable.* The project would not prevent CARB from implementing this measure.

Table 14. Proposed Project Consistency with Scoping Plan Greenhouse Gas Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
Heavy-Duty Vehicle GHG Emission Reduction • Tractor-Trailer GHG Regulation • Heavy-Duty Greenhouse Gas Standards for New Vehicle and Engines (Phase I)	T-7	*Not applicable.* The project would not prevent CARB from implementing this measure.
Medium- and Heavy-Duty Vehicle Hybridization Voucher Incentive Proposed Project	T-8	*Not applicable.* The project would not prevent CARB from implementing this measure.
Medium and Heavy-Duty GHG Phase 2	—	*Not applicable.* The project would not prevent CARB from implementing this measure.
High-Speed Rail	T-9	*Not applicable.* The project would not prevent CARB from implementing this measure.
Electricity and Natural Gas Sector		
Energy Efficiency Measures (Electricity)	E-1	*Not applicable.* The project would not prevent CARB from implementing this measure.
Energy Efficiency (Natural Gas)	CR-1	*Not applicable.* The project would not prevent CARB from implementing this measure.
Solar Water Heating (California Solar Initiative Thermal Program)	CR-2	*Not applicable.* The project would not prevent CARB from implementing this measure.
Combined Heat and Power	E-2	*Not applicable.* The project would not prevent CARB from implementing this measure.
Renewables Portfolio Standard (33% by 2020)	E-3	*Not applicable.* The project would not prevent CARB from implementing this measure.
Renewables Portfolio Standard (50% by 2050)	—	*Not applicable.* The project t would not prevent CARB from implementing this measure.
SB 1 Million Solar Roofs (California Solar Initiative, New Solar Home Partnership, Public Utility Programs) and Earlier Solar Programs	E-4	*Not applicable.* The project would not prevent CARB from implementing this measure.
Water Sector		
Water Use Efficiency	W-1	*Not applicable.* The project would not prevent CARB from implementing this measure.
Water Recycling	W-2	*Not applicable.* The project would not prevent CARB from implementing this measure.
Water System Energy Efficiency	W-3	*Not applicable.* The project would not prevent CARB from implementing this measure.
Reuse Urban Runoff	W-4	*Not applicable.* The project would not prevent CARB from implementing this measure.
Renewable Energy Production	W-5	*Not applicable.* The project would not prevent CARB from implementing this measure.
Green Buildings		
1. State Green Building Initiative: Leading the Way with State Buildings	GB-1	*Not applicable.* The project would not prevent CARB from implementing this measure.

Table 14. Proposed Project Consistency with Scoping Plan Greenhouse Gas Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
(Greening New and Existing State Buildings)		
2. Green Building Standards Code (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	*Not applicable.* The project would not prevent CARB from implementing this measure.
3. Beyond Code: Voluntary Programs at the Local Level (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	*Not applicable.* The project would not prevent CARB from implementing this measure.
4. Greening Existing Buildings (Greening Existing Homes and Commercial Buildings)	GB-1	*Not applicable.* The project would not prevent CARB from implementing this measure.
Industry Sector		
Energy Efficiency and Co-Benefits Audits for Large Industrial Sources	I-1	*Not applicable.* The project would not prevent CARB from implementing this measure.
Oil and Gas Extraction GHG Emission Reduction	I-2	*Not applicable.* The project would not prevent CARB from implementing this measure.
Reduce GHG Emissions by 20% in Oil Refinery Sector	—	*Not applicable.* The project would not prevent CARB from implementing this measure.
GHG Emissions Reduction from Natural Gas Transmission and Distribution	I-3	*Not applicable.* The project would not prevent CARB from implementing this measure.
Refinery Flare Recovery Process Improvements	I-4	*Not applicable.* The project would not prevent CARB from implementing this measure.
Work with the Local Air Districts to Evaluate Amendments to Their Existing Leak Detection and Repair Rules for Industrial Facilities to Include Methane Leaks	I-5	*Not applicable.* The project would not prevent CARB from implementing this measure.
Recycling and Waste Management Sector		
Landfill Methane Control Measure	RW-1	*Not applicable.* The project would not prevent CARB from implementing this measure.
Increasing the Efficiency of Landfill Methane Capture	RW-2	*Not applicable.* The project would not prevent CARB from implementing this measure.
Mandatory Commercial Recycling	RW-3	*Consistent.* To the maximum extent practicable, the project would include recycling during both construction and operation, as required by local and state regulations.
Increase Production and Markets for Compost and Other Organics	RW-3	*Not applicable.* The project would not prevent CARB from implementing this measure.
Anaerobic/Aerobic Digestion	RW-3	*Not applicable.* The project would not prevent CARB from implementing this measure.
Extended Producer Responsibility	RW-3	*Not applicable.* The project would not prevent CARB from implementing this measure.
Environmentally Preferable Purchasing	RW-3	*Not applicable.* The project would not prevent CARB from implementing this measure.

Table 14. Proposed Project Consistency with Scoping Plan Greenhouse Gas Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
Forests Sector		
Sustainable Forest Target	F-1	*Not applicable.* The project would not prevent CARB from implementing this measure.
High GWP Gases Sector		
Motor Vehicle Air Conditioning Systems: Reduction of Refrigerant Emissions from Non-Professional Servicing	H-1	*Not applicable.* The project would not prevent CARB from implementing this measure.
SF_6 Limits in Non-Utility and Non-Semiconductor Applications	H-2	*Not applicable.* The project would not prevent CARB from implementing this measure.
Reduction of Perfluorocarbons in Semiconductor Manufacturing	H-3	*Not applicable.* The project would not prevent CARB from implementing this measure.
Limit High GWP Use in Consumer Products	H-4	*Not applicable.* The project would not prevent CARB from implementing this measure.
Air Conditioning Refrigerant Leak Test During Vehicle Smog Check	H-5	*Not applicable.* The project would not prevent CARB from implementing this measure.
Stationary Equipment Refrigerant Management Program – Refrigerant Tracking/Reporting/Repair Program	H-6	*Not applicable.* The project would not prevent CARB from implementing this measure.
Stationary Equipment Refrigerant Management Program – Specifications for Commercial and Industrial Refrigeration	H-6	*Not applicable.* The project would not prevent CARB from implementing this measure.
SF_6 Leak Reduction Gas Insulated Switchgear	H-6	*Not applicable.* The project would not prevent CARB from implementing this measure.
40% Reduction in Methane and Hydrofluorocarbon Emissions	—	*Not applicable.* The project would not prevent CARB from implementing this measure.
50% Reduction in Black Carbon Emissions	—	*Not applicable.* The project would not prevent CARB from implementing this measure.
Agriculture Sector		
Methane Capture at Large Dairies	A-1	*Not applicable.* The project would not prevent CARB from implementing this measure.

Source: CARB 2008, 2017.
Notes: CARB = California Air Resources Board; GHG = greenhouse gas; VMT = vehicle miles traveled; N/A = not applicable; SB = Senate Bill; SF_6 = sulfur hexafluoride; GWP = global warming potential.

Based on the analysis in Table 14, the project would be consistent with the applicable strategies and measures in the Scoping Plan.

The project would not impede the attainment of the GHG reduction goals for 2030 or 2050 identified in Executive Order (EO) S-03-05 and SB 32. EO S-03-05 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. SB 32 establishes for 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, shall ensure that statewide GHG emissions are reduced to at least 40% below 1990 levels by December

31, 2030. While there are no established protocols or thresholds of significance for that future year analysis, CARB forecasts that compliance with the current Scoping Plan puts the state on a trajectory toward meeting these long-term GHG goals, although the specific path to compliance is unknown (CARB 2014).

To begin, CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update to the Climate Change Scoping Plan 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 AB 32" (CARB 2014). With regard to the 2050 target for reducing GHG emissions to 80% below 1990 levels, the First Update to the Climate Change Scoping Plan 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, SB 32, and EO S-03-05. This is confirmed in the Second Update, which states (CARB 2017) the following:

> 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, SB 32, and AB 197.

The project would not interfere with implementation of any of the previously described GHG reduction goals for 2030 or 2050 because the project would not exceed SCAQMD's recommended screening threshold of 1,400 MT CO2e per year (SCAQMD 2008). Because the project would not exceed the threshold, this analysis provides support for the conclusion that the project would not impede the state's trajectory toward the previously described statewide GHG reduction goals for 2030 or 2050.

As discussed previously, the project is consistent with the GHG emission reduction measures in the Scoping Plan and would not conflict with the state's trajectory toward future GHG reductions. In addition, since the specific path to compliance for the state in regard to the long-term goals will likely require development of technology or other changes that are not currently known or available, specific additional mitigation measures for the project would be speculative and cannot be identified at this time. The project's consistency would assist in meeting the City's contribution to GHG emission reduction targets in California. With respect to future GHG targets under SB 32 and EO S-03-05, CARB has also made clear its legal interpretation is that it has the requisite authority to adopt whatever regulations are necessary, beyond the AB 32 horizon year of 2020, to meet SB 32's 40% reduction target by 2030 and EO S-03-05's 80% reduction target by 2050; this legal interpretation by an expert agency provides evidence that future regulations will be adopted to continue the state on its trajectory toward meeting these future GHG targets.

Based on the considerations previously outlined, the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and no mitigation is required. Therefore, impacts associated with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs would be less than significant.

3.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
IX. **HAZARDS AND HAZARDOUS MATERIALS** – Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
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 or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

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 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 required to operate and maintain construction equipment. Handling of these potentially hazardous materials would be temporary and would coincide with the short-term construction phase of the 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 and 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 U.S. Environmental Protection Agency (EPA), the California Department of Toxic Substances Control, the California Occupational Safety and Health Administration, 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. The project involves construction of a four-story, 71-unit hotel. As such, potentially hazardous materials associated with operation of the 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 2019). 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 service sector 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 the Occupational Safety and Health Administration, all hazardous materials stored on the project site would be accompanied by a Materials Safety Data Sheet, which would inform on-site personnel and hotel guests of the necessary remediation procedures in the case of accidental release (OSHA 2012). 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 3.9(a), during construction of the 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 required to operate and maintain construction equipment. Handling of these potentially hazardous materials would be temporary and would coincide with the short-term construction phase of the 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 its 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 (LACFD 2019). 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. The project involves construction of a four-story, 71-unit hotel. As such, potentially hazardous materials associated with operation of the 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 2019). 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 service sector 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 2012). 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 project would not include any such uses or activities.

The project site is located approximately 0.1 miles west of Hawaiian Elementary School (12350 226th Street) and 0.27 miles southeast of Venn W. Furgeson Elementary School (22215 Elaine Avenue). The project site would be located within 0.25 miles of existing schools; however; once operational, the project would not emit hazardous emissions or handle hazardous or acutely hazardous materials. As discussed in Section 3.9(a), during construction of the 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 required to operate and maintain construction equipment. Handling of these potentially hazardous materials would be temporary and would coincide with the short-term construction phase of the project. Any handling, transport, use, or disposal of hazardous materials would comply with all relevant federal, state, and local agencies and regulations, including the UEPA, the California Department of Toxic Substances Control, the California OSHA, Caltrans, the Resource Conservation and Recovery Act, the SCAQMD, and the Los Angeles County Certified Unified Program Agency. 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?

Less-Than-Significant 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 6596.2 requires the California Environmental Protection Agency 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 (CalEPA 2019).

A review of Cortese List online data resources identified one site within the project boundary (SWRCB 2019; DTSC 2019). The site references a potential release of gasoline discovered during LUST cleanup in 1985; however, the case (#004042) was successfully closed in 1986 and no follow-up requirements or future development constraints have been placed on the project site (SWRCB 2019). Therefore, impacts associated with a hazardous materials site would be less than significant.

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

No Impact. The project site is located approximately 2.5 miles northwest of Joint Forces Training Base Los Alamitos (JFTB), and approximately 4 miles northeast of Long Beach Airport. According to the Los Angeles County Airport Land Use Commission, the project is not located within the airport land use plans for these nearby airports (ALUC 2019). The project site is located outside of any airport impact zones, and as such, the project would not result in a safety hazard for people residing in the project area. Therefore, no impacts associated with a safety hazard or excessive noise resulting from proximity to an airport would occur.

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

Less-Than-Significant Impact. As mentioned in the City General Plan, the project would be required to comply with the Hawaiian Gardens Emergency Operations Plan, adopted in March 2003. The plan provides a strategy for the City's planned response to emergency situations. Additionally, Exhibit 6-1 of the City's General Plan Safety Element shows emergency routes for the City (City of Hawaiian Gardens 2010). The project would be provided emergency routes along East Carson Street and Norwalk Boulevard. The project site is also provided regional access via I-605, I-405, and SR-91. 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 project would not adversely affect operations on the local or regional circulation system, and as such, would not influence the use of these facilities as emergency response routes. Therefore, impacts associated with an emergency response plan would be less than significant.

g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Less-Than-Significant Impact. According to California Department of Forestry and Fire Services' (CAL FIRE'S) High Hazard Severity Zone, the project site is not located in an area identified as being susceptible to wildland fire (CAL FIRE 2019). Furthermore, 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.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on or off site;	☐	☐	☒	☐

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;	☐	☐	☒	☐
iii) 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; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Surface Water Quality

Less-Than-Significant Impact. Construction of the 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 project site is larger than 1 acre and the project is therefore subject to the requirements of the NPDES Construction General Permit issued by the Los Angeles Regional Water Quality Control Board (RWQCB). The permit requires the implementation of stormwater controls and development of a Stormwater Pollution Prevention Plan (SWPPP) to minimize the amount of sediment and other pollutants from being discharged in stormwater runoff during construction, as well as various temporary BMPs designed to prevent erosion and siltation, as well as the off-site conveyance of various on-site constituents. Therefore, short-term construction impacts associated with water quality standards would be less than significant.

Once operational, the project site would be developed with a 71-unit hotel building, and paved parking spaces and drive aisles. Collectively, these on-site areas would reduce the potential for soils erosion and topsoil loss that could affect surface water quality. The structural and paved improvements would cover impervious areas lacking any exposed soils. The project would be subject to the requirements of the NPDES Municipal Separate Storm Sewer Systems (MS4) permit, which regulates municipal discharges of stormwater and non-stormwater. Additionally, pursuant to Municipal Code 13.20.040, the project includes a LID plan to comply with City efforts to retain stormwater runoff generating from new construction projects. The LID plan includes 5,493 square feet of stormwater planter boxes (within 12 planter boxes) that would incorporate biofiltration, which would help to mitigate potential impacts to water quality. Therefore, long-term impacts associated with water quality standards would be less than significant.

Groundwater Quality

Less-Than-Significant Impact. Similar to surface water quality, groundwater quality would be protected during project construction through BMPs required by the NPDES permit. BMPs would include spill prevention and cleanup guidelines, dewatering operations guidelines, and stormwater run-off prevention. These BMPs would protect the groundwater from contamination by construction activities.

During normal operations, the project would allow for groundwater infiltration and recharge through installation of permeable pavers and planter boxes. Ground water quality would be protected through implementation of the LID plan that has been developed for the project. As previously discussed, the LID plan includes 5,493 square feet of stormwater planter boxes that would incorporate biofiltration. Biofiltration would improve stormwater quality by effectively removing pollutants, preventing the opportunity for pollutant intrusion into the groundwater system. Therefore, impacts associated with groundwater quality would be less than significant.

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Groundwater Supplies

Less-Than-Significant Impact. The project involves the construction of a four-story, 71-unit hotel, which would increase demand for water supply on the project site. The City's water sources are a combination of groundwater pumped from Central Ground Basin and imported water from the Colorado River and the Bay Delta in Northern California. The project site would receive water service from the Golden State Water Company Region II Central District – Central Basin East Artesia System. According to the City's General Plan, the Central Basin East Artesia System receives 40% imported and purchased water, and 60% water pumped from ground wells (City of Hawaiian Gardens 2010). Additionally, Golden State Water Company (GSWC) has entitlement of groundwater resources in the Central Groundwater Basin. Furthermore, GSWC leases additional water rights from entities that no longer pump groundwater but have entitlements, in the attempt to meet the increase in water demand from its service area. As such, GSWC currently has no immediate concern with the availability of water supply to the City. Therefore, impacts associated with groundwater supplies would be less than significant.

Groundwater Recharge

Less-Than-Significant Impact. The project involves the construction of a 71-unit hotel with paved parking spaces and drive isles. As such, the project would introduce greater impervious area to the site. As described in the project's LID Plan, the project would use permeable pavers to enable infiltration of stormwater runoff, as well as stormwater planters that would utilize biofiltration. Additionally, under existing conditions, the project site is a vacant lot with disturbed land; therefore, the project site is not considered an important location for groundwater recharge. The project would not substantially impair groundwater recharge necessary to replenish the City's water supply; thus, impacts 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 or through the addition of impervious surfaces, in a manner which would:***

i) ***result in substantial erosion or siltation on or off site;***

Less-Than-Significant Impact. There are no streams or rivers located on or near the project site. Project construction would involve some earth-disturbing activities, including grading, that could expose on-site soils to erosion and surface water runoff. However, inclusion of project BMPs would reduce erosion and siltation from the project site occurring from construction activities. In addition, the project site is located within a developed area, with residential and commercial land uses surrounding the project site; as such, the development of the project would not cause a significant change to surface bodies of water in a manner that could cause siltation or erosion. Therefore, impacts associated with altering of the existing drainage patterns and erosion would be less than significant.

ii) ***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 3.10(b), the project would increase the amount of impervious surfaces on the project site. Pursuant to Municipal Code 13.20.040, the project has prepared a LID plan to comply with City efforts to retain stormwater runoff generating from new construction projects. As described in the project's LID plan, the project would install 12 stormwater planter boxes and introduce permeable pavers to reduce stormwater runoff. Additionally, the project would construct two deep catch basins on the northwest and southwest portions of the project site, and install one cast-iron pipe for stormwater overflow. Furthermore, the project would comply with existing local, state, and federal regulations related to drainage and runoff. As such, the project would not result in flooding on or off site. Therefore, impacts associated with altering the existing drainage pattern and flooding would be less than significant.

iii) ***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; or***

Less-Than-Significant Impact. As described in the project's LID plan, the project would install 12 stormwater planter boxes and introduce permeable pavers to reduce stormwater runoff. Additionally, the project would construct two deep catch basins on the northwest and southwest portions of the project site, and install one cast-iron pipe for stormwater overflow. Additionally, the project would comply with existing local, state, and federal regulations related to drainage and runoff. Furthermore, runoff from public streets would be collected into existing gutters along Brittain Street, Norwalk Boulevard, and 226th Street. As such, impacts associated with stormwater drainage system capacity would be less than significant.

iv) impede or redirect flood flows?

No Impact. The project site does not contain any streams or rivers having the potential to be altered by the project. The project site has been previously graded and is located within a highly urbanized area. According the City's General Plan, the City is located outside a Federal Management Agency 500-year floodplain, which indicates that the City has less than a 0.9% probability of flooding annually (City of Hawaiian Gardens 2010). Therefore, no impacts associated with impeding or redirecting flood flows would occur.

d) In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

Less-Than-Significant Impact. The project would not be susceptible to flood hazards, tsunami, or seiche. 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 National Flood Insurance Program identifies the City as a Zone B area, which means the City has a minimal flood risk. However, according to the City General Plan, portions of the City are prone to urban flooding (City of Hawaiian Gardens 2010). Urban flooding is caused by debris accumulation on storm drains and in flood control channels and basins, over-burdened pumping stations, and aged draining systems. As described in the project's LID plan, the project would install 12 stormwater planter boxes and introduce permeable pavers to reduce stormwater runoff. Additionally, the project would construct two deep catch basins on the northwest and southwest portions of the project site, and install one cast-iron pipe for stormwater overflow. Additionally, the project would comply with existing local, state, and federal regulations related to drainage and runoff. Furthermore, runoff from public streets would be collected into existing curb inlet catch basins and gutters along Brittain Street, Norwalk Boulevard, and 226th Street. As such, the project would not result in flooding on or off site. Thus, the project would not risk release of pollutants due to inundation. Therefore, no impacts associated with seiche, tsunami, or flooding would occur.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less-Than-Significant Impact. The project site is located within the jurisdiction of the Los Angeles Regional Water Quality Control Board Basin Plan (RWQCB 2014). As previously discussed, the project would be required to obtain an NPDES Construction General Permit that addresses pollution from construction activities. Further, construction activities would comply with applicable requirements of the Los Angeles Regional Water Quality Control Board, including compliance with Stormwater Pollution Prevent Plan-mandated BMPs. Compliance with regional and local regulations related to water quality control plans would reduce potential water quality impairment of surface waters. Therefore, the project would not conflict with a water quality control plan or sustainable groundwater management plan, and impacts would be less than significant.

3.11 Land Use and Planning

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XI. LAND USE AND PLANNING – Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

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 cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Less-Than-Significant Impact. The 1.25-acre project site is currently vacant and consists entirely of dirt and grasses. The project involves the construction of a four-story, 42,164-square-foot, 71-unit hotel. The General Plan land use designation for the project site is General Commercial, and the current zoning is C-4 (General Commercial) (City of Hawaiian Gardens 2010, 2011). The existing land use designations and zoning designations are shown on Figures 3 and 4, respectively. Pursuant to Section 18.60.050 of the City's Municipal Code, "hotels and motels" are conditionally permitted in the C-4 zone.

The analysis of land use consistency considers whether the project would cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulations that are applicable to the project. The following analysis focuses on goals and policies related to the City's General Plan Land Use Element, which are applicable to the project. Table 15 summarizes the project's consistency with the land use goals and policies.

Table 15. Consistency with Land Use Element Goals and Policies

Land Use Element Goal or Policy Number	Stated Land Use Element Goal or Policy	Holiday Inn Express Suites Project Applicable Component (s)	Consistency Finding
Provide opportunity for continued revitalization of a balanced community			
Policy LU-1.1	Accommodate new development in accordance with the Land Use Map.	The City of Hawaiian Gardens Land Use Map designates the project site as General Commercial (see Figure 3). Pursuant to Section 18.60.050 of the City's Municipal Code, "hotels and motels" are conditionally permitted in the C-4 zone. The project would apply for a CUP to allow for a hotel use on the site. The project would therefore comply with the General Plan land use designation and applicable zoning, upon approval of the CUP.	The proposed project would be consistent with this goal.
Provide commercial retail opportunities that serve residents and visitors			
Policy LU-4.2	Encourage development of vacant and underutilized commercial parcels.	The project involves the construction of a four-story, 42,164-square-foot, 71-unit hotel on a vacant, undeveloped 1.25-acre lot. The project site has a General Plan land use designation of General Commercial (see Figure 3). Pursuant to Section 18.60.050 of the City's Municipal Code, "hotels and motels" are conditionally permitted in the C-4 zone.	The proposed project would be consistent with this goal.
Policy LU-4.4	Encourage the development of high quality commercial projects.	The project involves the construction of a four-story, 42,164-square-foot, 71-unit hotel on a vacant, 1.25-acre lot. The project would provide accommodation for out of town visitors and provide an assortment of amenities including a meeting room, offices, a bar and lounge, fitness room, multipurpose room, business center, kitchen and breakfast area (see Figure 2).	The proposed project would be consistent with this goal.
Policy LU-4.5	Ensure that applicable land use regulations allow for commercial uses that serve a broad market area, including visitor-serving uses.	The project site satisfies the applicable General Plan land use designation and zoning (see Figure 3). The project involves construction of a hotel which would be a visitor-serving use that would provide accommodation for out of town visitors as well as provide residents with potential job opportunities.	The proposed project would be consistent with this goal.
Policy LU-4.6	Support redevelopment of underutilized and blighted commercial areas along Norwalk Boulevard.	The project would support redevelopment of an underutilized commercial area along Norwalk Boulevard. The project involves the	The proposed project is consistent with this goal.

Table 15. Consistency with Land Use Element Goals and Policies

Land Use Element Goal or Policy Number	Stated Land Use Element Goal or Policy	Holiday Inn Express Suites Project Applicable Component (s)	Consistency Finding
		construction of a four-story, 42,164-square-foot, 71-unit hotel on a vacant, undeveloped 1.25-acre lot. The project site is located at the southeast corner of Norwalk Boulevard and 226th Street. The project site has a General Plan land use designation of General Commercial (see Figure 3). Pursuant to Section 18.60.050 of the City's Municipal Code, "hotels and motels" are conditionally permitted in the C-4 zone.	

Source: City of Hawaiian Gardens 2010.

As shown on Table 15, the project would be consistent with the land use goals and policies identified by the City's General Plan Land Use Element. Therefore, impacts associated with land use plans, policies, and regulations would be less than significant.

3.12 Mineral Resources

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XII. 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. The State Mining and Reclamation Act of 1975 (California Public Resources Code Section 2710 et seq.) requires that the California State Geologist implement a mineral land classification system to identify and protect mineral resources of regional or statewide significance. According to maps obtained through the California Department of Conservation and California Geological Survey, the project site is within a Mineral Resource Zone 1 (MRZ-1) zone, which is defined as an area where adequate information indicates that no significant mineral deposits are present (DOC 1981). 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 mentioned, according to maps obtained through the California Department of Conservation and California Geological Survey, the project site is within a Mineral Resource Zone 1 (MRZ-1) zone, which is defined as an area where adequate information indicates that no significant mineral deposits are present (DOC 1981). 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.

3.13 Noise

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XIII. NOISE – Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
c) For a project located within the vicinity of a private airstrip or 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?	☐	☐	☐	☒

The following analysis is based on the Noise Assessment Technical Report prepared for the project and included as Appendix B.

Noise measurements with manual traffic counts were conducted on August 27, 2019, at noise-sensitive land uses adjacent to and in the vicinity of the project site. These measurements were intended to determine the existing noise levels in the project vicinity near noise-sensitive land uses, resulting from traffic or from other sources. The measurements were made using a calibrated Soft dB Piccolo integrating sound level meter. The sound level meter meets the current American National Standards Institute standard for a Type 2 (general use) sound level meter. The sound level meter was positioned at a height of approximately 5 feet above the ground.

The noise measurement locations are depicted as ST1 through ST5 (short-term) on Figure 3 of Appendix B. As shown in Table 16, the measured short-term average noise levels ranged from approximately 60 A-weighted decibels (dBA) equivalent sound level (L_{eq}) at ST2 and ST3 to 70 dBA L_{eq} at ST4 and ST5. The primary noise source was traffic on the local roadways. Appendix A of Appendix B contains the field data forms with complete sound level measurement results for the measurement locations.

Table 16. Measured Short-Term Sound Levels and Traffic Counts

Site	Description	Date/Time	L_{eq}[1]	L_{max}[2]	Cars	MT[3]	HT[4]	B[5]	MC[6]
ST1	8110 226th Street (Residential)	8/27/2019 9:27 a.m. to 9:42 a.m	62.7 dBA	84.5 dBA	21	1	0	1	0
ST2	12228 Brittain Street (Residential)	8/27/2019 9:48 a.m. to 10:03 a.m	59.7 dBA	76.1 dBA	6	0	0	0	0
ST3	12215 Brittain Street (Residential)	8/27/2019 10:07 a.m. to 10:22 a.m	60.2 dBA	72.3 dBA	6	0	0	0	0
ST4	22307 Norwalk Boulevard (Residential)	8/27/2019 10:38 a.m. to 10:53 a.m	70.3 dBA	84.1 dBA	201	2	0	2	0
ST5	8075 East Ring Street (Residential)	8/27/2019 11:20 a.m. to 11:35 a.m	70.4 dBA	80.3 dBA	194	3	0	1	0

Source: Appendix A of Appendix B.
Table Notes:
1 Equivalent continuous sound level (time-average sound level)
2 Maximum sound level
3 Medium trucks
4 Heavy trucks
5 Buses
6 Motorcycles

a) Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less-Than-Significant with Mitigation Incorporated. Temporary noise-generating activities associated with the project would include temporary on-site noise from construction activities and temporary off-site traffic noise along nearby roadways from trucks and worker vehicles during construction. Potential permanent noise-generating activities include traffic noise associated with project-related trips during operation, and operational noise from on-site mechanical equipment, parking lot noise, and recreational noise. Each of these is addressed below. As discussed in Appendix B, the City outlines its noise regulations and standards within the City of Hawaiian Gardens General Plan's Noise Element (City of Hawaiian Gardens 2010) and the Hawaiian Gardens Municipal Code (City of Hawaiian Gardens 2018).

Pursuant to Section 9.29.100(D) of the Hawaiian Gardens Municipal Code, construction noise is exempt from the City's noise ordinance standards, provided a permit has been obtained from the City, and provided construction activities take place between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday, with no construction on Sunday or federal holidays.

Section 9.29.050 of the Municipal Code designates C-4 zoned properties, such as the project site, as Noise Zone 3.Noise Zone 3 has an exterior noise level standard of 75 dB(A) at all times and an interior noise level standard of 45 dB(A) at all times pursuant to Sections 9.29.060 and 9.29.080 of the Municipal Code. Further details regarding prohibited exterior and interior noise levels in the City are included in Appendix B.

The General Plan's Noise Element includes a Land Use/Noise Compatibility Guidelines matrix (Table 6-4 of the Noise Element) based on land use, identifying noise level ranges that are "Normally Acceptable," "Conditionally Acceptable," "Normally Unacceptable," and "Clearly Unacceptable," depending on the land use type. For commercial uses such as the project, the matrix shows that noise exposure up to 70 dBA community noise equivalent level (CNEL) is "Normally Acceptable," and up to 80 dBA CNEL is "Conditionally Acceptable." For residential uses, including those surrounding the project area, noise exposure up to 60 dBA CNEL and 65 dBA CNEL (for single-family and high-density residential, respectively) is "Normally Acceptable," and up to 70 dBA CNEL (for both single-family and high-density residential) is "Conditionally Acceptable."

Construction Noise

Construction of the 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.

Phases of project construction include site preparation, grading, building construction, paving and architectural coating. The CARB CalEEMod was used to identify the construction equipment anticipated for development of the project. Based on this information, CalEEMod identified the anticipated equipment for each phase of project construction, listed in Table 17.

Table 17. Construction Equipment by Phase

Construction Phase	Equipment	Quantity
Site Preparation	Graders	1
	Rubber-tired dozers	1
	Tractors/loaders/backhoes	1
Grading	Graders	1
	Rubber-tired dozers	1
	Tractors/loaders/backhoes	1
Building Construction	Cranes	1
	Forklifts	1
	Generator sets	1
	Tractors/loaders/backhoes	1
	Welders	3
Paving	Cement and mortar mixers	1
	Pavers	1
	Paving equipment	1
	Rollers	1
	Tractors/loaders/backhoes	1
Architectural Coating	Air compressors	1

Source: Appendix A.

The Federal Highway Administration's Roadway Construction Noise Model (RCNM) (FHWA 2008) was used to estimate construction noise levels at the nearest noise-sensitive receptors, which include residential uses immediately to the east, as well as residences to the north and south, across from Brittain Street and 226th Street, respectively. The RCNM has default duty cycle values for the various pieces of equipment, which were utilized for this analysis. Please refer to Appendix B for the inputs used in the RCNM model and the detailed results.

The results of the construction noise analysis using the RCNM are summarized in Table 18. As shown, the highest noise levels from construction are predicted to range from approximately 68 dBA L_{eq} (during the architectural coating phase) to 86 dBA L_{eq} (during the site preparation and grading phases) at the nearest noise-sensitive receivers (single-family residences on the eastern side) when construction takes place at or adjacent to the eastern project boundary. More typically, when construction would take place throughout the project site, construction noise levels would range from approximately 62 dBA L_{eq} (during the architectural coating phase) to 79 dBA L_{eq} (during the site preparation phase) at the nearest noise-sensitive receivers.

These noise levels would be higher than ambient noise levels in the area (as shown in Table 16). Therefore, MM-NOI-1 has been proposed to reduce short-term construction noise impacts to below a level of significance. Among other things, implementation of MM-NOI-1 requires a temporary construction noise barrier shall be erected along the project site's entire eastern boundary, mandates that all construction equipment powered by internal combustion engines shall be properly muffled and maintained, and restricts construction to only the hours of 7:00 a.m. to 7:00 p.m., Monday through Saturday, excluding federal holidays.

Table 18. Construction Noise Analysis Summary

Construction Phase	Construction Noise at Representative Receiver Distances (L_{eq} (dBA))	
	Nearest Source/Receiver Distance (Approx. 15 feet)[1]	*Typical Source/Receiver Distance (Approx. 50 feet)*[2]
Site Preparation	86	79
Grading	86	77
Building Construction	71	69
Paving	81	75
Architectural Coating	68	62

Source: Appendix B.
Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); dBA = A-weighted decibel.
1 The exception is for the building construction phase, for which the nearest source/receiver distance is approximately 50 feet.
2 The exception is for the building construction phase, for which the typical source/receiver distance is approximately 100 feet.

MM-NOI-1. The following guidelines shall be implemented to reduce noise impacts to sensitive receivers during construction of the project:

- Noise-generating construction activities (which may include preparation for construction work) shall be not occur on weekdays and Saturdays between 7:00 p.m. and 7:00 a.m., and shall not occur on Sundays or on federal holidays.
- 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.

- Prior to the commencement of construction, a temporary construction noise barrier shall be erected along the project site's entire eastern boundary. The barrier shall be seven to eight feet in height, have a surface density of at least four pounds per square foot[3], and be free of openings, gaps and cracks (with the exception of expansion joints), including at the base of the barrier[4].
- 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.
- Stationary equipment shall be placed so as to maintain the greatest possible distance to the sensitive use structures.
- All equipment servicing shall be performed so as to maintain the greatest possible distance to the sensitive use structures.
- Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow surrounding property owners to contact the job superintendent if necessary. In the event the City receives a complaint, appropriate corrective actions shall be implemented and a report of the action provided to the reporting party.

The above mitigation measure would minimize noise levels from construction activities at residences in the immediate vicinity of the Project site. Given that construction is a temporary, short-term impact, and that the noise ordinance does not contain a specific noise limit for construction activities, this mitigation would reduce construction noise to less than significant.

Project-Generated Off-Site Traffic Noise

The proposed project would generate traffic along adjacent roadways, in particular Norwalk Boulevard. Potential noise effects from vehicular traffic were assessed using the Federal Highway Administration's Traffic Noise Model version 2.5 (FHWA 2004). Please see Appendix B for details regarding the model input and output files for the project. The City does not have a specific noise criterion for evaluating off-site noise impacts to residences or noise-sensitive areas from project-related traffic. For the purposes of this noise analysis, such impacts are considered significant when they cause an increase of 5 dB from existing noise levels or result in an exceedance of the 60 dBA CNEL (for single-family) or 65 dBA CNEL (for multifamily) noise threshold. An increase or decrease in noise level of at least 5 dB is required before any noticeable change in community response would be expected (Caltrans 2013a). Table 19 provides the traffic noise modeling results.

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3 Or alternatively have a certified Sound Transmission Class (STC) rating of 30 dB or greater.

4 Such a barrier may be constructed in the field from a "sandwich" of two ¾" thick (minimum) plywood sheets framed with 2 by 4s with fiberglass insulation in between, for example. Commercially-available temporary construction noise barriers (i.e., quilted "curtains" or matts) may be purchased or leased from a variety of sources, and hung or secured in place.

Table 19. Traffic Noise Modeling Results

Modeled Receptor	Existing (2019) Noise Level (dBA CNEL)	Existing (2019) with Project Noise Level (dBA CNEL)	Buildout (2021) without Project Noise Level (dBA CNEL)	Buildout (2021) with Project Noise Level (dBA CNEL)	Maximum Noise Level Increase (dB)
ST1	61	61	61	61	0
ST2	55	55	55	55	0
ST3	61	61	61	61	0
ST4	70	70	70	70	0
ST5	68	68	69	69	0

Source: Appendix C of Appendix B.

Table 19 shows that the maximum noise level increase would be 0 dB, when rounded to whole numbers. A change in noise level of less than 3 dB is not an audible change, in the context of community noise. Additionally, additional traffic from the project would not cause existing noise levels at nearby noise-sensitive receivers to exceed either the 60 dBA CNEL (for single-family residences) or the 65 dBA CNEL (for multifamily residences) noise standard. Based upon these results, traffic noise impacts would be less than significant, and no mitigation is required.

Operational Onsite Noise Generation

Project implementation would also result in changes to existing noise levels on the project site by developing new stationary sources of noise, including the introduction of outdoor HVAC equipment; pool and patio activities; and vehicle parking lot activities. These sources may affect off-site noise-sensitive land uses.

The proposed project would include 64 on-site parking stalls for hotel guests and staff. Noise sources from parking lots include car alarms, door slams, radios, and tire squeals. These sources typically range from about 30 dBA to 66 dBA at a distance of 100 feet[5] (Gordon Bricken & Associates 2010), and are generally short-term and intermittent. Parking lots have the potential to generate instantaneous noise levels that exceed 60 dBA depending on the location of the source; however, noise sources from the parking lot would be different from each other in kind, duration, and location, so that the overall effects would be separate and in most cases would not affect noise-sensitive receptors at the same time. Therefore, noise generated from parking lots would be less than significant, and no mitigation is required.

The proposed project has the potential to generate noise from HVAC equipment, as well as other mechanical equipment including pool pumps and (potentially) a trash compactor and emergency generator. The specific details (location, size, manufacturer, and model) of such equipment have not yet been determined. For a single point source such as a piece of mechanical equipment, the sound level normally decreases by approximately 6 dBA for each doubling of distance from the source under “hard-surface” conditions typical of a developed commercial site. Mechanical equipment noise levels could exceed the City’s noise standards (55 dBA L_{eq} daytime and 45 dBA L_{eq} nighttime) for stationary-source noise at the residential uses to the north, east and south of the project site. This is a potentially significant impact.

5 Note that the reference noise level range of 30 dBA to 66 dBA is at a distance of 100 feet from the noise source. Given that the proposed parking lot area would be located in closer proximity to the nearest noise receptors, noise levels could be occasionally higher than these referenced noise levels.

Implementation of mitigation measure MM-NOI-2 would reduce noise impacts from HVAC and other mechanical equipment to a less-than-significant level.

Proposed recreational facilities within the project site would include a pool and patio area, which would be located on the eastern side of the proposed hotel building. During daytime and evening hours, noise from most of these uses would not be disruptive, because ambient noise levels are higher during these hours, and typical activities in the daytime and evening are less prone to disruption by noise. Additionally, loud amplified music would not be permitted, and the noise exposure to the nearest residences (located to the east) would be reduced by the construction of a 6-foot-high boundary wall. However, at night, pool noise could be loud enough to disrupt sleep and other activities at adjacent on-site and neighboring off-site residences. This is a potentially significant impact. Implementation of mitigation measure MM NOI-3 would reduce noise impacts from recreational noise to a less-than-significant level.

MM-NOI-2 Because HVAC equipment and other mechanical equipment can generate noise that could affect surrounding sensitive receptors and because the details, specifications, and locations of this equipment is not yet known, the project applicant shall retain an acoustical specialist to review project construction-level plans to ensure that the equipment specifications and plans for HVAC and other outdoor mechanical equipment incorporate measures, such as the specification of quieter equipment or provision of acoustical enclosures, will comply with relevant noise standards at nearby noise-sensitive land uses (e.g., residential). Prior to the commencement of construction, the acoustical specialist shall certify in writing to the City that the equipment specifications and plans incorporate measures that will achieve the relevant noise limits.

MM-NOI-3 Prior to certificate of occupancy, signs shall be posted at the planned pool and patio areas prohibiting noisy activities between the hours of 10:00 p.m. and 7:00 a.m.

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

Less-Than-Significant with Mitigation Incorporated. The main concern associated with ground-borne vibration is annoyance; however, in extreme cases, vibration can cause damage to buildings, particularly those that are old or otherwise fragile. Some common sources of ground-borne vibration are trains, and construction activities such as blasting, pile-driving, and heavy earth-moving equipment. The primary source of potential ground-borne vibration as a result of the project would be construction activity.

Ground-borne vibration information related to construction activities has been collected by Caltrans (Caltrans 2013b). Information from Caltrans indicates that continuous vibrations with a peak particle velocity of approximately 0.1 inches per second begin to annoy people. The heavier pieces of construction equipment, such as bulldozers, would have peak particle velocities of approximately 0.089 inches per second or less at a distance of 25 feet (FTA 2018). Ground-borne vibration is typically attenuated over short distances. At the distance from the nearest vibration-sensitive receivers (residences located to the east) to where construction activity would be occurring on the project site (approximately 15 feet), and with the anticipated construction equipment, the peak particle velocity vibration level would be as high as approximately 0.192 inches per second. At the closest sensitive receptors, vibration levels would thus exceed the vibration threshold of potential annoyance of 0.1 inches/second; therefore, impacts associated with vibration-generated annoyance would be potentially significant. However, implementation of mitigation measure MM NOI-1 would ensure that residences are notified of construction activities and provided contact information in the event they wish to report a noise- or vibration-related complaint. Therefore, with the incorporation of mitigation, impacts associated with vibration-generation annoyance would be less than significant.

The major concern with regards to construction vibration is related to building damage, which typically occurs at vibration levels of 0.5 inches per second or greater for buildings of reinforced-concrete, steel, or timber construction. As discussed above, the highest anticipated vibration levels associated with on-site project construction would be approximately 0.192 inches per second, which are below the threshold of 0.5 inches per second for building damage. Therefore, impacts associated with vibration-produced damage would be less than significant.

c) For a project located within the vicinity of a private airstrip or 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 located approximately 2.5 miles northwest of Joint Forces Training Base Los Alamitos (JFTB), and approximately 4 miles northeast of Long Beach Airport. The project site is not located within the Airport Influence Areas of either of these airports, or within the vicinity of a private airstrip. Therefore, the project would not expose people residing or working in the project area to excessive noise levels from the airports and thus would result in no impact.

3.14 Population and Housing

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XIV. POPULATION AND HOUSING – Would the project:				
a) Induce substantial unplanned 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 people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

a) Would the project induce substantial unplanned 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 project involves the construction of a four-story, 42,164-square-foot, 71-unit hotel. No residential use or other land uses typically associated with directly inducing population growth are included as part of the project. Additionally, the number of employees hired to construct and operate the proposed hotel would be minimal. The project would employ a maximum of 24 construction workers during project construction and a maximum of 5 full-time employees per shift during operation (assuming three 8-hour shifts, this would result in 15 full-time employees). It is anticipated that construction workers would come from the local labor force, and given the temporary nature of the construction work, it is unlikely construction workers would relocate to the area as a result of the project. This analysis conservatively assumes that all 15 new permanent, full-time employees would relocate to the area.

SCAG is a metropolitan planning organization that represents the Counties of Ventura, Los Angeles, San Bernardino, Orange, Riverside, and Imperial. As part of the 2016-2040 RTP/SCS, SCAG has prepared population, household, and employee projections for the region. Table 20 shows the employee projections from 2012 to 2040 for the City of Hawaiian Gardens.

Table 20. Employment Growth for the City of Hawaiian Gardens

	2012	2040
Employment	4,800	5,600

Source: SCAG 2016

The proposed hotel would introduce five new employees to the City of Hawaiian Gardens. This increase is 0.8% of SCAG's overall projected growth of 1,800 employees for the City from 2012 to 2040. Therefore, employee growth as a result of the project is well within SCAG's overall growth projections for the City and would not result in a substantial increase in population. Furthermore, the project would generally connect to existing utilities and infrastructure located adjacent to the project site. The project would not construct new or extend existing utilities or infrastructure into areas not currently served by such improvements. Thus, the project would not directly or indirectly induce population growth, and impacts associated with population growth inducement would be less than significant.

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

No Impact. There is currently no housing on the project site. As such, the site does not support a residential population. The project would consequently not displace existing people nor housing, and would not necessitate the construction of replacement housing. Thus, no impact would occur.

3.15 Public Services

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XV. 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. Fire protection and emergency medical response services in the City are provided by the Los Angeles County Fire Department (LACFD). The LACFD provides service to over 58 cities and unincorporated areas throughout the County. The project site is served by Fire Station No. 34 (21207 South Norwalk Boulevard), located approximately 1 mile north of the site. The station is equipped with one fire truck and three personnel, including a fire captain, engineer, and firefighter (City of Hawaiian Gardens 2010).

The project site is already within the LACFD service area, and once operational, would continue to be served by LACFD. Additionally, as discussed in Section 3.14(a), Population and Housing, the project would not induce substantial population growth in the City. Although the project would potentially result in a slight increase in calls for service to the project site in comparison to the existing conditions, this increase is expected to be nominal and not to result in the need for new LACFD facilities. Overall, it is anticipated that the project would be adequately served by existing LACFD facilities, equipment, and personnel. Therefore, impacts associated with the construction or expansion of fire protection facilities would be less than significant.

Police protection?

Less-Than-Significant Impact. Police protection services in the City are provided by the Lakewood station of the Los Angeles County Sheriff's Department (LASD) (City of Hawaiian Gardens 2010). The LASD operates out of its local headquarters (5130 Clark Avenue), located roughly 5 miles northwest of the project site.

The project site is already within the LASD service area, and once operational, the project would continue to be served by LASD. As previously mentioned, the project would not induce substantial population growth in the City. Although the project would potentially result in a slight increase in calls for service to the project site in comparison to the existing conditions, this increase is expected to be nominal and not to result in the need for new LASD facilities. Overall, it is anticipated that the project would be adequately served by existing LASD facilities, equipment, and personnel. Therefore, impacts associated with the construction or expansion of LASD facilities would be less than significant.

Schools?

Less-than-Significant Impact. Preschool through high school education in the City is provided by the ABC Unified School District. As previously mentioned, the project would not induce substantial population growth in the City. The number of employees hired to construct and operate the proposed hotel would be minimal. As such, a significant increase in school-age children requiring public education is not expected to occur, and there would be no need for the development of additional schools. . Further, the project would be subject to the payment of City fees, a portion of which are allocated toward school facilities. Per Section 15.36.030 of the City's Municipal Code, each new development shall pay a growth requirements capital fee of four percent of the building valuation of that development. The fees are placed in the City's General Fund and may be used for any general government purpose (City of Hawaiian Gardens 2010). Payment of the fees would adequately mitigate any potential impacts to school facilities associated with the project and potential student generation. Therefore, the project would result in less-than-significant impacts associated with the construction or expansion of school facilities.

Parks?

Less-than-Significant Impact. As previously mentioned, the project would not induce substantial population growth in the City. The number of employees hired to construct and operate the proposed hotel would be minimal. As such, an increase in patronage at park facilities is not expected. In addition, the number of hotel guests visiting existing parks would be minimal. As part of the project site plan (see Figure 2), the project would include a pool and visitors staying at the hotel would be more inclined to use hotel facilities rather than community parks. Further, the City requires a growth requirements capital fee, in which each new development pays a fee of four percent of the building valuation of that development. The fees are placed in the City's General Fund and may be used for any general government purpose, which may include park and recreational facility development and rehabilitation if the City deems appropriate (City of Hawaiian Gardens 2010). Payment of the fees would adequately mitigate any potential impacts to park facilities. Thus, the project would result in less-than-significant impacts associated with the construction or expansion of park facilities.

Other public facilities?

Less-than-Significant Impact. As previously mentioned, the project would not induce substantial population growth in the City. The number of employees hired to construct and operate the proposed hotel would be minimal. As such, a substantial increase in patronage at libraries, community centers, and other public facilities is not expected. Therefore, the project would result in less-than-significant impacts associated with the construction or expansion of public facilities.

3.16 Recreation

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XVI. 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. As discussed in Section 3.14(a), Population and Housing, the project would not induce substantial population growth in the City. As such, the project would not increase the use of existing parks and recreational facilities such that substantial physical deterioration of recreational facilities would occur or be accelerated. Additionally, due to the anticipated limited number of construction personnel, short-term impacts to local recreational facilities would not occur. Therefore, substantial physical deterioration of these facilities would not occur or be accelerated with implementation of the project, and the project would result in less-than-significant impacts to recreational facilities.

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. As previously mentioned, the project would not induce substantial population growth in the City. Thus, the project would not increase the demand for recreational facilities. Additionally, the project would not promote or indirectly induce new development that would require the construction or expansion of recreational facilities. Further, as per Section 15.36.030 of the City's Municipal Code, each new development shall pay a growth requirements capital fee of four percent of the building valuation of that development. The fees are placed in the City's General Fund and may be used for any general government purpose, which may include park and recreational facility development and rehabilitation if the City deems appropriate (City of Hawaiian Gardens 2010). As such, the project would result in less-than-significant impacts related to the construction or expansion of recreational facilities.

3.17 Transportation

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XVII.TRANSPORTATION – Would the project:				
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☒	☐
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐

The following analysis is based on the October 2019 Traffic Impact Analysis prepared by Crown City Engineers Inc. and included as Appendix C.

*a) **Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?***

Less-Than-Significant Impact. For the purposes of the Traffic Impact Analysis (Appendix C), potential impacts to traffic and circulation were addressed for each of the following conditions:

- Existing (2019) Conditions
- Opening Year (2021) Pre-Project Conditions
- 2021 Cumulative Conditions with Project Traffic

Thresholds of Significance

Level of Service

Traffic operations of roadway facilities are described using the term Level of Service (LOS). LOS is a qualitative description of traffic flow based on several factors such as speed, travel time, delay, and freedom to maneuver. Six levels are typically defined ranging from LOS A, representing completely free-flow conditions, to LOS F, representing breakdown in flow resulting in stop-and-go conditions. LOS E represents operations at or near capacity, an unstable level where vehicles are operating with the minimum spacing for maintaining uniform flow.

City of Hawaiian Gardens Criteria

According to the City's General Plan, the City's target minimum LOS is LOS D, which should be maintained during the peak commute hours (City of Hawaiian Gardens 2010). Hence, any intersection operating at LOS E or F is considered deficient/unsatisfactory.

Intersections

Consistent with the City's traffic study guidelines, new development is required to mitigate traffic impacts exceeding these levels. Significant impacts are deemed to occur at any intersection in which the project causes the LOS to fall below LOS D or the peak hour delay to increase as follows:

- LOS A/B = By 10.0 seconds
- LOS C = By 8.0 seconds
- LOS D = By 5.0 seconds
- LOS E = By 2.0 seconds
- LOS F = By 1.0 second

Los Angeles County Congestion Management Program Criteria

In addition to the General Plan, the standards and requirements of the Los Angeles County Congestion Management Program (CMP) provide the basis for evaluating the potential for project traffic impacts within the City. The CMP is a state-mandated program enacted by the California Legislature with the passing of Proposition 111 in 1990. The program is intended to address the impact of local growth on the regional transportation system. The CMP impact criteria apply for analysis of both freeway and intersection monitoring locations. For the purposes of the CMP, a significant impact would occur if the proposed project were to increase traffic demand on a CMP facility by 2% of capacity causing LOS F; if the facility was already at LOS F, a significant impact would occur if the proposed project were to increase traffic demand on a CMP facility by 2% of capacity. I-605 is the only route in or near Hawaiian Gardens designated in the CMP. There are no intersections in Hawaiian Gardens designated as CMP monitoring intersections.

Study Area

Carson Street

Carson Street is a major east–west arterial street with two travel lanes in each direction plus turn lanes at major intersections. Directional travel is separated by raised median islands along the center. The street is approximately 82 feet wide and posted with a speed limit of 40 miles per hour. Most of the key intersections along Carson Street are signalized. Parking is permitted along the sides of the street. The average daily volume on Carson Street is approximately 23,350 vehicles per day. Carson Street provides full access ramps to the I-605 freeway from the north and south directions, approximately 1 mile to the west.

Norwalk Boulevard

Norwalk Boulevard is a major north–south arterial street with two travel lanes and a bike lane in each direction plus turn lanes at major intersections. Directional travel is separated by raised median islands as well as double-yellow painted stripes along the center. The street is approximately 72 feet wide and posted with a speed limit of 40 miles per hour. Most of the key intersections along Norwalk Boulevard are signalized. Parking is not permitted along the sides of the street. The average daily volume on Norwalk Boulevard is approximately 18,400 vehicles per day.

226th Street

226th Street is an east–west collector street with one travel lane in each direction. Directional travel is separated by yellow stripes along the center. The street is approximately 38 feet wide and posted with a speed limit of 25 miles per hour. The intersection of 226th Street and Norwalk Boulevard is signalized. Parking is permitted along the sides of the street. The average daily volume on 226th Street is approximately 1,600 vehicles per day.

Study Intersections

The study intersections provide both regional and local access to the study area and define the extent of the boundaries for this transportation impact analysis. The transportation analysis study area is generally comprised of those locations that have the greatest potential to experience significant traffic impacts due to the proposed project, as defined by the City as lead agency under the CEQA. In the traffic engineering practice, the study area generally includes those intersections that are:

- Immediately adjacent or in close proximity to the project site;
- In the vicinity of the project site that are documented to have current or projected future adverse operational issues; and
- In the vicinity of the project site that are forecast to experience a relatively greater percentage of project-related vehicular turning movements (e.g., at freeway ramp intersections).

The intersections selected for analysis were based on the previously outlined criteria, and the project's potential impacts based on estimated contribution of traffic from the project within a 2-mile radius of the site. Figure 3 of the Traffic Impact Analysis (Appendix C) shows the location of the study intersections. The study intersections include:

1. Norwalk Boulevard and 226th Street (Signalized)
2. Norwalk Boulevard and Brittain Street (Unsignalized)
3. Norwalk Boulevard and 223rd Street (Signalized)
4. Norwalk Boulevard and 221st Street (Signalized)
5. Norwalk Boulevard and Carson Street (Signalized)

Existing Traffic Volumes

Manual turning movement counts for the selected intersections were collected in the field for the morning and evening peak periods during May 2019. The intersections were counted during the peak hours of 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. on a typical weekday (Tuesday, Wednesday, or Thursday) (see Appendix H of Appendix C). Existing 2019 AM and PM peak hour trips for the study intersections include:

- Norwalk Boulevard and 226th Street: 1,165 during AM peak hour and 1,634 during PM peak hour
- Norwalk Boulevard and Brittain Street: 1,157 during AM peak hour and 1,262 during PM peak hour
- Norwalk Boulevard and 223rd Street: 1,318 during AM peak hour and 1,807 during PM peak hour
- Norwalk Boulevard and 221st Street: 1,514 during AM peak hour and 1,950 during PM peak hour
- Norwalk Boulevard and Carson Street: 3,408 AM peak hour and 4,037 during PM peak hour

Cumulative Project Traffic Volumes

The City has identified one cumulative development project within the project area. Cumulative development projects, as defined by CEQA Guidelines Section 15355, are "closely related past, present and reasonably foreseeable probable future projects." The Traffic Impact Analysis (Appendix C) assumes that these cumulative development projects will be developed and operational when the proposed project is operational.

Project Traffic Characteristics

In order to evaluate future traffic conditions with the proposed project, trip generation estimates were developed for the project. Trip generation rates for the project are based on the nationally recognized recommendations contained in the Trip Generation Manual, 10th edition, published by the Institute of Transportation Engineers (ITE 2017). Table 21 shows a summary of trip generation estimates for the project. The ITE Land Use Code used to determine the trip generation rates is 310 Hotel. It is estimated that the project will generate approximately 594 net trips per average day (297 inbound and 297 outbound). The average weekday net new peak hour trips will be approximately 34 trips during the AM peak hour (20 inbound and 14 outbound), and 43 trips during the PM peak hour (22 inbound and 21 outbound) (see Appendix C).

Table 21. Hotel – Trip Generation Summary

ITE Code/ Land Use	Size & Unit	Trip Generation Rate							Average Traffic Volume						
		Daily Total	AM Peak Hour			PM Peak Hour			Daily Total	AM Peak Hour			PM Peak Hour		
			Total	*%IN*	*%OUT*	*Total*	*%IN*	*%OUT*		*IN*	*OUT*	*Total*	*IN*	*OUT*	*Total*
Total Vehicle Trip Generation															
310 Hotel	71 Rooms	8.36	0.47	59%	41%	0.60	51%	49%	594	20	14	34	22	21	43

Source: ITE 2017.
Notes: ITE = Institute of Transportation Engineers.

Project Trip Distribution and Assignment

Of the total project traffic, 40% is assigned to/from the northwest and 20% to/from the northeast via East Carson Street; 10% is assigned to/from the north and 25% to/from the south via Norwalk Boulevard; 5% is assigned to/from the east via 226th Street. Of the total trips, 100% are assumed to use two access driveways to enter the project site: one off Norwalk Boulevard (right-turn-in and right-turn out only) and the other off 226th Street.

Intersection Capacity Analysis

Existing Conditions (2019)

Existing traffic conditions (2019) were evaluated using the 2010 Highway Capacity Manual operational delay method of LOS analysis for signalized intersections (See Appendix H). Table 22 presents existing condition intersection LOS analysis. Under existing conditions, all study intersections are operating at an acceptable LOS.

Table 22. Existing 2019 LOS at Study Area Intersections

Intersection	Peak Hour	Existing 2019 Conditions	
		LOS	*Average Delay, Sec/Veh*
Norwalk Boulevard and 226th Street (Signalized)	AM PM	A A	7.7 4.2
Norwalk Boulevard and Brittain Street (Unsignalized)*	AM PM	B C	16.2 24.8
Norwalk Boulevard and 223rd Street (Signalized)	AM PM	A A	6.2 6.0
Norwalk Boulevard and 221st Street (Signalized)	AM PM	A A	8.4 7.3
Norwalk Boulevard and Carson Street (Signalized)	AM PM	C C	29.0 33.3

Notes: LOS = level of service; sec/veh = seconds per vehicle.
* Delay for the worst movement.

Opening Year (2021) Pre-Project Conditions

A 1.0% per annual traffic growth rate was applied to existing traffic volumes to create a 2021 pre-project condition. This annual traffic growth rate accounts for the population growth within the study area and traffic from any other minor projects to be developed in the study area. Per City records and consultation with the neighboring City of Long Beach, there is only one other related project located within 2-mile radius of the project (within the jurisdiction of the City of Long Beach) that will contribute to cumulative traffic volumes with the development of this project. This 40-unit residential project is located on the west side of Norwalk Boulevard south of 226th Street.

Trip generation estimates for this related project was developed using nationally recognized and recommended rates contained in the Trip Generation Manual (See Appendix H of Appendix C). Table 23 shows a summary of trip generation estimates for the related project.

Table 23. Trip Generation by Related Projects

Land Use (ITE Code)	Size & Unit	Trip Generation Rate							Average Traffic Volume						
			AM Peak Hour			*PM Peak Hour*				*AM Peak Hour*			*PM Peak Hour*		
		Daily Total	*Total*	*% IN*	*% OUT*	*Total*	*% IN*	*% OUT*	*Daily Total*	*IN*	*OUT*	*Total*	*IN*	*OUT*	*Total*
Related Project 1: 3655 N. Norwalk Bl, Long Beach, CA – 40-DU Detached Single-family Residential Homes															
Single-Family (210)	40 DU	9.44	0.74	25%	75%	0.99	63%	37%	378	7	22	29	25	15	40

Source: ITE 2017.
Note: All rates are average rates.

As shown in Table 23, it is estimated that the related project will generate approximately 378 trips per average day (189 inbound and 189 outbound). The average weekday net new peak hour trips will be approximately 29 trips during the AM peak hour (7 inbound and 22 outbound), and 40 trips during the PM peak hour (25 inbound and 15 outbound) (see Appendix H of Appendix C).

The projected peak hour traffic volumes from this related project were added to existing traffic volumes with ambient growth at the study intersections to represent a 2021 pre-project traffic condition for the AM and PM peak hours. Table 24 presents the LOS and delays for the study intersection under 2021 pre-project conditions (without project).

Table 24. 2021 Pre-project Future Conditions Level of Service Summary

Intersection	Peak Hour	2021 Pre-Project Conditions	
		LOS	*Average Delay, Sec/Veh*
Norwalk Boulevard and 226th Street (Signalized)	AM PM	A A	7.7 4.7
Norwalk Boulevard and Brittain Street (Unsignalized)*	AM PM	C D	16.8 26.5
Norwalk Boulevard and 223rd Street (Signalized)	AM PM	A A	6.2 6.0
Norwalk Boulevard and 221st Street (Signalized)	AM PM	A A	8.5 7.8
Norwalk Boulevard and Carson Street (Signalized)	AM PM	C D	31.0 35.9

Notes: LOS = level of service; sec/veh = seconds per vehicle.
* Delay for the worst movement.

As indicated in Table 24, all five study intersections will continue to operate at an acceptable LOS (i.e., LOS D or better) during the AM and PM peak hours under 2021 pre-project traffic conditions.

2021 Cumulative Conditions with Project Traffic

The 2021 cumulative post-project traffic volumes were estimated by adding project-related traffic volumes to the 2021 pre-project traffic volumes with 1.0% per year ambient growth and related project traffic.

Year 2021 post-project cumulative (i.e., existing plus ambient traffic plus related project plus project traffic) conditions were evaluated using the 2010 Highway Capacity Manual operational delay method of LOS analysis for signalized intersections (see Appendix H of Appendix C). The LOS and delay for the study intersections under 2021 post-project cumulative conditions (with project) are summarized in Table 25.

Table 25. Future 2021 Level of Service Summary with Project

Intersection	Peak Hour	2021 Pre-Project Conditions	
		LOS	*Average Delay, Sec/Veh*
Norwalk Boulevard and 226th Street (Signalized)	AM PM	A A	7.9 5.5

Table 25. Future 2021 Level of Service Summary with Project

Intersection	Peak Hour	2021 Pre-Project Conditions	
		LOS	*Average Delay, Sec/Veh*
Norwalk Boulevard and Brittain Street (Unsignalized)*	AM PM	C D	17.3 27.4
Norwalk Boulevard and 223rd Street (Signalized)	AM PM	A A	6.2 6.0
Norwalk Boulevard and 221st Street (Signalized)	AM PM	A A	8.6 8.1
Norwalk Boulevard and Carson Street (Signalized)	AM PM	C D	31.1 36.8

Notes: LOS = level of service; sec/veh = seconds per vehicle.
* Delay for the worst movement

The results indicate that all five study intersections will continue to operate at an acceptable LOS of D or better (i.e., within the range of acceptable thresholds of LOS A through D) during the AM and PM peak hours under future cumulative traffic conditions with the project.

Project Impact and Mitigation Measures

As indicated in the previous section, all five study intersections will continue to operate at an acceptable LOS of D or better (i.e., within the range of acceptable thresholds of LOS A through D) during the AM and PM peak hours under future cumulative traffic conditions with the project. The project's traffic contribution in terms of volume-to-capacity ratio will be deemed insignificant.

The project's off-site traffic impact would not be considered significant at any of these intersections based on delay and LOS after the project. A project's impact on the circulation system is determined by comparing LOS and delays at key intersections under the future pre-project conditions and future post-project conditions. As previously discussed, an LOS worse than D (i.e., LOS E or F) is considered deficient and unacceptable. A project's traffic impact is determined to be significant if the LOS is deteriorated below D due to the project, or if the increase in delay is 10 seconds or more at LOS A and B, 8 seconds or more at LOS C, or 5 seconds or more at LOS D, or 2 seconds or more at LOS E, or 1 second or more at F. The LOS and delay for the study intersections under 2021 cumulative conditions (with project as well as without project) are summarized in Table 26 to compare the proposed project's traffic impact at key intersections.

Table 26. Future 2021 Level of Service Summary with and Without Project

Intersection	Peak Hour	Future 2021 Conditions				Increase in Delay by Project, Sec/Veh
		Without Project		*With Project*		
		LOS	*Average Delay, Sec/Veh*	*LOS*	*Average Delay, Sec/Veh*	
Norwalk Boulevard and 226th Street (Signalized)	AM PM	A A	7.7 4.7	A A	7.9 5.5	0.2 0.8

Table 26. Future 2021 Level of Service Summary with and Without Project

Intersection	Peak Hour	Future 2021 Conditions				Increase in Delay by Project, Sec/Veh
		Without Project		*With Project*		
		LOS	*Average Delay, Sec/Veh*	*LOS*	*Average Delay, Sec/Veh*	
Norwalk Boulevard and Brittain Street (Unsignalized)*	AM PM	C D	16.8 26.5	C D	17.3 27.4	0.5 0.9
Norwalk Boulevard and 223rd Street (Signalized)	AM PM	A A	6.2 6.0	A A	6.2 6.0	0.0 0.0
Norwalk Boulevard and 221st Street (Signalized)	AM PM	A A	8.5 7.8	A A	8.6 8.1	0.1 0.3
Norwalk Boulevard and Carson Street (Signalized)	AM PM	C D	31.0 35.9	C D	31.1 36.8	0.1 0.9

Notes: LOS = level of service; sec/veh = seconds per vehicle.
* Delay for the worst movement.

As the results indicate, the increase in delay by project traffic would not exceed the significance thresholds of project-related impacts. Based on the results of the traffic impact analysis, the proposed Holiday Inn Express Suites project would not significantly impact any of the five key intersections analyzed in the surrounding roadway system. The addition of project traffic will not increase delay at any intersection beyond the significance thresholds of project-related impacts. Therefore, no off-site mitigation measures would be necessary at any intersection for the development of this project. All the study intersections will continue to perform at acceptable levels of service (i.e., at LOS D or better) during the AM and PM peak hours. Thus, impacts associated with a program, plan, ordinance, or policy addressing the circulation system would be less than significant.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

No Impact. CEQA Guidelines Section 15064.3(b) focuses on newly adopted criteria for determining the significance of transportation impacts by projecting the number of vehicle miles traveled (VMT) generated by the project. Lead Agencies have the discretion to formulate a methodology that would appropriately analyze a project's VMT. Although an agency may elect to be governed by the provisions of this section immediately, it is not required until July 1, 2020. The County of Los Angeles and City of Hawaiian Gardens have not yet adopted local VMT criteria, therefore a VMT analysis for the project is not applicable and has not been prepared at this time.

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

Less-Than-Significant Impact. The proposed project consists of constructing a hotel on a vacant site. Vehicular access to the site would be provided by two access driveways to surface parking area—one on Norwalk Boulevard (right-turn-in and right-turn out only) and the other on 226th Street (see Appendix H of

Appendix C). In addition, from the back of the hotel, two gated emergency access-driveways will be provided—one on 226th street and the other on Brittain Street. The project's primary driveway on Norwalk Boulevard will have a maximum of 20 vehicle entering and 15 vehicles exiting during the peak hours. This low-turn volume at the driveways is not expected to cause any queuing at the driveways. The southbound left-turn pocket at the intersection of Norwalk Boulevard and 226th Street is expected to have a maximum queue length of 76 feet during the PM peak hour. However, the length of the pocket is approximately 110 feet; therefore, impact to the left- or U-turning vehicles from this left-turn lane will not be significant, and through traffic on the adjacent lane will not be blocked. The proposed project would not generate incompatible uses with the surrounding commercial and residential area. The access point has been designed consistently with the City's circulation standards and does not create a hazard for vehicles, bicycles, or pedestrians entering or exiting the site.

d) ***Would the project result in inadequate emergency access?***

Less-Than-Significant Impact. As previously discussed, vehicular access to the site would be provided by two access driveways to surface parking area—one off Norwalk Boulevard (right-turn-in and right-turn out only) and the other off 226th Street. In addition, from the back of the hotel, two gated emergency access-driveways will be provided—one on 226th street and the other on Brittain Street. The site is located in an established, developed area with ample access for emergency service providers. Thus, there is sufficient room for vans, trucks, and emergency vehicles to access the site and maneuver around the site. For these reasons, the project would have a less-than-significant impact related to emergency access.

3.18 Tribal Cultural Resources

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XVIII. TRIBAL CULTURAL RESOURCES				
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☒	☐

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of 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:***

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

Less-Than-Significant Impact. A significant impact may occur if a project were to cause a substantial adverse change in the significance of a Tribal cultural resource listed or eligible for listing in the California Register of Historical Resources (CRHR), or in a local register of historical resources as defined in California Public Resources Code Section 5020.1(k).

There is currently no structure located on the vacant parcel associated with 22434 Norwalk Boulevard. Despite the parcel being vacant, the project site is located in a highly urbanized and developed part of the City. The project site has been graded previously and contains disturbed soil. As such, the project site would not be eligible for listing in the National Register of Historic Places or CRHR, and thus, would not be considered a historical resource as defined by CEQA.

b) ***A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of 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. As part of the government-to-government consultation efforts prescribed under AB 52, the City notified all Native American tribes on the City's AB 52 list of the project, inviting the tribes to consult on the project. To date, the City has received one response to the notification letters from the Gabrieleno Band of Mission Indians-Kizh Nation requesting consultation.

The City is committed to preserving the integrity of Tribal cultural resources, and given that it is always possible that intact archaeological deposits are present at subsurface depths that were not impacted by previous grading activities, the project site should be treated as potentially sensitive for archaeological resources. For this reason, and based on recommendations typically provided by the Gabrieleno Band of Mission Indians-Kizh Nation, MM CUL-1 and MM-CUL-2 are recommended to reduce potential impacts to unanticipated archaeological resources and Tribal cultural resources. In addition, additional provisions also are required in MM-CUL-3 to ensure that impacts related to human remains are minimized to the greatest extent feasible. With the incorporation of MM-CUL1 through MM-CUL-3, impacts associated with any potential buried, currently unrecorded/unknown Tribal cultural resources and human remains would be less than significant.

3.19 Utilities and Service Systems

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS – Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☒	☐
c) 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?	☐	☐	☒	☐
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

a) ***Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?***

Less-Than-Significant Impact. As mentioned in Section 3.10(c)(ii), the project would result in the construction of new stormwater drainages to reduce surface runoff generated from the project site. However, the project would not require or result in the relocation or construction of new or expanded water, wastewater treatment, electric power, natural gas, or telecommunication facilities for the reasons discussed below.

Water Facilities

The project involves the construction of a 71-unit hotel, which would increase demand for water supply on the project site. As mentioned in Section 3.14(a), Population and Housing, no residential use or other land uses typically associated with directly inducing population growth are included as part of the project. Furthermore, as will be discussed in 3.19(b), the project would have sufficient water supplies during normal, dry, and multiple dry years. Therefore, the project's nominal contribution to the total water demand could be served by existing water facilities serving the project area without requiring new or expanded facilities. Thus, impacts associated with the construction or expansion of water facilities would be less than significant.

Wastewater Treatment Facilities

Wastewater generated at the project site would be treated at the Long Beach Water Reclamation Plant (LBWRP), which is owned and operated by Sanitation Districts of Los Angeles County. LBWRP provides primary, secondary, and tertiary treatment for an estimated 25 million gallons per day (Los Angeles County Sanitation Districts (LACSD) 2019). Wastewater generated by the project would represent only a nominal percentage of the LBWRP average dry-weather flow capacity and average wastewater flow. Thus, the project would not require or result in the relocation or construction of new wastewater treatment facilities. Impacts would be less than significant impacts.

Stormwater Drainage Facilities

As discussed in Section 3.10(c)(ii), the project would construct two deep catch basins on the northwest and southwest portions of the project site, and install one cast-iron pipe for stormwater overflow. Furthermore, because the project site is located on level or gently sloping topography and is surrounded by urban land uses, the project is not anticipated to substantially modify existing topography or runoff patterns. Therefore, impacts associated with stormwater drainage facilities would be less than significant.

Electric Power Facilities

Electrical energy is accessed by transmission and distribution lines from substations owned by SCE. At full buildout, the project's operational phase would require electricity for building operation (appliances, lighting, etc.). In addition, the project would be required to comply with the 2016 Title 24 standards or the most recent standards at the time of building permit issuance. The energy-using fixtures within the project would likely be newer technologies, using less electrical power. Therefore, impacts associated with electrical power facilities would be less than significant.

Natural Gas Facilities

Natural gas is provided to the City by Southern California Gas Company, Pacific Region. As mentioned in the General Plan, natural gas is imported by the Southern California Gas Company from its interstate system. (City of Hawaiian Gardens 2010). Although the project would require natural gas for building heating, the project would comply with 2016 Title 24 building energy efficiency standards, reducing energy used in the state. Based on compliance with Title 24, the project would generate a need for natural gas that is consistent with hotels. Therefore, impacts associated with natural gas facilities would be less than significant.

Telecommunications Facilities

The City of Hawaiian Gardens is served by multiple telephone service providers. Since the project site is in an urbanized area and is surrounded by single-family residential uses, there are existing telecommunication facilities that would be able to serve the project site. Once the project is completed, future visitors would be able to connect to existing telecommunication services without the need for expansion or construction of new facilities. Therefore, impacts associated with telecommunications facilities would be less than significant.

b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

Less-Than-Significant Impact. The City's water sources are a combination of groundwater pumped from Central Ground Basin and imported water from the Colorado River and the Bay Delta in Northern California. The project site would receive water service from the GSWC Region II Central District – Central Basin East Artesia System. According to the City's General Plan, the Central Basin East Artesia System receives 40% imported and purchased water, and 60% water pumped from ground wells (City of Hawaiian Gardens 2010). Additionally, GSWC has entitlement of groundwater resources in the Central Groundwater Basin. Furthermore, GSWC leases additional water rights from entities that no longer pump groundwater but have entitlements, in the attempt to meet the increase in water demand from its service area. As such, GSWC currently has no immediate concern with the availability of water supply to the City.

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 water supply service, every urban water supplier is required to assess its water service under normal, dry, and multiple-dry years. Table 27 provides water demand and supplies for dry- and multiple-dry-year scenarios for the GSWC Artesia System.

Table 27. Multiple-Dry Years Supply and Demand Comparison

Dry Year Scenario		2020	2025	2030	2035	2040 (Optimized)
First year	Supply totals	6,351	6,415	6,480	6,545	6,610
	Demand totals	6,351	6,415	6,480	6,545	6,610
	Difference	0	0	0	0	0
Second year	Supply totals	6,351	6,415	6,480	6,545	6,610
	Demand totals	6,351	6,415	6,480	6,545	6,610
	Difference	0	0	0	0	0

Table 27. Multiple-Dry Years Supply and Demand Comparison

Dry Year Scenario		2020	2025	2030	2035	2040 (Optimized)
Third year	Supply totals	6,351	6,415	6,480	6,545	6,610
	Demand totals	6,351	6,415	6,480	6,545	6,610
	Difference	0	0	0	0	0

Source: GSWC 2016.

According to the 2015 Urban Water Management Plan, GSWC coordinates on an ongoing basis with other agencies, cities, and counties in the region to optimize business operations and planning efforts (GSWC 2016). The Urban Water Management Plan outlines the Water Shortage Contingency Plan for the Artesia System in the event of a drought or a catastrophic supply interruption. In addition, GSWC has its own conservation programs and demand management measures to reduce demand on water sources.

It is assumed that the multiple dry-year water supplies are the same as those for normal years because Metropolitan Water District of Southern California (through the Central Basin Municipal Water District) intends to meet projected imported demands under all anticipated hydrologic conditions. Because the City's water demands can be met under multiple-dry years, and because supply would meet projected demand due to diversified supply and conservation measures, the project's water demands would be served by the City's projected current and future supplies. Therefore, the project would have sufficient water supplies available during normal, dry, and multiple-dry years. Thus, impacts would be less than significant.

c) ***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. A significant impact would occur if the wastewater treatment provider indicates that a project would increase wastewater generation to such a degree that the capacity of the facilities currently serving the project site would be exceeded. As mentioned in Section 3.19(a), wastewater generated at the project site would be treated at the Long Beach Water Reclamation Plant (LBWRP). The LBWRP provides primary, secondary, and tertiary treatment for an estimated 25 million gallons per day (LACSD 2019). Wastewater generated by the project would represent only a nominal percentage of the LBWRP average dry-weather flow capacity and average wastewater flow. Therefore, impacts associated with wastewater treatment capacity would be less than significant.

d) ***Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?***

Less-Than-Significant Impact. A significant impact may occur if a project were to increase solid waste generation to such a degree that existing and projected landfill capacities would be insufficient to accommodate the additional solid waste.

According to the City General Plan, solid waste generated by commercial uses are collected by Consolidated Disposal Services. Additionally, Consolidated Disposal Services provides collection services for residential and industrial uses in the City. The City produces an estimated 15,713 tons of waste annually. Commercial uses make up the majority of waste generated by producing approximately 6,404 tons of waste and 2,823 tons of recyclable materials annually. Solid waste collected by Consolidated Disposal Services is transported to the Bel Art Transfer Station in Long Beach, with final disposal at Chiquita Canyon Disposal Facility. The 639-acre facility has a permitted capacity of 12,000 tons per day, and approximately 60.408 million cubic yards remain (CalRecycle 2019).

The project involves the construction of a four-story, 42,164-square-foot, 71-unit hotel. Once operational, the project would result in waste typically associated with service sector uses. According to the California Department of Resources Recycling and Recovery, hotels generate approximately 2 pounds per unit per day (CalRecycle 2019). Thus, it is anticipated the project would generate approximately 142 pounds of solid waste per day, or 25.9 tons per year. This number is nominal compared to the 12,000 daily disposal tonnage at Chiquita Canyon Disposal Facility. In addition, this amount does not factor in any recycling or waste diversion programs. Solid waste generated by the project would not generate waste in excess of state or local standards. Therefore, impacts associated with landfill capacity would be less than significant.

e) ***Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?***

Less-Than-Significant Impact. All collection, transportation, and disposal of solid waste generated by the project would comply with all applicable federal, state, and local statutes and regulations. In particular, AB 939, the Integrated Waste Management Act of 1989, requires that at least 50% of solid waste generated by a jurisdiction be diverted from landfill disposal through source reduction, recycling, or composting. Regional agencies, counties, and cities are required to develop a waste management plan that would achieve a 50% diversion from landfills (California Public Resources Code, Section 40000 et seq.). Furthermore, as mentioned in 3.19(d), solid waste generated by the project would not generate waste in excess of state or local standards. Therefore, impacts associated with solid waste disposal regulations would be less than significant.

3.20 Wildfire

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XX. WILDFIRE – If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

CAL FIRE) is responsible for designating fire hazard severity zones (FHSZs) within the State Responsibility Area throughout California. FHSZs are geographical areas with an elevated risk for wildfire hazard. The State Responsibility Area is the area for which the state assumes financial responsibility for fire suppression and protection. CAL FIRE also creates recommended maps for very high FHSZs within the Local Responsibility Areas, which are then adopted, or modified and adopted, by local jurisdictions. Development within a State Responsibility Area is required to abide by specific development and design standards. A review of CAL FIRE's FHSZ maps and data revealed that the project site is not located within a State Responsibility Area or a very high FHSZ (CAL FIRE 2019).

a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

Less-Than-Significant Impact. As described in Section 3.9(f), Hazards and Hazardous Materials, the project would be required to comply with the Hawaiian Gardens Emergency Operations Plan, adopted in March 2003. The plan provides a strategy for the City's planned response to emergency situations. Additionally, Exhibit 6-1 of the City's General Plan Safety Element shows emergency routes for the City (City of Hawaiian Gardens 2010). The project would be provided emergency routes along East Carson Street and Norwalk Boulevard. The project site is also provided regional access via I-605, I-405, and SR-91. 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 project would not adversely affect operations on the local or regional circulation system, and as such, would not influence the use of these facilities as emergency response routes. Therefore, impacts associated with an emergency response plan would be less than significant.

b) ***Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?***

Less-Than-Significant Impact. The project involves the construction of a four-story, 71-unit hotel on a vacant lot. The project site is surrounded by roadways and developed properties in a highly urbanized area; therefore, it is not susceptible to exacerbating wildfire risks. Furthermore, the project site does not contain extensive amounts of vegetation or wildland fuel. Thus, it is not anticipated that the project, due to slope, prevailing winds, and other factors, would exacerbate wildfire risks or expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

c) ***Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?***

Less-Than-Significant Impact. The project involves the construction of a four-story, 71-unit hotel on a vacant lot. Given the project site is located adjacent to residential land uses, the project site contains existing sanitary sewer connections. Furthermore, as previously mentioned in Section 3.10, Hydrology and Water Quality, runoff from public streets would be collected into existing curb inlet catch basins and gutters along Brittain Street, Norwalk Boulevard, and 226th Street. Additionally, the project would not involve the construction of roads, fuel breaks, emergency water sources, power lines, or other utilities. It is not anticipated that the project would exacerbate fire risk, since pavement would serve as a fuel break, and the project site is surrounded by developed land on all sides. Therefore, impacts associated with installation or maintenance of associated infrastructure resulting in exacerbated fire risk would be less than significant.

d) ***Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?***

Less-Than-Significant Impact. The project would comply with the site plan review and permitting requirements of the City. As mentioned in Section 3.7(a)(iv), Geology and Soils, the City does not have any known landslide zones. Additionally, the project site is relatively flat and is not adjacent to any potentially unstable topographical features. Because the project site is located on level or gently sloping topography and is surrounded by urban land uses, the project is not anticipated to substantially modify existing topography or runoff patterns. Furthermore, as previously mentioned in 3.20(c), runoff from public streets would be collected into existing curb inlet catch basins and gutters along Brittain Street, Norwalk Boulevard, and 226th Street. As such, the project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Therefore, impacts would be less than significant.

3.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less-Than-Significant Impact With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XXI. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to substantially 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, substantially 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 substantially 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, substantially 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 with Mitigation Incorporated. As discussed in Section 3.4, Biological Resources, due to the highly disturbed nature of the project area, the proposed project would not result in significant impacts to biological resources.

Despite the developed nature of the surrounding project area and the fact that the project shows evidence of prior disturbance, the City is committed to preserving the integrity of cultural resources. Thus, in response to the request for construction monitoring from the Gabrieleno Band of Mission Indians-Kizh Nation, MM-

CUL-1 and MM-CUL-2 are required to ensure that a Tribal cultural monitor is able to observe subsurface construction activities and to ensure that if any potential Tribal cultural resources are encountered, the Tribal monitor shall be able to evaluate the find. Further, in addition to existing state regulatory requirements, the Tribe have requested that additional provisions also be required to ensure that impacts related to human remains are minimized to the greatest extent feasible. These supplemental requirements are provided in MM-CUL-3.

Therefore, with the incorporation of mitigation, the 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 with Mitigation Incorporated. As determined in the analysis presented in this IS/MND, after the incorporation of mitigation, the project would not result in significant impacts in any resources area; therefore, there would be no cumulatively considerable effects.

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

Less-Than-Significant with Mitigation Incorporated. Based on the analysis in this IS/MND, for all resource topics the project would have no impact, less-than-significant impacts, or less-than-significant impacts with the incorporation of mitigation measures. Therefore, substantial adverse impacts on human beings would not occur as a result of the project.

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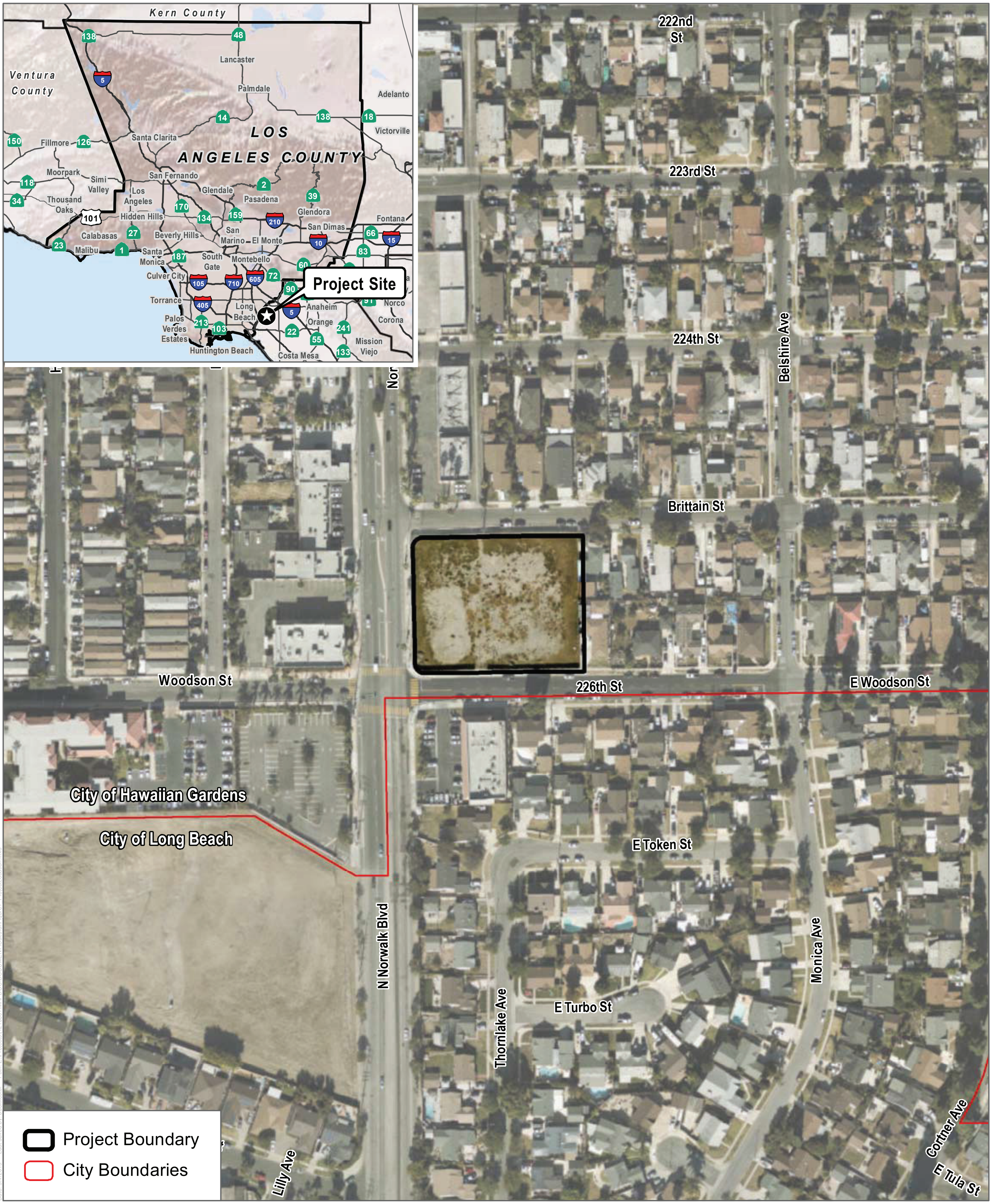
Adam Poll, Air Quality Specialist
Michael Greene, Senior Noise Acoustician
Brayden Dokkestul, GIS Specialist
Christopher Starbird, GIS Specialist
Amy Seals, Senior Technical Editor



SOURCE: ESRI: 2018

DUDEK

0 100 200 Feet
0 25 50 Meters
1:2,400

FIGURE 1

Project Location

Holiday Inn Express Suites Project

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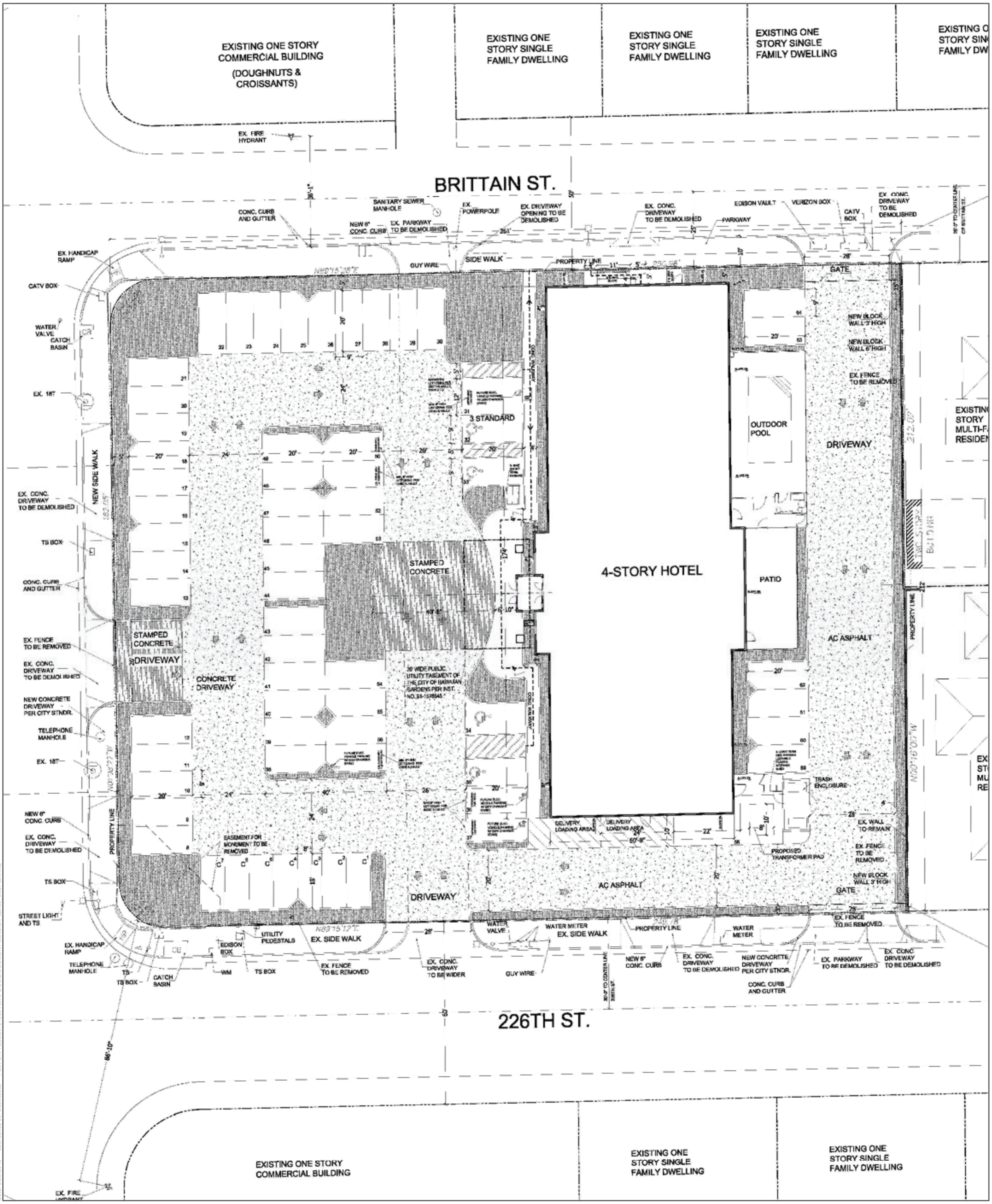


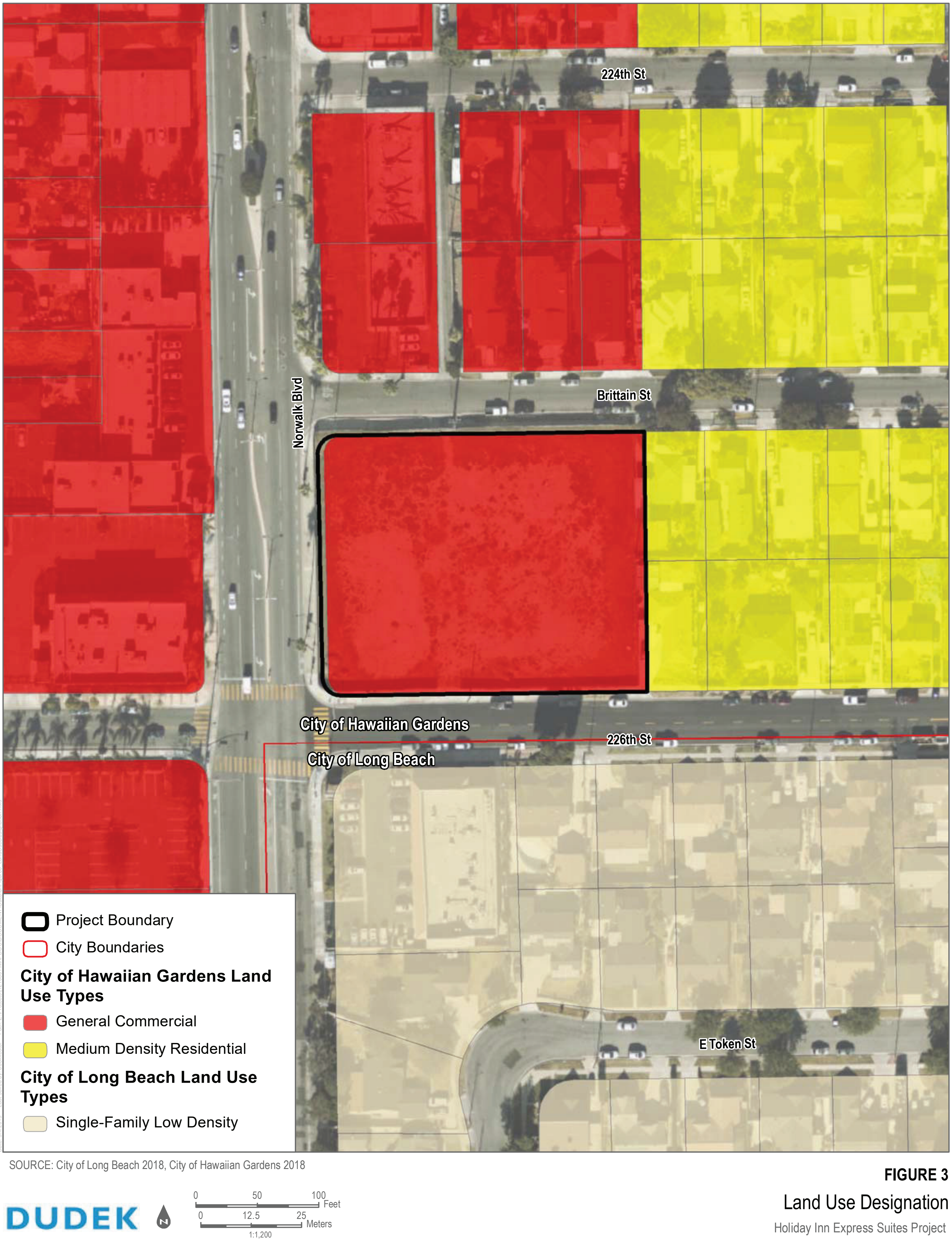
SOURCE: APEX DESIGNS LLC 2019

DUDEK

0 20 40 Feet
0 5 10 Meters
1:505

FIGURE 2
Site Plan
Holiday Inn Express Suites Project

INTENTIONALLY LEFT BLANK



SOURCE: City of Long Beach 2018, City of Hawaiian Gardens 2018

DUDEK

FIGURE 3

Land Use Designation

Holiday Inn Express Suites Project

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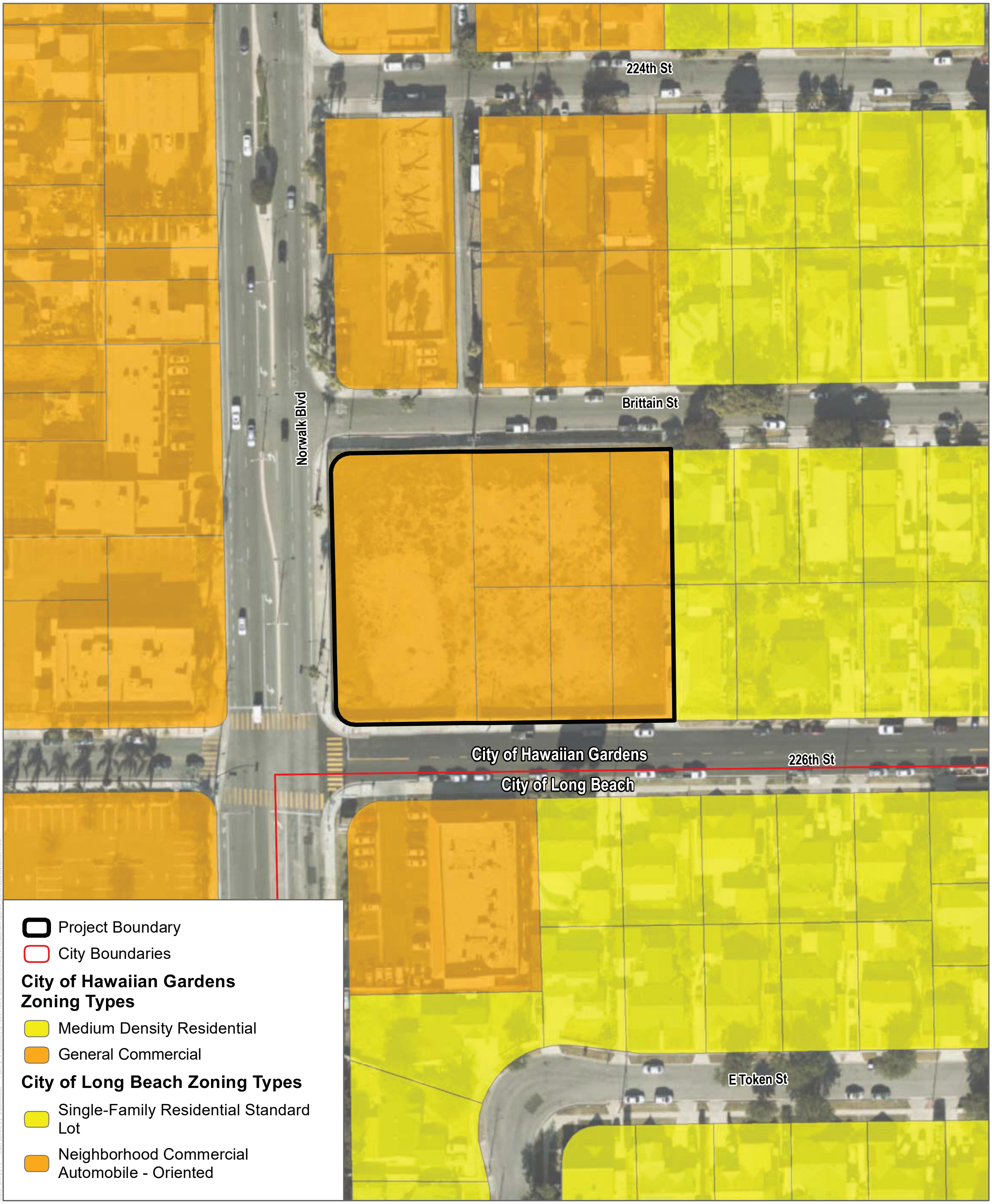

SOURCE: City of Hawaiian Gardens 2011, City of Long Beach 2011

FIGURE 4

Zoning Designation

Holiday Inn Express Suites Project

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ELEVATION NOTES:

SMOOTH TROWELL FINISH OMEGA STUCCO:

1. 9925 CHINCHILLA
2. 9228 STONE AGE
3. 9238 SHASTA
4. 427 SPICED COGNAC
5. 9231 BRONZED ORANGE (VENETIAN STYLE)
6. 7" FOAM COLOR; OMEGA 9228 STONE AGE

PAINT SHERWIN WILLIAMS:

7. METAL FLASHING PAINT; SHERWIN WILLIAMS SW 7075 WEB GRAY
8. LED HIDDEN LIGHT
10. ALUMINUM WINDOWS, MILGARD CLEAR ANODIZED
11. PTAC GRILL FLUSH WITH WINDOW FRAME TO MATCH WINDOWS.
12. 1/2 " METAL REVEAL
13. STEEL SUN SCREEN COLOR; SW 7075 WEB GRAY
14. WALL MOUNTED LIGHT FIXTURE
15. 42" HIGH PATIO STEEL RAILING COLOR; SW 7075
16. 60" HIGH SWIMMING POOL STEEL RAILING COLOR; SW 7075
17. ALUMINUM STORE FRONT
18. BUILT-UP ROOFING SINGLE PLY, GAF, EVERGUARD, TPO ICC-ESR-1597
19. 6" SEAMLESS METAL RAIN GUTTER
20. BUILDING SIGN UNDER A SEPARATE PERMIT

WEST ELEVATION

EAST ELEVATION

SOURCE: APEX DESIGNS LLC 2019

DUDEK

FIGURE 5

East and West Building Elevations

Holiday Inn Express Suites Project

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NORTH ELEVATION

ELEVATION NOTES:

SMOOTH TROWELL FINISH OMEGA STUCCO:

1. 9925 CHINCHILLA
2. 9228 STONE AGE
3. 9238 SHASTA
4. 427 SPICED COGNAC
5. 9231 BRONZED ORANGE (VENETIAN STYLE)
6. 7" FOAM COLOR; OMEGA 9228 STONE AGE

PAINT SHERWIN WILLIAMS:

7. METAL FLASHING PAINT; SHERWIN WILLIAMS SW 7075 WEB GRAY
8. LED HIDDEN LIGHT
9. STANDING STEAM METAL ROOF
10. ALUMINUM WINDOWS, MILGARD CLEAR ANODIZED
11. PTAC GRILL FLUSH WITH WINDOW FRAME TO MATCH WINDOWS.
12. 1/2 " METAL REVEAL
13. STEEL SUN SCREEN COLOR; SW 7075 WEB GRAY
14. WALL MOUNTED LIGHT FIXTURE
15. 42" HIGH PATIO STEEL RAILING COLOR; SW 7075
16. 60" HIGH SWIMMING POOL STEEL RAILING COLOR; SW 7075
17. ALUMINUM STORE FRONT
18. BUILT-UP ROOFING SINGLE PLY, GAF, EVERGUARD, TPO ICC-ESR-1597
19. 6" SEAMLESS METAL RAIN GUTTER
20. BUILDING SIGN UNDER A SEPARATE PERMIT

SOUTH ELEVATION

SOURCE: APEX DESIGNS LLC 2019

DUDEK

FIGURE 6

North and South Building Elevations

Holiday Inn Express Suites Project

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Photo A - Looking northeast toward the project site from the corner of Norwalk Boulevard and 226th Street, approximately 120 feet southwest of the project site.

Photo B - Looking northwest toward the project site from 226th Street, approximately 95 feet southeast of the project site.

Photo C - Looking southwest toward the project site from Brittain Street, approximately 50 feet northeast of the project site.

Photo D - Looking southeast toward the project site from Norwalk Boulevard, approximately 45 feet northwest of the project site.

Photo Location and Direction

Project Boundary

DUDEK

FIGURE 7

Existing Conditions – Project Site

Holiday Inn Express Suites Project

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Photo A - Looking southwest toward an apartment complex on 226th Street, approximately 365 feet west of the project site.

Photo B - Looking northeast toward commercial development along Norwalk Boulevard, approximately 93 feet west of the project site.

Photo C - Looking northeast toward residential development along 226th Street, approximately 303 feet east of the project site.

Photo D - Looking east toward the Bingo Club on Norwalk Boulevard, approximately 0.28-mile north of the project site.

Photo Location and Direction

Project Boundary

DUDEK

FIGURE 8

Existing Conditions – Surrounding Area

Holiday Inn Express Suites Project

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Appendix A

CalEEMod Output Files

Hawaiian Gardens Holiday Inn Express

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	64.00	Space	0.58	25,600.00	0
City Park	0.13	Acre	0.13	5,662.80	0
Hotel	71.00	Room	0.36	42,164.00	0
Recreational Swimming Pool	8.00	1000sqft	0.18	8,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on applicant provided information.

Construction Phase - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Trips and VMT - CalEEMod defaults. Odd trips were rounded up to account for whole round trips.

On-road Fugitive Dust - CalEEMod defaults.

Grading - Based on applicant provided information.

Architectural Coating - CalEEMod defaults.

Vehicle Trips - Based on Traffic Impact Study, Crown City Engineers, 2019.

Consumer Products - CalEEMod defaults.

Area Coating - CalEEMod defaults.

Landscape Equipment - CalEEMod defaults.

Energy Use - CalEEMod defaults.

Water And Wastewater - CalEEMod defaults.

Solid Waste - CalEEMod defaults.

Construction Off-road Equipment Mitigation - In accordance with SCAQMD Rule 403.

Waste Mitigation - In accordance with AB 341.

Table Name	Column Name	Default Value	New Value
tblGrading	MaterialExported	0.00	140.90
tblLandUse	LandUseSquareFeet	103,092.00	42,164.00
tblLandUse	LotAcreage	2.37	0.36
tblTripsAndVMT	VendorTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripNumber	7.00	8.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	8.19	8.37
tblVehicleTrips	ST_TR	9.10	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	5.95	8.37
tblVehicleTrips	SU_TR	13.60	0.00
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	8.17	8.37
tblVehicleTrips	WD_TR	33.82	0.00

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					
2019	0.0670	0.4982	0.4058	7.9000e-004	0.0276	0.0256	0.0532	0.0112	0.0246	0.0359	0.0000	68.0729	68.0729	0.0110	0.0000	68.3485
2020	0.3728	1.2815	1.1720	2.2900e-003	0.0358	0.0634	0.0992	9.6600e-003	0.0611	0.0708	0.0000	195.3016	195.3016	0.0297	0.0000	196.0444
Maximum	**0.3728**	**1.2815**	**1.1720**	**2.2900e-003**	**0.0358**	**0.0634**	**0.0992**	**0.0112**	**0.0611**	**0.0708**	**0.0000**	**195.3016**	**195.3016**	**0.0297**	**0.0000**	**196.0444**

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					
2019	0.0670	0.4982	0.4058	7.9000e-004	0.0190	0.0256	0.0446	6.8300e-003	0.0246	0.0315	0.0000	68.0728	68.0728	0.0110	0.0000	68.3484
2020	0.3728	1.2815	1.1719	2.2900e-003	0.0358	0.0634	0.0992	9.6600e-003	0.0611	0.0708	0.0000	195.3014	195.3014	0.0297	0.0000	196.0442
Maximum	**0.3728**	**1.2815**	**1.1719**	**2.2900e-003**	**0.0358**	**0.0634**	**0.0992**	**9.6600e-003**	**0.0611**	**0.0708**	**0.0000**	**195.3014**	**195.3014**	**0.0297**	**0.0000**	**196.0442**

	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**	**13.57**	**0.00**	**5.64**	**21.06**	**0.00**	**4.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	10-15-2019	1-14-2020	0.6545	0.6545
2	1-15-2020	4-14-2020	0.6051	0.6051
3	4-15-2020	7-14-2020	0.6043	0.6043
4	7-15-2020	9-30-2020	0.3496	0.3496
		Highest	0.6545	0.6545

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	0.1741	2.0000e-005	1.8300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5500e-003	3.5500e-003	1.0000e-005	0.0000	3.7900e-003
Energy	5.4500e-003	0.0496	0.0416	3.0000e-004		3.7700e-003	3.7700e-003		3.7700e-003	3.7700e-003	0.0000	158.6430	158.6430	5.3600e-003	1.8800e-003	159.3382
Mobile	0.1618	0.8273	1.9425	6.6600e-003	0.5383	5.5200e-003	0.5438	0.1442	5.1500e-003	0.1494	0.0000	615.2861	615.2861	0.0318	0.0000	616.0808
Waste						0.0000	0.0000		0.0000	0.0000	17.1487	0.0000	17.1487	1.0135	0.0000	42.4851
Water						0.0000	0.0000		0.0000	0.0000	0.7215	11.7183	12.4398	0.0746	1.8500e-003	14.8558
Total	**0.3414**	**0.8768**	**1.9860**	**6.9600e-003**	**0.5383**	**9.3000e-003**	**0.5476**	**0.1442**	**8.9300e-003**	**0.1532**	**17.8702**	**785.6509**	**803.5211**	**1.1252**	**3.7300e-003**	**832.7637**

2.2 Overall Operational

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	0.1741	2.0000e-005	1.8300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5500e-003	3.5500e-003	1.0000e-005	0.0000	3.7900e-003
Energy	5.4500e-003	0.0496	0.0416	3.0000e-004		3.7700e-003	3.7700e-003		3.7700e-003	3.7700e-003	0.0000	158.6430	158.6430	5.3600e-003	1.8800e-003	159.3382
Mobile	0.1618	0.8273	1.9425	6.6600e-003	0.5383	5.5200e-003	0.5438	0.1442	5.1500e-003	0.1494	0.0000	615.2861	615.2861	0.0318	0.0000	616.0808
Waste						0.0000	0.0000		0.0000	0.0000	8.5743	0.0000	8.5743	0.5067	0.0000	21.2426
Water						0.0000	0.0000		0.0000	0.0000	0.7215	11.7183	12.4398	0.0746	1.8500e-003	14.8558
Total	**0.3414**	**0.8768**	**1.9860**	**6.9600e-003**	**0.5383**	**9.3000e-003**	**0.5476**	**0.1442**	**8.9300e-003**	**0.1532**	**9.2958**	**785.6509**	**794.9467**	**0.6185**	**3.7300e-003**	**811.5211**

	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**	**47.98**	**0.00**	**1.07**	**45.03**	**0.00**	**2.55**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/15/2019	10/16/2019	5	2	
2	Grading	Grading	10/17/2019	10/22/2019	5	4	
3	Building Construction	Building Construction	10/23/2019	7/28/2020	5	200	
4	Paving	Paving	7/29/2020	8/11/2020	5	10	
5	Architectural Coating	Architectural Coating	8/12/2020	8/25/2020	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0.58

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 63,246; Non-Residential Outdoor: 21,082; Striped Parking Area: 1,536 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
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
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	18.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	34.00	14.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	14.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	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 Site Preparation - 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					
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	1.7100e-003	0.0195	7.8900e-003	2.0000e-005		8.8000e-004	8.8000e-004		8.1000e-004	8.1000e-004	0.0000	1.5467	1.5467	4.9000e-004	0.0000	1.5589
Total	**1.7100e-003**	**0.0195**	**7.8900e-003**	**2.0000e-005**	**5.8000e-003**	**8.8000e-004**	**6.6800e-003**	**2.9500e-003**	**8.1000e-004**	**3.7600e-003**	**0.0000**	**1.5467**	**1.5467**	**4.9000e-004**	**0.0000**	**1.5589**

3.2 Site Preparation - 2019

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	3.3000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0816	0.0816	0.0000	0.0000	0.0817
Total	**4.0000e-005**	**3.0000e-005**	**3.3000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0816**	**0.0816**	**0.0000**	**0.0000**	**0.0817**

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					2.6100e-003	0.0000	2.6100e-003	1.3300e-003	0.0000	1.3300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7100e-003	0.0195	7.8900e-003	2.0000e-005		8.8000e-004	8.8000e-004		8.1000e-004	8.1000e-004	0.0000	1.5467	1.5467	4.9000e-004	0.0000	1.5589
Total	**1.7100e-003**	**0.0195**	**7.8900e-003**	**2.0000e-005**	**2.6100e-003**	**8.8000e-004**	**3.4900e-003**	**1.3300e-003**	**8.1000e-004**	**2.1400e-003**	**0.0000**	**1.5467**	**1.5467**	**4.9000e-004**	**0.0000**	**1.5589**

3.2 Site Preparation - 2019

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	3.3000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0816	0.0816	0.0000	0.0000	0.0817
Total	**4.0000e-005**	**3.0000e-005**	**3.3000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0816**	**0.0816**	**0.0000**	**0.0000**	**0.0817**

3.3 Grading - 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					
Fugitive Dust					9.8400e-003	0.0000	9.8400e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8400e-003	0.0321	0.0132	3.0000e-005		1.4700e-003	1.4700e-003		1.3600e-003	1.3600e-003	0.0000	2.5336	2.5336	8.0000e-004	0.0000	2.5536
Total	**2.8400e-003**	**0.0321**	**0.0132**	**3.0000e-005**	**9.8400e-003**	**1.4700e-003**	**0.0113**	**5.0500e-003**	**1.3600e-003**	**6.4100e-003**	**0.0000**	**2.5336**	**2.5336**	**8.0000e-004**	**0.0000**	**2.5536**

3.3 Grading - 2019

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	8.0000e-005	2.7700e-003	5.5000e-004	1.0000e-005	1.5000e-004	1.0000e-005	1.6000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.6898	0.6898	5.0000e-005	0.0000	0.6911
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	8.0000e-005	6.0000e-005	6.7000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1632	0.1632	1.0000e-005	0.0000	0.1634
Total	**1.6000e-004**	**2.8300e-003**	**1.2200e-003**	**1.0000e-005**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**9.0000e-005**	**1.0000e-005**	**1.0000e-004**	**0.0000**	**0.8531**	**0.8531**	**6.0000e-005**	**0.0000**	**0.8545**

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					4.4300e-003	0.0000	4.4300e-003	2.2700e-003	0.0000	2.2700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8400e-003	0.0321	0.0132	3.0000e-005		1.4700e-003	1.4700e-003		1.3600e-003	1.3600e-003	0.0000	2.5336	2.5336	8.0000e-004	0.0000	2.5536
Total	**2.8400e-003**	**0.0321**	**0.0132**	**3.0000e-005**	**4.4300e-003**	**1.4700e-003**	**5.9000e-003**	**2.2700e-003**	**1.3600e-003**	**3.6300e-003**	**0.0000**	**2.5336**	**2.5336**	**8.0000e-004**	**0.0000**	**2.5536**

3.3 Grading - 2019

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	8.0000e-005	2.7700e-003	5.5000e-004	1.0000e-005	1.5000e-004	1.0000e-005	1.6000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.6898	0.6898	5.0000e-005	0.0000	0.6911
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	8.0000e-005	6.0000e-005	6.7000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1632	0.1632	1.0000e-005	0.0000	0.1634
Total	**1.6000e-004**	**2.8300e-003**	**1.2200e-003**	**1.0000e-005**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**9.0000e-005**	**1.0000e-005**	**1.0000e-004**	**0.0000**	**0.8531**	**0.8531**	**6.0000e-005**	**0.0000**	**0.8545**

3.4 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	0.0568	0.3995	0.3372	5.5000e-004		0.0229	0.0229		0.0221	0.0221	0.0000	45.7680	45.7680	8.8000e-003	0.0000	45.9879
Total	**0.0568**	**0.3995**	**0.3372**	**5.5000e-004**		**0.0229**	**0.0229**		**0.0221**	**0.0221**	**0.0000**	**45.7680**	**45.7680**	**8.8000e-003**	**0.0000**	**45.9879**

3.4 Building Construction - 2019

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	1.3900e-003	0.0410	0.0105	9.0000e-005	2.2100e-003	2.7000e-004	2.4700e-003	6.4000e-004	2.6000e-004	8.9000e-004	0.0000	8.6178	8.6178	6.0000e-004	0.0000	8.6330
Worker	4.0900e-003	3.2600e-003	0.0355	1.0000e-004	9.3300e-003	7.0000e-005	9.4000e-003	2.4800e-003	7.0000e-005	2.5500e-003	0.0000	8.6721	8.6721	2.7000e-004	0.0000	8.6789
Total	**5.4800e-003**	**0.0442**	**0.0460**	**1.9000e-004**	**0.0115**	**3.4000e-004**	**0.0119**	**3.1200e-003**	**3.3000e-004**	**3.4400e-003**	**0.0000**	**17.2900**	**17.2900**	**8.7000e-004**	**0.0000**	**17.3119**

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	0.0568	0.3995	0.3372	5.5000e-004		0.0229	0.0229		0.0221	0.0221	0.0000	45.7679	45.7679	8.8000e-003	0.0000	45.9879
Total	**0.0568**	**0.3995**	**0.3372**	**5.5000e-004**		**0.0229**	**0.0229**		**0.0221**	**0.0221**	**0.0000**	**45.7679**	**45.7679**	**8.8000e-003**	**0.0000**	**45.9879**

3.4 Building Construction - 2019

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	1.3900e-003	0.0410	0.0105	9.0000e-005	2.2100e-003	2.7000e-004	2.4700e-003	6.4000e-004	2.6000e-004	8.9000e-004	0.0000	8.6178	8.6178	6.0000e-004	0.0000	8.6330
Worker	4.0900e-003	3.2600e-003	0.0355	1.0000e-004	9.3300e-003	7.0000e-005	9.4000e-003	2.4800e-003	7.0000e-005	2.5500e-003	0.0000	8.6721	8.6721	2.7000e-004	0.0000	8.6789
Total	**5.4800e-003**	**0.0442**	**0.0460**	**1.9000e-004**	**0.0115**	**3.4000e-004**	**0.0119**	**3.1200e-003**	**3.3000e-004**	**3.4400e-003**	**0.0000**	**17.2900**	**17.2900**	**8.7000e-004**	**0.0000**	**17.3119**

3.4 Building Construction - 2020

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	0.1523	1.1091	0.9891	1.6500e-003		0.0597	0.0597		0.0577	0.0577	0.0000	136.1566	136.1566	0.0253	0.0000	136.7885
Total	**0.1523**	**1.1091**	**0.9891**	**1.6500e-003**		**0.0597**	**0.0597**		**0.0577**	**0.0577**	**0.0000**	**136.1566**	**136.1566**	**0.0253**	**0.0000**	**136.7885**

3.4 Building Construction - 2020

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	3.5500e-003	0.1126	0.0284	2.6000e-004	6.6200e-003	5.5000e-004	7.1700e-003	1.9100e-003	5.3000e-004	2.4400e-003	0.0000	25.6880	25.6880	1.7100e-003	0.0000	25.7308
Worker	0.0114	8.7400e-003	0.0967	2.8000e-004	0.0280	2.2000e-004	0.0282	7.4300e-003	2.0000e-004	7.6300e-003	0.0000	25.2101	25.2101	7.3000e-004	0.0000	25.2282
Total	**0.0149**	**0.1213**	**0.1251**	**5.4000e-004**	**0.0346**	**7.7000e-004**	**0.0354**	**9.3400e-003**	**7.3000e-004**	**0.0101**	**0.0000**	**50.8980**	**50.8980**	**2.4400e-003**	**0.0000**	**50.9590**

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	0.1523	1.1091	0.9891	1.6500e-003		0.0597	0.0597		0.0577	0.0577	0.0000	136.1564	136.1564	0.0253	0.0000	136.7883
Total	**0.1523**	**1.1091**	**0.9891**	**1.6500e-003**		**0.0597**	**0.0597**		**0.0577**	**0.0577**	**0.0000**	**136.1564**	**136.1564**	**0.0253**	**0.0000**	**136.7883**

3.4 Building Construction - 2020

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	3.5500e-003	0.1126	0.0284	2.6000e-004	6.6200e-003	5.5000e-004	7.1700e-003	1.9100e-003	5.3000e-004	2.4400e-003	0.0000	25.6880	25.6880	1.7100e-003	0.0000	25.7308
Worker	0.0114	8.7400e-003	0.0967	2.8000e-004	0.0280	2.2000e-004	0.0282	7.4300e-003	2.0000e-004	7.6300e-003	0.0000	25.2101	25.2101	7.3000e-004	0.0000	25.2282
Total	**0.0149**	**0.1213**	**0.1251**	**5.4000e-004**	**0.0346**	**7.7000e-004**	**0.0354**	**9.3400e-003**	**7.3000e-004**	**0.0101**	**0.0000**	**50.8980**	**50.8980**	**2.4400e-003**	**0.0000**	**50.9590**

3.5 Paving - 2020

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	4.2000e-003	0.0423	0.0444	7.0000e-005		2.3500e-003	2.3500e-003		2.1600e-003	2.1600e-003	0.0000	5.8829	5.8829	1.8600e-003	0.0000	5.9295
Paving	7.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.9600e-003**	**0.0423**	**0.0444**	**7.0000e-005**		**2.3500e-003**	**2.3500e-003**		**2.1600e-003**	**2.1600e-003**	**0.0000**	**5.8829**	**5.8829**	**1.8600e-003**	**0.0000**	**5.9295**

3.5 Paving - 2020

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	2.4000e-004	2.6600e-003	1.0000e-005	7.7000e-004	1.0000e-005	7.7000e-004	2.0000e-004	1.0000e-005	2.1000e-004	0.0000	0.6920	0.6920	2.0000e-005	0.0000	0.6925
Total	**3.1000e-004**	**2.4000e-004**	**2.6600e-003**	**1.0000e-005**	**7.7000e-004**	**1.0000e-005**	**7.7000e-004**	**2.0000e-004**	**1.0000e-005**	**2.1000e-004**	**0.0000**	**0.6920**	**0.6920**	**2.0000e-005**	**0.0000**	**0.6925**

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	4.2000e-003	0.0423	0.0444	7.0000e-005		2.3500e-003	2.3500e-003		2.1600e-003	2.1600e-003	0.0000	5.8828	5.8828	1.8600e-003	0.0000	5.9295
Paving	7.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.9600e-003**	**0.0423**	**0.0444**	**7.0000e-005**		**2.3500e-003**	**2.3500e-003**		**2.1600e-003**	**2.1600e-003**	**0.0000**	**5.8828**	**5.8828**	**1.8600e-003**	**0.0000**	**5.9295**

3.5 Paving - 2020

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	2.4000e-004	2.6600e-003	1.0000e-005	7.7000e-004	1.0000e-005	7.7000e-004	2.0000e-004	1.0000e-005	2.1000e-004	0.0000	0.6920	0.6920	2.0000e-005	0.0000	0.6925
Total	**3.1000e-004**	**2.4000e-004**	**2.6600e-003**	**1.0000e-005**	**7.7000e-004**	**1.0000e-005**	**7.7000e-004**	**2.0000e-004**	**1.0000e-005**	**2.1000e-004**	**0.0000**	**0.6920**	**0.6920**	**2.0000e-005**	**0.0000**	**0.6925**

3.6 Architectural Coating - 2020

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	0.1990					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.2002**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.6 Architectural Coating - 2020

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	1.8000e-004	1.4000e-004	1.5200e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3955	0.3955	1.0000e-005	0.0000	0.3957
Total	**1.8000e-004**	**1.4000e-004**	**1.5200e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3955**	**0.3955**	**1.0000e-005**	**0.0000**	**0.3957**

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	0.1990					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.2002**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.6 Architectural Coating - 2020

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	1.8000e-004	1.4000e-004	1.5200e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3955	0.3955	1.0000e-005	0.0000	0.3957
Total	**1.8000e-004**	**1.4000e-004**	**1.5200e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3955**	**0.3955**	**1.0000e-005**	**0.0000**	**0.3957**

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	0.1618	0.8273	1.9425	6.6600e-003	0.5383	5.5200e-003	0.5438	0.1442	5.1500e-003	0.1494	0.0000	615.2861	615.2861	0.0318	0.0000	616.0808
Unmitigated	0.1618	0.8273	1.9425	6.6600e-003	0.5383	5.5200e-003	0.5438	0.1442	5.1500e-003	0.1494	0.0000	615.2861	615.2861	0.0318	0.0000	616.0808

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Hotel	594.00	594.00	594.00	1,417,386	1,417,386
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Total	594.00	594.00	594.00	1,417,386	1,417,386

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
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924
Hotel	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924
Parking Lot	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924
Recreational Swimming Pool	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924

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	104.6873	104.6873	4.3200e-003	8.9000e-004	105.0618
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	104.6873	104.6873	4.3200e-003	8.9000e-004	105.0618
NaturalGas Mitigated	5.4500e-003	0.0496	0.0416	3.0000e-004		3.7700e-003	3.7700e-003		3.7700e-003	3.7700e-003	0.0000	53.9558	53.9558	1.0300e-003	9.9000e-004	54.2764
NaturalGas Unmitigated	5.4500e-003	0.0496	0.0416	3.0000e-004		3.7700e-003	3.7700e-003		3.7700e-003	3.7700e-003	0.0000	53.9558	53.9558	1.0300e-003	9.9000e-004	54.2764

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					
City Park	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
Hotel	1.01109e+006	5.4500e-003	0.0496	0.0416	3.0000e-004		3.7700e-003	3.7700e-003		3.7700e-003	3.7700e-003	0.0000	53.9558	53.9558	1.0300e-003	9.9000e-004	54.2764
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
Recreational Swimming Pool	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		**5.4500e-003**	**0.0496**	**0.0416**	**3.0000e-004**		**3.7700e-003**	**3.7700e-003**		**3.7700e-003**	**3.7700e-003**	**0.0000**	**53.9558**	**53.9558**	**1.0300e-003**	**9.9000e-004**	**54.2764**

5.2 Energy by Land Use - NaturalGas

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					
City Park	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
Hotel	1.01109e+006	5.4500e-003	0.0496	0.0416	3.0000e-004		3.7700e-003	3.7700e-003		3.7700e-003	3.7700e-003	0.0000	53.9558	53.9558	1.0300e-003	9.9000e-004	54.2764
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
Recreational Swimming Pool	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		**5.4500e-003**	**0.0496**	**0.0416**	**3.0000e-004**		**3.7700e-003**	**3.7700e-003**		**3.7700e-003**	**3.7700e-003**	**0.0000**	**53.9558**	**53.9558**	**1.0300e-003**	**9.9000e-004**	**54.2764**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Hotel	319603	101.8324	4.2000e-003	8.7000e-004	102.1967
Parking Lot	8960	2.8549	1.2000e-004	2.0000e-005	2.8651
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Total		**104.6873**	**4.3200e-003**	**8.9000e-004**	**105.0618**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Hotel	319603	101.8324	4.2000e-003	8.7000e-004	102.1967
Parking Lot	8960	2.8549	1.2000e-004	2.0000e-005	2.8651
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Total		**104.6873**	**4.3200e-003**	**8.9000e-004**	**105.0618**

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	0.1741	2.0000e-005	1.8300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5500e-003	3.5500e-003	1.0000e-005	0.0000	3.7900e-003
Unmitigated	0.1741	2.0000e-005	1.8300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5500e-003	3.5500e-003	1.0000e-005	0.0000	3.7900e-003

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	0.0199					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1541					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-004	2.0000e-005	1.8300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5500e-003	3.5500e-003	1.0000e-005	0.0000	3.7900e-003
Total	**0.1741**	**2.0000e-005**	**1.8300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.5500e-003**	**3.5500e-003**	**1.0000e-005**	**0.0000**	**3.7900e-003**

6.2 Area by SubCategory

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	0.0199					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1541					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-004	2.0000e-005	1.8300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5500e-003	3.5500e-003	1.0000e-005	0.0000	3.7900e-003
Total	**0.1741**	**2.0000e-005**	**1.8300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.5500e-003**	**3.5500e-003**	**1.0000e-005**	**0.0000**	**3.7900e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	12.4398	0.0746	1.8500e-003	14.8558
Unmitigated	12.4398	0.0746	1.8500e-003	14.8558

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.154893	0.5483	2.0000e-005	0.0000	0.5503
Hotel	1.80104 / 0.200116	8.7519	0.0590	1.4600e-003	10.6613
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0.473145 / 0.289992	3.1396	0.0155	3.9000e-004	3.6442
Total		**12.4398**	**0.0746**	**1.8500e-003**	**14.8558**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.154893	0.5483	2.0000e-005	0.0000	0.5503
Hotel	1.80104 / 0.200116	8.7519	0.0590	1.4600e-003	10.6613
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0.473145 / 0.289992	3.1396	0.0155	3.9000e-004	3.6442
Total		**12.4398**	**0.0746**	**1.8500e-003**	**14.8558**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	8.5743	0.5067	0.0000	21.2426
Unmitigated	17.1487	1.0135	0.0000	42.4851

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.01	2.0300e-003	1.2000e-004	0.0000	5.0300e-003
Hotel	38.87	7.8903	0.4663	0.0000	19.5478
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	45.6	9.2564	0.5470	0.0000	22.9323
Total		**17.1487**	**1.0135**	**0.0000**	**42.4851**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.005	1.0100e-003	6.0000e-005	0.0000	2.5100e-003
Hotel	19.435	3.9451	0.2332	0.0000	9.7739
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	22.8	4.6282	0.2735	0.0000	11.4662
Total		**8.5743**	**0.5067**	**0.0000**	**21.2426**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Hawaiian Gardens Holiday Inn Express

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	64.00	Space	0.58	25,600.00	0
City Park	0.13	Acre	0.13	5,662.80	0
Hotel	71.00	Room	0.36	42,164.00	0
Recreational Swimming Pool	8.00	1000sqft	0.18	8,000.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 31

Climate Zone 9 **Operational Year** 2021

Utility Company Southern California Edison

CO2 Intensity (lb/MWhr) 702.44 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on applicant provided information.

Construction Phase - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Trips and VMT - CalEEMod defaults. Odd trips were rounded up to account for whole round trips.

On-road Fugitive Dust - CalEEMod defaults.

Grading - Based on applicant provided information.

Architectural Coating - CalEEMod defaults.

Vehicle Trips - Based on Traffic Impact Study, Crown City Engineers, 2019.

Consumer Products - CalEEMod defaults.

Area Coating - CalEEMod defaults.

Landscape Equipment - CalEEMod defaults.

Energy Use - CalEEMod defaults.

Water And Wastewater - CalEEMod defaults.

Solid Waste - CalEEMod defaults.

Construction Off-road Equipment Mitigation - In accordance with SCAQMD Rule 403.

Waste Mitigation - In accordance with AB 341.

Table Name	Column Name	Default Value	New Value
tblGrading	MaterialExported	0.00	140.90
tblLandUse	LandUseSquareFeet	103,092.00	42,164.00
tblLandUse	LotAcreage	2.37	0.36
tblTripsAndVMT	VendorTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripNumber	7.00	8.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	8.19	8.37
tblVehicleTrips	ST_TR	9.10	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	5.95	8.37
tblVehicleTrips	SU_TR	13.60	0.00
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	8.17	8.37
tblVehicleTrips	WD_TR	33.82	0.00

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					
2019	2.4917	19.5093	15.4063	0.0297	5.8890	0.9295	6.7721	2.9774	0.8975	3.7898	0.0000	2,803.6623	2,803.6623	0.5424	0.0000	2,814.3219
2020	40.0760	16.3658	14.9325	0.0295	0.4696	0.8062	1.2758	0.1266	0.7785	0.9051	0.0000	2,771.9717	2,771.9717	0.4158	0.0000	2,782.1502
Maximum	**40.0760**	**19.5093**	**15.4063**	**0.0297**	**5.8890**	**0.9295**	**6.7721**	**2.9774**	**0.8975**	**3.7898**	**0.0000**	**2,803.6623**	**2,803.6623**	**0.5424**	**0.0000**	**2,814.3219**

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					
2019	2.4917	19.5093	15.4063	0.0297	2.6992	0.9295	3.5823	1.3529	0.8975	2.1653	0.0000	2,803.6623	2,803.6623	0.5424	0.0000	2,814.3219
2020	40.0760	16.3658	14.9325	0.0295	0.4696	0.8062	1.2758	0.1266	0.7785	0.9051	0.0000	2,771.9717	2,771.9717	0.4158	0.0000	2,782.1502
Maximum	**40.0760**	**19.5093**	**15.4063**	**0.0297**	**2.6992**	**0.9295**	**3.5823**	**1.3529**	**0.8975**	**2.1653**	**0.0000**	**2,803.6623**	**2,803.6623**	**0.5424**	**0.0000**	**2,814.3219**

	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**	**50.16**	**0.00**	**39.64**	**52.34**	**0.00**	**34.60**	**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	0.9546	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334
Energy	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328
Mobile	0.9542	4.3907	11.0484	0.0381	3.0124	0.0303	3.0427	0.8059	0.0282	0.8342		3,875.4956	3,875.4956	0.1931		3,880.3240
Total	**1.9387**	**4.6624**	**11.2912**	**0.0397**	**3.0124**	**0.0510**	**3.0634**	**0.8059**	**0.0489**	**0.8549**		**4,201.4231**	**4,201.4231**	**0.1995**	**5.9700e-003**	**4,208.1901**

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	0.9546	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334
Energy	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328
Mobile	0.9542	4.3907	11.0484	0.0381	3.0124	0.0303	3.0427	0.8059	0.0282	0.8342		3,875.4956	3,875.4956	0.1931		3,880.3240
Total	**1.9387**	**4.6624**	**11.2912**	**0.0397**	**3.0124**	**0.0510**	**3.0634**	**0.8059**	**0.0489**	**0.8549**		**4,201.4231**	**4,201.4231**	**0.1995**	**5.9700e-003**	**4,208.1901**

	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	Site Preparation	Site Preparation	10/15/2019	10/16/2019	5	2	
2	Grading	Grading	10/17/2019	10/22/2019	5	4	
3	Building Construction	Building Construction	10/23/2019	7/28/2020	5	200	
4	Paving	Paving	7/29/2020	8/11/2020	5	10	
5	Architectural Coating	Architectural Coating	8/12/2020	8/25/2020	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0.58

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 63,246; Non-Residential Outdoor: 21,082; Striped Parking Area: 1,536 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
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
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	18.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	34.00	14.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	14.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	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 Site Preparation - 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					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.7123	19.4821	7.8893	0.0172		0.8824	0.8824		0.8118	0.8118		1,704.918 9	1,704.918 9	0.5394		1,718.404 4
Total	**1.7123**	**19.4821**	**7.8893**	**0.0172**	**5.7996**	**0.8824**	**6.6819**	**2.9537**	**0.8118**	**3.7655**		**1,704.918 9**	**1,704.918 9**	**0.5394**		**1,718.404 4**

3.2 Site Preparation - 2019

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	0.0388	0.0272	0.3584	9.5000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		94.4289	94.4289	2.9600e-003		94.5029
Total	**0.0388**	**0.0272**	**0.3584**	**9.5000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**94.4289**	**94.4289**	**2.9600e-003**		**94.5029**

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					2.6098	0.0000	2.6098	1.3292	0.0000	1.3292			0.0000			0.0000
Off-Road	1.7123	19.4821	7.8893	0.0172		0.8824	0.8824		0.8118	0.8118	0.0000	1,704.9189	1,704.9189	0.5394		1,718.4044
Total	**1.7123**	**19.4821**	**7.8893**	**0.0172**	**2.6098**	**0.8824**	**3.4922**	**1.3292**	**0.8118**	**2.1409**	**0.0000**	**1,704.9189**	**1,704.9189**	**0.5394**		**1,718.4044**

3.2 Site Preparation - 2019

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	0.0388	0.0272	0.3584	9.5000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		94.4289	94.4289	2.9600e-003		94.5029
Total	**0.0388**	**0.0272**	**0.3584**	**9.5000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**94.4289**	**94.4289**	**2.9600e-003**		**94.5029**

3.3 Grading - 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					
Fugitive Dust					4.9182	0.0000	4.9182	2.5262	0.0000	2.5262			0.0000			0.0000
Off-Road	1.4197	16.0357	6.6065	0.0141		0.7365	0.7365		0.6775	0.6775		1,396.3909	1,396.3909	0.4418		1,407.4359
Total	**1.4197**	**16.0357**	**6.6065**	**0.0141**	**4.9182**	**0.7365**	**5.6547**	**2.5262**	**0.6775**	**3.2038**		**1,396.3909**	**1,396.3909**	**0.4418**		**1,407.4359**

3.3 Grading - 2019

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	0.0388	1.3399	0.2680	3.5300e-003	0.0786	5.0100e-003	0.0836	0.0215	4.7900e-003	0.0263		382.9049	382.9049	0.0275		383.5914
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	0.0388	0.0272	0.3584	9.5000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		94.4289	94.4289	2.9600e-003		94.5029
Total	**0.0776**	**1.3670**	**0.6264**	**4.4800e-003**	**0.1680**	**5.7100e-003**	**0.1737**	**0.0453**	**5.4300e-003**	**0.0507**		**477.3338**	**477.3338**	**0.0304**		**478.0943**

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					2.2132	0.0000	2.2132	1.1368	0.0000	1.1368			0.0000			0.0000
Off-Road	1.4197	16.0357	6.6065	0.0141		0.7365	0.7365		0.6775	0.6775	0.0000	1,396.3909	1,396.3909	0.4418		1,407.4359
Total	**1.4197**	**16.0357**	**6.6065**	**0.0141**	**2.2132**	**0.7365**	**2.9497**	**1.1368**	**0.6775**	**1.8143**	**0.0000**	**1,396.3909**	**1,396.3909**	**0.4418**		**1,407.4359**

3.3 Grading - 2019

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	0.0388	1.3399	0.2680	3.5300e-003	0.0786	5.0100e-003	0.0836	0.0215	4.7900e-003	0.0263		382.9049	382.9049	0.0275		383.5914
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	0.0388	0.0272	0.3584	9.5000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		94.4289	94.4289	2.9600e-003		94.5029
Total	**0.0776**	**1.3670**	**0.6264**	**4.4800e-003**	**0.1680**	**5.7100e-003**	**0.1737**	**0.0453**	**5.4300e-003**	**0.0507**		**477.3338**	**477.3338**	**0.0304**		**478.0943**

3.4 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**

3.4 Building Construction - 2019

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	0.0546	1.6071	0.3963	3.6000e-003	0.0896	0.0107	0.1002	0.0258	0.0102	0.0360		384.3170	384.3170	0.0259		384.9635
Worker	0.1651	0.1155	1.5230	4.0300e-003	0.3800	2.9700e-003	0.3830	0.1008	2.7400e-003	0.1035		401.3229	401.3229	0.0126		401.6374
Total	**0.2196**	**1.7226**	**1.9193**	**7.6300e-003**	**0.4696**	**0.0136**	**0.4833**	**0.1266**	**0.0129**	**0.1395**		**785.6399**	**785.6399**	**0.0384**		**786.6008**

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**

3.4 Building Construction - 2019

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	0.0546	1.6071	0.3963	3.6000e-003	0.0896	0.0107	0.1002	0.0258	0.0102	0.0360		384.3170	384.3170	0.0259		384.9635
Worker	0.1651	0.1155	1.5230	4.0300e-003	0.3800	2.9700e-003	0.3830	0.1008	2.7400e-003	0.1035		401.3229	401.3229	0.0126		401.6374
Total	**0.2196**	**1.7226**	**1.9193**	**7.6300e-003**	**0.4696**	**0.0136**	**0.4833**	**0.1266**	**0.0129**	**0.1395**		**785.6399**	**785.6399**	**0.0384**		**786.6008**

3.4 Building Construction - 2020

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	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688		2,001.1595	2,001.1595	0.3715		2,010.4467
Total	**2.0305**	**14.7882**	**13.1881**	**0.0220**		**0.7960**	**0.7960**		**0.7688**	**0.7688**		**2,001.1595**	**2,001.1595**	**0.3715**		**2,010.4467**

3.4 Building Construction - 2020

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	0.0465	1.4745	0.3587	3.5700e-003	0.0896	7.3000e-003	0.0969	0.0258	6.9800e-003	0.0328		381.9078	381.9078	0.0244		382.5190
Worker	0.1525	0.1031	1.3858	3.9000e-003	0.3800	2.9000e-003	0.3829	0.1008	2.6700e-003	0.1035		388.9044	388.9044	0.0112		389.1845
Total	**0.1990**	**1.5776**	**1.7444**	**7.4700e-003**	**0.4696**	**0.0102**	**0.4798**	**0.1266**	**9.6500e-003**	**0.1362**		**770.8122**	**770.8122**	**0.0357**		**771.7035**

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	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688	0.0000	2,001.1595	2,001.1595	0.3715		2,010.4467
Total	**2.0305**	**14.7882**	**13.1881**	**0.0220**		**0.7960**	**0.7960**		**0.7688**	**0.7688**	**0.0000**	**2,001.1595**	**2,001.1595**	**0.3715**		**2,010.4467**

3.4 Building Construction - 2020

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	0.0465	1.4745	0.3587	3.5700e-003	0.0896	7.3000e-003	0.0969	0.0258	6.9800e-003	0.0328		381.9078	381.9078	0.0244		382.5190
Worker	0.1525	0.1031	1.3858	3.9000e-003	0.3800	2.9000e-003	0.3829	0.1008	2.6700e-003	0.1035		388.9044	388.9044	0.0112		389.1845
Total	**0.1990**	**1.5776**	**1.7444**	**7.4700e-003**	**0.4696**	**0.0102**	**0.4798**	**0.1266**	**9.6500e-003**	**0.1362**		**770.8122**	**770.8122**	**0.0357**		**771.7035**

3.5 Paving - 2020

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	0.8402	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328		1,296.9461	1,296.9461	0.4111		1,307.2246
Paving	0.1520					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9921**	**8.4514**	**8.8758**	**0.0135**		**0.4695**	**0.4695**		**0.4328**	**0.4328**		**1,296.9461**	**1,296.9461**	**0.4111**		**1,307.2246**

3.5 Paving - 2020

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	0.0628	0.0425	0.5706	1.6100e-003	0.1565	1.1900e-003	0.1577	0.0415	1.1000e-003	0.0426		160.1371	160.1371	4.6100e-003		160.2525
Total	**0.0628**	**0.0425**	**0.5706**	**1.6100e-003**	**0.1565**	**1.1900e-003**	**0.1577**	**0.0415**	**1.1000e-003**	**0.0426**		**160.1371**	**160.1371**	**4.6100e-003**		**160.2525**

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	0.8402	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328	0.0000	1,296.9461	1,296.9461	0.4111		1,307.2246
Paving	0.1520					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9921**	**8.4514**	**8.8758**	**0.0135**		**0.4695**	**0.4695**		**0.4328**	**0.4328**	**0.0000**	**1,296.9461**	**1,296.9461**	**0.4111**		**1,307.2246**

3.5 Paving - 2020

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	0.0628	0.0425	0.5706	1.6100e-003	0.1565	1.1900e-003	0.1577	0.0415	1.1000e-003	0.0426		160.1371	160.1371	4.6100e-003		160.2525
Total	**0.0628**	**0.0425**	**0.5706**	**1.6100e-003**	**0.1565**	**1.1900e-003**	**0.1577**	**0.0415**	**1.1000e-003**	**0.0426**		**160.1371**	**160.1371**	**4.6100e-003**		**160.2525**

3.6 Architectural Coating - 2020

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	39.7980					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**40.0401**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

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	0.0359	0.0243	0.3261	9.2000e-004	0.0894	6.8000e-004	0.0901	0.0237	6.3000e-004	0.0243		91.5069	91.5069	2.6400e-003		91.5728
Total	**0.0359**	**0.0243**	**0.3261**	**9.2000e-004**	**0.0894**	**6.8000e-004**	**0.0901**	**0.0237**	**6.3000e-004**	**0.0243**		**91.5069**	**91.5069**	**2.6400e-003**		**91.5728**

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	39.7980					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**40.0401**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

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	0.0359	0.0243	0.3261	9.2000e-004	0.0894	6.8000e-004	0.0901	0.0237	6.3000e-004	0.0243		91.5069	91.5069	2.6400e-003		91.5728
Total	**0.0359**	**0.0243**	**0.3261**	**9.2000e-004**	**0.0894**	**6.8000e-004**	**0.0901**	**0.0237**	**6.3000e-004**	**0.0243**		**91.5069**	**91.5069**	**2.6400e-003**		**91.5728**

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	0.9542	4.3907	11.0484	0.0381	3.0124	0.0303	3.0427	0.8059	0.0282	0.8342		3,875.4956	3,875.4956	0.1931		3,880.3240
Unmitigated	0.9542	4.3907	11.0484	0.0381	3.0124	0.0303	3.0427	0.8059	0.0282	0.8342		3,875.4956	3,875.4956	0.1931		3,880.3240

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Hotel	594.00	594.00	594.00	1,417,386	1,417,386
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Total	594.00	594.00	594.00	1,417,386	1,417,386

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
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924
Hotel	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924
Parking Lot	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924
Recreational Swimming Pool	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924

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	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328
NaturalGas Unmitigated	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328

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					
City Park	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
Hotel	2770.12	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328
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
Recreational Swimming Pool	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		**0.0299**	**0.2716**	**0.2281**	**1.6300e-003**		**0.0206**	**0.0206**		**0.0206**	**0.0206**		**325.8961**	**325.8961**	**6.2500e-003**	**5.9700e-003**	**327.8328**

5.2 Energy by Land Use - NaturalGas

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					
City Park	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
Hotel	2.77012	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328
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
Recreational Swimming Pool	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		**0.0299**	**0.2716**	**0.2281**	**1.6300e-003**		**0.0206**	**0.0206**		**0.0206**	**0.0206**		**325.8961**	**325.8961**	**6.2500e-003**	**5.9700e-003**	**327.8328**

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	0.9546	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334
Unmitigated	0.9546	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334

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	0.1090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8442					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3700e-003	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334
Total	**0.9546**	**1.3000e-004**	**0.0147**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0313**	**0.0313**	**8.0000e-005**		**0.0334**

6.2 Area by SubCategory

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	0.1090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8442					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3700e-003	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334
Total	**0.9546**	**1.3000e-004**	**0.0147**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0313**	**0.0313**	**8.0000e-005**		**0.0334**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Hawaiian Gardens Holiday Inn Express

South Coast Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	64.00	Space	0.58	25,600.00	0
City Park	0.13	Acre	0.13	5,662.80	0
Hotel	71.00	Room	0.36	42,164.00	0
Recreational Swimming Pool	8.00	1000sqft	0.18	8,000.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 31

Climate Zone 9 **Operational Year** 2021

Utility Company Southern California Edison

CO2 Intensity (lb/MWhr) 702.44 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on applicant provided information.

Construction Phase - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Trips and VMT - CalEEMod defaults. Odd trips were rounded up to account for whole round trips.

On-road Fugitive Dust - CalEEMod defaults.

Grading - Based on applicant provided information.

Architectural Coating - CalEEMod defaults.

Vehicle Trips - Based on Traffic Impact Study, Crown City Engineers, 2019.

Consumer Products - CalEEMod defaults.

Area Coating - CalEEMod defaults.

Landscape Equipment - CalEEMod defaults.

Energy Use - CalEEMod defaults.

Water And Wastewater - CalEEMod defaults.

Solid Waste - CalEEMod defaults.

Construction Off-road Equipment Mitigation - In accordance with SCAQMD Rule 403.

Waste Mitigation - In accordance with AB 341.

Table Name	Column Name	Default Value	New Value
tblGrading	MaterialExported	0.00	140.90
tblLandUse	LandUseSquareFeet	103,092.00	42,164.00
tblLandUse	LotAcreage	2.37	0.36
tblTripsAndVMT	VendorTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripNumber	7.00	8.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	8.19	8.37
tblVehicleTrips	ST_TR	9.10	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	5.95	8.37
tblVehicleTrips	SU_TR	13.60	0.00
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	8.17	8.37
tblVehicleTrips	WD_TR	33.82	0.00

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					
2019	2.5103	19.5120	15.3096	0.0293	5.8890	0.9296	6.7721	2.9774	0.8977	3.7898	0.0000	2,768.4538	2,768.4538	0.5422	0.0000	2,779.1389
2020	40.0796	16.3754	14.8421	0.0292	0.4696	0.8063	1.2759	0.1266	0.7786	0.9052	0.0000	2,737.4573	2,737.4573	0.4155	0.0000	2,747.6601
Maximum	**40.0796**	**19.5120**	**15.3096**	**0.0293**	**5.8890**	**0.9296**	**6.7721**	**2.9774**	**0.8977**	**3.7898**	**0.0000**	**2,768.4538**	**2,768.4538**	**0.5422**	**0.0000**	**2,779.1389**

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					
2019	2.5103	19.5120	15.3096	0.0293	2.6992	0.9296	3.5823	1.3529	0.8977	2.1653	0.0000	2,768.4538	2,768.4538	0.5422	0.0000	2,779.1389
2020	40.0796	16.3754	14.8421	0.0292	0.4696	0.8063	1.2759	0.1266	0.7786	0.9052	0.0000	2,737.4573	2,737.4573	0.4155	0.0000	2,747.6601
Maximum	**40.0796**	**19.5120**	**15.3096**	**0.0293**	**2.6992**	**0.9296**	**3.5823**	**1.3529**	**0.8977**	**2.1653**	**0.0000**	**2,768.4538**	**2,768.4538**	**0.5422**	**0.0000**	**2,779.1389**

	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**	**50.16**	**0.00**	**39.63**	**52.34**	**0.00**	**34.60**	**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	0.9546	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334
Energy	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328
Mobile	0.9156	4.4634	10.5549	0.0361	3.0124	0.0305	3.0429	0.8059	0.0285	0.8344		3,674.1561	3,674.1561	0.1942		3,679.0116
Total	**1.9001**	**4.7351**	**10.7977**	**0.0377**	**3.0124**	**0.0512**	**3.0636**	**0.8059**	**0.0492**	**0.8551**		**4,000.0835**	**4,000.0835**	**0.2006**	**5.9700e-003**	**4,006.8778**

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	0.9546	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334
Energy	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328
Mobile	0.9156	4.4634	10.5549	0.0361	3.0124	0.0305	3.0429	0.8059	0.0285	0.8344		3,674.1561	3,674.1561	0.1942		3,679.0116
Total	**1.9001**	**4.7351**	**10.7977**	**0.0377**	**3.0124**	**0.0512**	**3.0636**	**0.8059**	**0.0492**	**0.8551**		**4,000.0835**	**4,000.0835**	**0.2006**	**5.9700e-003**	**4,006.8778**

	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	Site Preparation	Site Preparation	10/15/2019	10/16/2019	5	2	
2	Grading	Grading	10/17/2019	10/22/2019	5	4	
3	Building Construction	Building Construction	10/23/2019	7/28/2020	5	200	
4	Paving	Paving	7/29/2020	8/11/2020	5	10	
5	Architectural Coating	Architectural Coating	8/12/2020	8/25/2020	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0.58

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 63,246; Non-Residential Outdoor: 21,082; Striped Parking Area: 1,536 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
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
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	18.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	34.00	14.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	14.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	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 Site Preparation - 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					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.7123	19.4821	7.8893	0.0172		0.8824	0.8824		0.8118	0.8118		1,704.918 9	1,704.918 9	0.5394		1,718.404 4
Total	**1.7123**	**19.4821**	**7.8893**	**0.0172**	**5.7996**	**0.8824**	**6.6819**	**2.9537**	**0.8118**	**3.7655**		**1,704.918 9**	**1,704.918 9**	**0.5394**		**1,718.404 4**

3.2 Site Preparation - 2019

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	0.0427	0.0299	0.3256	8.9000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		88.5734	88.5734	2.7800e-003		88.6428
Total	**0.0427**	**0.0299**	**0.3256**	**8.9000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**88.5734**	**88.5734**	**2.7800e-003**		**88.6428**

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					2.6098	0.0000	2.6098	1.3292	0.0000	1.3292			0.0000			0.0000
Off-Road	1.7123	19.4821	7.8893	0.0172		0.8824	0.8824		0.8118	0.8118	0.0000	1,704.9189	1,704.9189	0.5394		1,718.4044
Total	**1.7123**	**19.4821**	**7.8893**	**0.0172**	**2.6098**	**0.8824**	**3.4922**	**1.3292**	**0.8118**	**2.1409**	**0.0000**	**1,704.9189**	**1,704.9189**	**0.5394**		**1,718.4044**

3.2 Site Preparation - 2019

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	0.0427	0.0299	0.3256	8.9000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		88.5734	88.5734	2.7800e-003		88.6428
Total	**0.0427**	**0.0299**	**0.3256**	**8.9000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**88.5734**	**88.5734**	**2.7800e-003**		**88.6428**

3.3 Grading - 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					
Fugitive Dust					4.9182	0.0000	4.9182	2.5262	0.0000	2.5262			0.0000			0.0000
Off-Road	1.4197	16.0357	6.6065	0.0141		0.7365	0.7365		0.6775	0.6775		1,396.3909	1,396.3909	0.4418		1,407.4359
Total	**1.4197**	**16.0357**	**6.6065**	**0.0141**	**4.9182**	**0.7365**	**5.6547**	**2.5262**	**0.6775**	**3.2038**		**1,396.3909**	**1,396.3909**	**0.4418**		**1,407.4359**

3.3 Grading - 2019

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	0.0398	1.3581	0.2877	3.4700e-003	0.0786	5.1000e-003	0.0837	0.0215	4.8800e-003	0.0264		376.4670	376.4670	0.0286		377.1812
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	0.0427	0.0299	0.3256	8.9000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		88.5734	88.5734	2.7800e-003		88.6428
Total	**0.0824**	**1.3880**	**0.6133**	**4.3600e-003**	**0.1680**	**5.8000e-003**	**0.1738**	**0.0453**	**5.5200e-003**	**0.0508**		**465.0404**	**465.0404**	**0.0314**		**465.8240**

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					2.2132	0.0000	2.2132	1.1368	0.0000	1.1368			0.0000			0.0000
Off-Road	1.4197	16.0357	6.6065	0.0141		0.7365	0.7365		0.6775	0.6775	0.0000	1,396.3909	1,396.3909	0.4418		1,407.4359
Total	**1.4197**	**16.0357**	**6.6065**	**0.0141**	**2.2132**	**0.7365**	**2.9497**	**1.1368**	**0.6775**	**1.8143**	**0.0000**	**1,396.3909**	**1,396.3909**	**0.4418**		**1,407.4359**

3.3 Grading - 2019

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	0.0398	1.3581	0.2877	3.4700e-003	0.0786	5.1000e-003	0.0837	0.0215	4.8800e-003	0.0264		376.4670	376.4670	0.0286		377.1812
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	0.0427	0.0299	0.3256	8.9000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		88.5734	88.5734	2.7800e-003		88.6428
Total	**0.0824**	**1.3880**	**0.6133**	**4.3600e-003**	**0.1680**	**5.8000e-003**	**0.1738**	**0.0453**	**5.5200e-003**	**0.0508**		**465.0404**	**465.0404**	**0.0314**		**465.8240**

3.4 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**

3.4 Building Construction - 2019

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	0.0569	1.6091	0.4389	3.5000e-003	0.0896	0.0108	0.1004	0.0258	0.0104	0.0361		373.9945	373.9945	0.0277		374.6859
Worker	0.1813	0.1269	1.3837	3.7800e-003	0.3800	2.9700e-003	0.3830	0.1008	2.7400e-003	0.1035		376.4369	376.4369	0.0118		376.7320
Total	**0.2382**	**1.7360**	**1.8226**	**7.2800e-003**	**0.4696**	**0.0138**	**0.4834**	**0.1266**	**0.0131**	**0.1397**		**750.4314**	**750.4314**	**0.0395**		**751.4179**

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**

3.4 Building Construction - 2019

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	0.0569	1.6091	0.4389	3.5000e-003	0.0896	0.0108	0.1004	0.0258	0.0104	0.0361		373.9945	373.9945	0.0277		374.6859
Worker	0.1813	0.1269	1.3837	3.7800e-003	0.3800	2.9700e-003	0.3830	0.1008	2.7400e-003	0.1035		376.4369	376.4369	0.0118		376.7320
Total	**0.2382**	**1.7360**	**1.8226**	**7.2800e-003**	**0.4696**	**0.0138**	**0.4834**	**0.1266**	**0.0131**	**0.1397**		**750.4314**	**750.4314**	**0.0395**		**751.4179**

3.4 Building Construction - 2020

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	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688		2,001.1595	2,001.1595	0.3715		2,010.4467
Total	**2.0305**	**14.7882**	**13.1881**	**0.0220**		**0.7960**	**0.7960**		**0.7688**	**0.7688**		**2,001.1595**	**2,001.1595**	**0.3715**		**2,010.4467**

3.4 Building Construction - 2020

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	0.0486	1.4740	0.3974	3.4800e-003	0.0896	7.4100e-003	0.0970	0.0258	7.0900e-003	0.0329		371.5284	371.5284	0.0261		372.1815
Worker	0.1678	0.1133	1.2566	3.6600e-003	0.3800	2.9000e-003	0.3829	0.1008	2.6700e-003	0.1035		364.7694	364.7694	0.0105		365.0319
Total	**0.2164**	**1.5872**	**1.6540**	**7.1400e-003**	**0.4696**	**0.0103**	**0.4799**	**0.1266**	**9.7600e-003**	**0.1363**		**736.2978**	**736.2978**	**0.0366**		**737.2134**

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	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688	0.0000	2,001.1595	2,001.1595	0.3715		2,010.4467
Total	**2.0305**	**14.7882**	**13.1881**	**0.0220**		**0.7960**	**0.7960**		**0.7688**	**0.7688**	**0.0000**	**2,001.1595**	**2,001.1595**	**0.3715**		**2,010.4467**

3.4 Building Construction - 2020

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	0.0486	1.4740	0.3974	3.4800e-003	0.0896	7.4100e-003	0.0970	0.0258	7.0900e-003	0.0329		371.5284	371.5284	0.0261		372.1815
Worker	0.1678	0.1133	1.2566	3.6600e-003	0.3800	2.9000e-003	0.3829	0.1008	2.6700e-003	0.1035		364.7694	364.7694	0.0105		365.0319
Total	**0.2164**	**1.5872**	**1.6540**	**7.1400e-003**	**0.4696**	**0.0103**	**0.4799**	**0.1266**	**9.7600e-003**	**0.1363**		**736.2978**	**736.2978**	**0.0366**		**737.2134**

3.5 Paving - 2020

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	0.8402	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328		1,296.9461	1,296.9461	0.4111		1,307.2246
Paving	0.1520					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9921**	**8.4514**	**8.8758**	**0.0135**		**0.4695**	**0.4695**		**0.4328**	**0.4328**		**1,296.9461**	**1,296.9461**	**0.4111**		**1,307.2246**

3.5 Paving - 2020

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	0.0691	0.0466	0.5174	1.5100e-003	0.1565	1.1900e-003	0.1577	0.0415	1.1000e-003	0.0426		150.1992	150.1992	4.3200e-003		150.3073
Total	**0.0691**	**0.0466**	**0.5174**	**1.5100e-003**	**0.1565**	**1.1900e-003**	**0.1577**	**0.0415**	**1.1000e-003**	**0.0426**		**150.1992**	**150.1992**	**4.3200e-003**		**150.3073**

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	0.8402	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328	0.0000	1,296.9461	1,296.9461	0.4111		1,307.2246
Paving	0.1520					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9921**	**8.4514**	**8.8758**	**0.0135**		**0.4695**	**0.4695**		**0.4328**	**0.4328**	**0.0000**	**1,296.9461**	**1,296.9461**	**0.4111**		**1,307.2246**

3.5 Paving - 2020

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	0.0691	0.0466	0.5174	1.5100e-003	0.1565	1.1900e-003	0.1577	0.0415	1.1000e-003	0.0426		150.1992	150.1992	4.3200e-003		150.3073
Total	**0.0691**	**0.0466**	**0.5174**	**1.5100e-003**	**0.1565**	**1.1900e-003**	**0.1577**	**0.0415**	**1.1000e-003**	**0.0426**		**150.1992**	**150.1992**	**4.3200e-003**		**150.3073**

3.6 Architectural Coating - 2020

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	39.7980					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**40.0401**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

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	0.0395	0.0267	0.2957	8.6000e-004	0.0894	6.8000e-004	0.0901	0.0237	6.3000e-004	0.0243		85.8281	85.8281	2.4700e-003		85.8899
Total	**0.0395**	**0.0267**	**0.2957**	**8.6000e-004**	**0.0894**	**6.8000e-004**	**0.0901**	**0.0237**	**6.3000e-004**	**0.0243**		**85.8281**	**85.8281**	**2.4700e-003**		**85.8899**

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	39.7980					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**40.0401**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

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	0.0395	0.0267	0.2957	8.6000e-004	0.0894	6.8000e-004	0.0901	0.0237	6.3000e-004	0.0243		85.8281	85.8281	2.4700e-003		85.8899
Total	**0.0395**	**0.0267**	**0.2957**	**8.6000e-004**	**0.0894**	**6.8000e-004**	**0.0901**	**0.0237**	**6.3000e-004**	**0.0243**		**85.8281**	**85.8281**	**2.4700e-003**		**85.8899**

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	0.9156	4.4634	10.5549	0.0361	3.0124	0.0305	3.0429	0.8059	0.0285	0.8344		3,674.1561	3,674.1561	0.1942		3,679.0116
Unmitigated	0.9156	4.4634	10.5549	0.0361	3.0124	0.0305	3.0429	0.8059	0.0285	0.8344		3,674.1561	3,674.1561	0.1942		3,679.0116

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Hotel	594.00	594.00	594.00	1,417,386	1,417,386
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Total	594.00	594.00	594.00	1,417,386	1,417,386

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
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924
Hotel	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924
Parking Lot	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924
Recreational Swimming Pool	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924

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	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328
NaturalGas Unmitigated	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328

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					
City Park	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
Hotel	2770.12	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328
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
Recreational Swimming Pool	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		**0.0299**	**0.2716**	**0.2281**	**1.6300e-003**		**0.0206**	**0.0206**		**0.0206**	**0.0206**		**325.8961**	**325.8961**	**6.2500e-003**	**5.9700e-003**	**327.8328**

5.2 Energy by Land Use - NaturalGas

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					
City Park	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
Hotel	2.77012	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328
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
Recreational Swimming Pool	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		**0.0299**	**0.2716**	**0.2281**	**1.6300e-003**		**0.0206**	**0.0206**		**0.0206**	**0.0206**		**325.8961**	**325.8961**	**6.2500e-003**	**5.9700e-003**	**327.8328**

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	0.9546	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334
Unmitigated	0.9546	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334

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	0.1090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8442					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3700e-003	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334
Total	**0.9546**	**1.3000e-004**	**0.0147**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0313**	**0.0313**	**8.0000e-005**		**0.0334**

6.2 Area by SubCategory

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	0.1090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8442					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3700e-003	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334
Total	**0.9546**	**1.3000e-004**	**0.0147**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0313**	**0.0313**	**8.0000e-005**		**0.0334**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Hawaiian Gardens Holiday Inn Express LST

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	64.00	Space	0.58	25,600.00	0
City Park	0.13	Acre	0.13	5,662.80	0
Hotel	71.00	Room	0.36	42,164.00	0
Recreational Swimming Pool	8.00	1000sqft	0.18	8,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on applicant provided information.

Construction Phase - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Trips and VMT - CalEEMod defaults. Odd trips were rounded up to account for whole round trips.

On-road Fugitive Dust - CalEEMod defaults.

Grading - Based on applicant provided information.

Architectural Coating - CalEEMod defaults.

Vehicle Trips - Based on Traffic Impact Study, Crown City Engineers, 2019.

Consumer Products - CalEEMod defaults.

Area Coating - CalEEMod defaults.

Landscape Equipment - CalEEMod defaults.

Energy Use - CalEEMod defaults.

Water And Wastewater - CalEEMod defaults.

Solid Waste - CalEEMod defaults.

Construction Off-road Equipment Mitigation - In accordance with SCAQMD Rule 403.

Waste Mitigation - In accordance with AB 341.

Table Name	Column Name	Default Value	New Value
tblGrading	MaterialExported	0.00	140.90
tblLandUse	LandUseSquareFeet	103,092.00	42,164.00
tblLandUse	LotAcreage	2.37	0.36
tblTripsAndVMT	HaulingTripLength	20.00	0.19
tblTripsAndVMT	HaulingTripLength	20.00	0.19
tblTripsAndVMT	HaulingTripLength	20.00	0.19
tblTripsAndVMT	HaulingTripLength	20.00	0.19
tblTripsAndVMT	HaulingTripLength	20.00	0.19
tblTripsAndVMT	VendorTripLength	6.90	0.19
tblTripsAndVMT	VendorTripLength	6.90	0.19
tblTripsAndVMT	VendorTripLength	6.90	0.19
tblTripsAndVMT	VendorTripLength	6.90	0.19
tblTripsAndVMT	VendorTripLength	6.90	0.19
tblTripsAndVMT	VendorTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripLength	14.70	0.00
tblTripsAndVMT	WorkerTripLength	14.70	0.00
tblTripsAndVMT	WorkerTripLength	14.70	0.00
tblTripsAndVMT	WorkerTripLength	14.70	0.00
tblTripsAndVMT	WorkerTripLength	14.70	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripNumber	7.00	8.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	8.19	5.32
tblVehicleTrips	ST_TR	9.10	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	5.95	5.32

tblVehicleTrips	SU_TR	13.60	0.00
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	8.17	5.32
tblVehicleTrips	WD_TR	33.82	0.00

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					
2019	2.3366	19.4847	13.8451	0.0230	5.7997	0.9170	6.6821	2.9537	0.8856	3.7655	0.0000	2,118.0528	2,118.0528	0.5396	0.0000	2,128.1459
2020	40.0492	15.6614	13.5129	0.0230	3.1600e-003	0.7968	0.7999	9.8000e-004	0.7696	0.7706	0.0000	2,101.0233	2,101.0233	0.4114	0.0000	2,110.6739
Maximum	**40.0492**	**19.4847**	**13.8451**	**0.0230**	**5.7997**	**0.9170**	**6.6821**	**2.9537**	**0.8856**	**3.7655**	**0.0000**	**2,118.0528**	**2,118.0528**	**0.5396**	**0.0000**	**2,128.1459**

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					
2019	2.3366	19.4847	13.8451	0.0230	2.6099	0.9170	3.4923	1.3292	0.8856	2.1410	0.0000	2,118.0528	2,118.0528	0.5396	0.0000	2,128.1459
2020	40.0492	15.6614	13.5129	0.0230	3.1600e-003	0.7968	0.7999	9.8000e-004	0.7696	0.7706	0.0000	2,101.0233	2,101.0233	0.4114	0.0000	2,110.6739
Maximum	**40.0492**	**19.4847**	**13.8451**	**0.0230**	**2.6099**	**0.9170**	**3.4923**	**1.3292**	**0.8856**	**2.1410**	**0.0000**	**2,118.0528**	**2,118.0528**	**0.5396**	**0.0000**	**2,128.1459**

	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**	**54.97**	**0.00**	**42.63**	**54.98**	**0.00**	**35.81**	**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	0.9546	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334
Energy	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328
Mobile	0.6068	2.7920	7.0256	0.0242	1.9156	0.0192	1.9348	0.5125	0.0180	0.5305		2,464.3977	2,464.3977	0.1228		2,467.4680
Total	**1.5913**	**3.0637**	**7.2684**	**0.0259**	**1.9156**	**0.0399**	**1.9555**	**0.5125**	**0.0387**	**0.5511**		**2,790.3251**	**2,790.3251**	**0.1291**	**5.9700e-003**	**2,795.3341**

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	0.9546	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334
Energy	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328
Mobile	0.6068	2.7920	7.0256	0.0242	1.9156	0.0192	1.9348	0.5125	0.0180	0.5305		2,464.3977	2,464.3977	0.1228		2,467.4680
Total	**1.5913**	**3.0637**	**7.2684**	**0.0259**	**1.9156**	**0.0399**	**1.9555**	**0.5125**	**0.0387**	**0.5511**		**2,790.3251**	**2,790.3251**	**0.1291**	**5.9700e-003**	**2,795.3341**

	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	Site Preparation	Site Preparation	10/15/2019	10/16/2019	5	2	
2	Grading	Grading	10/17/2019	10/22/2019	5	4	
3	Building Construction	Building Construction	10/23/2019	7/28/2020	5	200	
4	Paving	Paving	7/29/2020	8/11/2020	5	10	
5	Architectural Coating	Architectural Coating	8/12/2020	8/25/2020	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0.58

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 63,246; Non-Residential Outdoor: 21,082; Striped Parking Area: 1,536 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
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
Site Preparation	3	8.00	0.00	0.00	0.00	0.19	0.19	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	18.00	0.00	0.19	0.19	LD_Mix	HDT_Mix	HHDT
Building Construction	7	34.00	14.00	0.00	0.00	0.19	0.19	LD_Mix	HDT_Mix	HHDT
Paving	5	14.00	0.00	0.00	0.00	0.19	0.19	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	0.00	0.00	0.00	0.19	0.19	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 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					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.7123	19.4821	7.8893	0.0172		0.8824	0.8824		0.8118	0.8118		1,704.918 9	1,704.918 9	0.5394		1,718.404 4
Total	**1.7123**	**19.4821**	**7.8893**	**0.0172**	**5.7996**	**0.8824**	**6.6819**	**2.9537**	**0.8118**	**3.7655**		**1,704.918 9**	**1,704.918 9**	**0.5394**		**1,718.404 4**

3.2 Site Preparation - 2019

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	9.8900e-003	2.6100e-003	0.0350	2.0000e-005	8.0000e-005	5.0000e-005	1.3000e-004	3.0000e-005	5.0000e-005	8.0000e-005		1.8942	1.8942	2.0000e-004		1.8991
Total	**9.8900e-003**	**2.6100e-003**	**0.0350**	**2.0000e-005**	**8.0000e-005**	**5.0000e-005**	**1.3000e-004**	**3.0000e-005**	**5.0000e-005**	**8.0000e-005**		**1.8942**	**1.8942**	**2.0000e-004**		**1.8991**

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					2.6098	0.0000	2.6098	1.3292	0.0000	1.3292			0.0000			0.0000
Off-Road	1.7123	19.4821	7.8893	0.0172		0.8824	0.8824		0.8118	0.8118	0.0000	1,704.918 9	1,704.918 9	0.5394		1,718.404 4
Total	**1.7123**	**19.4821**	**7.8893**	**0.0172**	**2.6098**	**0.8824**	**3.4922**	**1.3292**	**0.8118**	**2.1409**	**0.0000**	**1,704.918 9**	**1,704.918 9**	**0.5394**		**1,718.404 4**

3.2 Site Preparation - 2019

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	9.8900e-003	2.6100e-003	0.0350	2.0000e-005	8.0000e-005	5.0000e-005	1.3000e-004	3.0000e-005	5.0000e-005	8.0000e-005		1.8942	1.8942	2.0000e-004		1.8991
Total	**9.8900e-003**	**2.6100e-003**	**0.0350**	**2.0000e-005**	**8.0000e-005**	**5.0000e-005**	**1.3000e-004**	**3.0000e-005**	**5.0000e-005**	**8.0000e-005**		**1.8942**	**1.8942**	**2.0000e-004**		**1.8991**

3.3 Grading - 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					
Fugitive Dust					4.9182	0.0000	4.9182	2.5262	0.0000	2.5262			0.0000			0.0000
Off-Road	1.4197	16.0357	6.6065	0.0141		0.7365	0.7365		0.6775	0.6775		1,396.390 9	1,396.390 9	0.4418		1,407.435 9
Total	**1.4197**	**16.0357**	**6.6065**	**0.0141**	**4.9182**	**0.7365**	**5.6547**	**2.5262**	**0.6775**	**3.2038**		**1,396.390 9**	**1,396.390 9**	**0.4418**		**1,407.435 9**

3.3 Grading - 2019

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	8.6000e-003	0.4534	0.0567	5.0000e-004	8.4000e-004	3.3000e-004	1.1700e-003	2.4000e-004	3.1000e-004	5.5000e-004		53.7131	53.7131	8.8100e-003		53.9335
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	9.8900e-003	2.6100e-003	0.0350	2.0000e-005	8.0000e-005	5.0000e-005	1.3000e-004	3.0000e-005	5.0000e-005	8.0000e-005		1.8942	1.8942	2.0000e-004		1.8991
Total	**0.0185**	**0.4560**	**0.0917**	**5.2000e-004**	**9.2000e-004**	**3.8000e-004**	**1.3000e-003**	**2.7000e-004**	**3.6000e-004**	**6.3000e-004**		**55.6073**	**55.6073**	**9.0100e-003**		**55.8325**

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					2.2132	0.0000	2.2132	1.1368	0.0000	1.1368			0.0000			0.0000
Off-Road	1.4197	16.0357	6.6065	0.0141		0.7365	0.7365		0.6775	0.6775	0.0000	1,396.3909	1,396.3909	0.4418		1,407.4359
Total	**1.4197**	**16.0357**	**6.6065**	**0.0141**	**2.2132**	**0.7365**	**2.9497**	**1.1368**	**0.6775**	**1.8143**	**0.0000**	**1,396.3909**	**1,396.3909**	**0.4418**		**1,407.4359**

3.3 Grading - 2019

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	8.6000e-003	0.4534	0.0567	5.0000e-004	8.4000e-004	3.3000e-004	1.1700e-003	2.4000e-004	3.1000e-004	5.5000e-004		53.7131	53.7131	8.8100e-003		53.9335
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	9.8900e-003	2.6100e-003	0.0350	2.0000e-005	8.0000e-005	5.0000e-005	1.3000e-004	3.0000e-005	5.0000e-005	8.0000e-005		1.8942	1.8942	2.0000e-004		1.8991
Total	**0.0185**	**0.4560**	**0.0917**	**5.2000e-004**	**9.2000e-004**	**3.8000e-004**	**1.3000e-003**	**2.7000e-004**	**3.6000e-004**	**6.3000e-004**		**55.6073**	**55.6073**	**9.0100e-003**		**55.8325**

3.4 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**

3.4 Building Construction - 2019

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	0.0225	0.8935	0.2092	8.6000e-004	2.8200e-003	9.0000e-004	3.7200e-003	8.5000e-004	8.6000e-004	1.7100e-003		91.9802	91.9802	0.0150		92.3538
Worker	0.0420	0.0111	0.1489	8.0000e-005	3.4000e-004	2.2000e-004	5.6000e-004	1.3000e-004	2.1000e-004	3.4000e-004		8.0502	8.0502	8.3000e-004		8.0710
Total	**0.0645**	**0.9046**	**0.3581**	**9.4000e-004**	**3.1600e-003**	**1.1200e-003**	**4.2800e-003**	**9.8000e-004**	**1.0700e-003**	**2.0500e-003**		**100.0304**	**100.0304**	**0.0158**		**100.4248**

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**

3.4 Building Construction - 2019

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	0.0225	0.8935	0.2092	8.6000e-004	2.8200e-003	9.0000e-004	3.7200e-003	8.5000e-004	8.6000e-004	1.7100e-003		91.9802	91.9802	0.0150		92.3538
Worker	0.0420	0.0111	0.1489	8.0000e-005	3.4000e-004	2.2000e-004	5.6000e-004	1.3000e-004	2.1000e-004	3.4000e-004		8.0502	8.0502	8.3000e-004		8.0710
Total	**0.0645**	**0.9046**	**0.3581**	**9.4000e-004**	**3.1600e-003**	**1.1200e-003**	**4.2800e-003**	**9.8000e-004**	**1.0700e-003**	**2.0500e-003**		**100.0304**	**100.0304**	**0.0158**		**100.4248**

3.4 Building Construction - 2020

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	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688		2,001.1595	2,001.1595	0.3715		2,010.4467
Total	**2.0305**	**14.7882**	**13.1881**	**0.0220**		**0.7960**	**0.7960**		**0.7688**	**0.7688**		**2,001.1595**	**2,001.1595**	**0.3715**		**2,010.4467**

3.4 Building Construction - 2020

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	0.0201	0.8635	0.1918	8.6000e-004	2.8200e-003	5.9000e-004	3.4200e-003	8.5000e-004	5.7000e-004	1.4200e-003		92.0424	92.0424	0.0138		92.3876
Worker	0.0384	9.6900e-003	0.1330	8.0000e-005	3.4000e-004	2.2000e-004	5.5000e-004	1.3000e-004	2.0000e-004	3.3000e-004		7.8214	7.8214	7.3000e-004		7.8396
Total	**0.0585**	**0.8732**	**0.3248**	**9.4000e-004**	**3.1600e-003**	**8.1000e-004**	**3.9700e-003**	**9.8000e-004**	**7.7000e-004**	**1.7500e-003**		**99.8638**	**99.8638**	**0.0145**		**100.2272**

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	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688	0.0000	2,001.1595	2,001.1595	0.3715		2,010.4467
Total	**2.0305**	**14.7882**	**13.1881**	**0.0220**		**0.7960**	**0.7960**		**0.7688**	**0.7688**	**0.0000**	**2,001.1595**	**2,001.1595**	**0.3715**		**2,010.4467**

3.4 Building Construction - 2020

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	0.0201	0.8635	0.1918	8.6000e-004	2.8200e-003	5.9000e-004	3.4200e-003	8.5000e-004	5.7000e-004	1.4200e-003		92.0424	92.0424	0.0138		92.3876
Worker	0.0384	9.6900e-003	0.1330	8.0000e-005	3.4000e-004	2.2000e-004	5.5000e-004	1.3000e-004	2.0000e-004	3.3000e-004		7.8214	7.8214	7.3000e-004		7.8396
Total	**0.0585**	**0.8732**	**0.3248**	**9.4000e-004**	**3.1600e-003**	**8.1000e-004**	**3.9700e-003**	**9.8000e-004**	**7.7000e-004**	**1.7500e-003**		**99.8638**	**99.8638**	**0.0145**		**100.2272**

3.5 Paving - 2020

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	0.8402	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328		1,296.9461	1,296.9461	0.4111		1,307.2246
Paving	0.1520					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9921**	**8.4514**	**8.8758**	**0.0135**		**0.4695**	**0.4695**		**0.4328**	**0.4328**		**1,296.9461**	**1,296.9461**	**0.4111**		**1,307.2246**

3.5 Paving - 2020

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	0.0158	3.9900e-003	0.0548	3.0000e-005	1.4000e-004	9.0000e-005	2.3000e-004	5.0000e-005	8.0000e-005	1.4000e-004		3.2206	3.2206	3.0000e-004		3.2281
Total	**0.0158**	**3.9900e-003**	**0.0548**	**3.0000e-005**	**1.4000e-004**	**9.0000e-005**	**2.3000e-004**	**5.0000e-005**	**8.0000e-005**	**1.4000e-004**		**3.2206**	**3.2206**	**3.0000e-004**		**3.2281**

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	0.8402	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328	0.0000	1,296.946 1	1,296.946 1	0.4111		1,307.224 6
Paving	0.1520					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9921**	**8.4514**	**8.8758**	**0.0135**		**0.4695**	**0.4695**		**0.4328**	**0.4328**	**0.0000**	**1,296.946 1**	**1,296.946 1**	**0.4111**		**1,307.224 6**

3.5 Paving - 2020

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	0.0158	3.9900e-003	0.0548	3.0000e-005	1.4000e-004	9.0000e-005	2.3000e-004	5.0000e-005	8.0000e-005	1.4000e-004		3.2206	3.2206	3.0000e-004		3.2281
Total	**0.0158**	**3.9900e-003**	**0.0548**	**3.0000e-005**	**1.4000e-004**	**9.0000e-005**	**2.3000e-004**	**5.0000e-005**	**8.0000e-005**	**1.4000e-004**		**3.2206**	**3.2206**	**3.0000e-004**		**3.2281**

3.6 Architectural Coating - 2020

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	39.7980					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**40.0401**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

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	9.0400e-003	2.2800e-003	0.0313	2.0000e-005	8.0000e-005	5.0000e-005	1.3000e-004	3.0000e-005	5.0000e-005	8.0000e-005		1.8403	1.8403	1.7000e-004		1.8446
Total	**9.0400e-003**	**2.2800e-003**	**0.0313**	**2.0000e-005**	**8.0000e-005**	**5.0000e-005**	**1.3000e-004**	**3.0000e-005**	**5.0000e-005**	**8.0000e-005**		**1.8403**	**1.8403**	**1.7000e-004**		**1.8446**

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	39.7980					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**40.0401**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

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	9.0400e-003	2.2800e-003	0.0313	2.0000e-005	8.0000e-005	5.0000e-005	1.3000e-004	3.0000e-005	5.0000e-005	8.0000e-005		1.8403	1.8403	1.7000e-004		1.8446
Total	**9.0400e-003**	**2.2800e-003**	**0.0313**	**2.0000e-005**	**8.0000e-005**	**5.0000e-005**	**1.3000e-004**	**3.0000e-005**	**5.0000e-005**	**8.0000e-005**		**1.8403**	**1.8403**	**1.7000e-004**		**1.8446**

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	0.6068	2.7920	7.0256	0.0242	1.9156	0.0192	1.9348	0.5125	0.0180	0.5305		2,464.3977	2,464.3977	0.1228		2,467.4680
Unmitigated	0.6068	2.7920	7.0256	0.0242	1.9156	0.0192	1.9348	0.5125	0.0180	0.5305		2,464.3977	2,464.3977	0.1228		2,467.4680

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Hotel	377.72	377.72	377.72	901,305	901,305
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Total	377.72	377.72	377.72	901,305	901,305

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
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924
Hotel	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924
Parking Lot	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924
Recreational Swimming Pool	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924

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	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328
NaturalGas Unmitigated	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328

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					
City Park	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
Hotel	2770.12	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328
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
Recreational Swimming Pool	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		**0.0299**	**0.2716**	**0.2281**	**1.6300e-003**		**0.0206**	**0.0206**		**0.0206**	**0.0206**		**325.8961**	**325.8961**	**6.2500e-003**	**5.9700e-003**	**327.8328**

5.2 Energy by Land Use - NaturalGas

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					
City Park	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
Hotel	2.77012	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328
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
Recreational Swimming Pool	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		**0.0299**	**0.2716**	**0.2281**	**1.6300e-003**		**0.0206**	**0.0206**		**0.0206**	**0.0206**		**325.8961**	**325.8961**	**6.2500e-003**	**5.9700e-003**	**327.8328**

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	0.9546	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334
Unmitigated	0.9546	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334

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	0.1090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8442					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3700e-003	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334
Total	**0.9546**	**1.3000e-004**	**0.0147**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0313**	**0.0313**	**8.0000e-005**		**0.0334**

6.2 Area by SubCategory

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	0.1090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8442					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3700e-003	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334
Total	**0.9546**	**1.3000e-004**	**0.0147**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0313**	**0.0313**	**8.0000e-005**		**0.0334**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Hawaiian Gardens Holiday Inn Express LST

South Coast Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	64.00	Space	0.58	25,600.00	0
City Park	0.13	Acre	0.13	5,662.80	0
Hotel	71.00	Room	0.36	42,164.00	0
Recreational Swimming Pool	8.00	1000sqft	0.18	8,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Based on applicant provided information.

Construction Phase - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Off-road Equipment - CalEEMod defaults.

Trips and VMT - CalEEMod defaults. Odd trips were rounded up to account for whole round trips.

On-road Fugitive Dust - CalEEMod defaults.

Grading - Based on applicant provided information.

Architectural Coating - CalEEMod defaults.

Vehicle Trips - Based on Traffic Impact Study, Crown City Engineers, 2019.

Consumer Products - CalEEMod defaults.

Area Coating - CalEEMod defaults.

Landscape Equipment - CalEEMod defaults.

Energy Use - CalEEMod defaults.

Water And Wastewater - CalEEMod defaults.

Solid Waste - CalEEMod defaults.

Construction Off-road Equipment Mitigation - In accordance with SCAQMD Rule 403.

Waste Mitigation - In accordance with AB 341.

Hawaiian Gardens Holiday Inn Express LST - South Coast Air Basin, Winter

Table Name	Column Name	Default Value	New Value
tblGrading	MaterialExported	0.00	140.90
tblLandUse	LandUseSquareFeet	103,092.00	42,164.00
tblLandUse	LotAcreage	2.37	0.36
tblTripsAndVMT	HaulingTripLength	20.00	0.19
tblTripsAndVMT	HaulingTripLength	20.00	0.19
tblTripsAndVMT	HaulingTripLength	20.00	0.19
tblTripsAndVMT	HaulingTripLength	20.00	0.19
tblTripsAndVMT	HaulingTripLength	20.00	0.19
tblTripsAndVMT	VendorTripLength	6.90	0.19
tblTripsAndVMT	VendorTripLength	6.90	0.19
tblTripsAndVMT	VendorTripLength	6.90	0.19
tblTripsAndVMT	VendorTripLength	6.90	0.19
tblTripsAndVMT	VendorTripLength	6.90	0.19
tblTripsAndVMT	VendorTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripLength	14.70	0.00
tblTripsAndVMT	WorkerTripLength	14.70	0.00
tblTripsAndVMT	WorkerTripLength	14.70	0.00
tblTripsAndVMT	WorkerTripLength	14.70	0.00
tblTripsAndVMT	WorkerTripLength	14.70	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripNumber	7.00	8.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	8.19	5.32
tblVehicleTrips	ST_TR	9.10	0.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	5.95	5.32

tblVehicleTrips	SU_TR	13.60	0.00
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	8.17	5.32
tblVehicleTrips	WD_TR	33.82	0.00

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					
2019	2.3350	19.4849	13.9167	0.0229	5.7997	0.9171	6.6821	2.9537	0.8858	3.7655	0.0000	2,107.5621	2,107.5621	0.5396	0.0000	2,117.7034
2020	40.0483	15.6370	13.5775	0.0229	3.1600e-003	0.7969	0.8000	9.8000e-004	0.7697	0.7707	0.0000	2,090.4807	2,090.4807	0.4115	0.0000	2,100.1762
Maximum	**40.0483**	**19.4849**	**13.9167**	**0.0229**	**5.7997**	**0.9171**	**6.6821**	**2.9537**	**0.8858**	**3.7655**	**0.0000**	**2,107.5621**	**2,107.5621**	**0.5396**	**0.0000**	**2,117.7034**

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					
2019	2.3350	19.4849	13.9167	0.0229	2.6099	0.9171	3.4923	1.3292	0.8858	2.1410	0.0000	2,107.5621	2,107.5621	0.5396	0.0000	2,117.7034
2020	40.0483	15.6370	13.5775	0.0229	3.1600e-003	0.7969	0.8000	9.8000e-004	0.7697	0.7707	0.0000	2,090.4807	2,090.4807	0.4115	0.0000	2,100.1762
Maximum	**40.0483**	**19.4849**	**13.9167**	**0.0229**	**2.6099**	**0.9171**	**3.4923**	**1.3292**	**0.8858**	**2.1410**	**0.0000**	**2,107.5621**	**2,107.5621**	**0.5396**	**0.0000**	**2,117.7034**

	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**	**54.97**	**0.00**	**42.63**	**54.98**	**0.00**	**35.81**	**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	0.9546	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334
Energy	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328
Mobile	0.5822	2.8383	6.7118	0.0230	1.9156	0.0194	1.9350	0.5125	0.0181	0.5306		2,336.3674	2,336.3674	0.1235		2,339.4550
Total	**1.5667**	**3.1100**	**6.9546**	**0.0246**	**1.9156**	**0.0401**	**1.9557**	**0.5125**	**0.0388**	**0.5513**		**2,662.2948**	**2,662.2948**	**0.1298**	**5.9700e-003**	**2,667.3212**

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	0.9546	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334
Energy	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328
Mobile	0.5822	2.8383	6.7118	0.0230	1.9156	0.0194	1.9350	0.5125	0.0181	0.5306		2,336.3674	2,336.3674	0.1235		2,339.4550
Total	**1.5667**	**3.1100**	**6.9546**	**0.0246**	**1.9156**	**0.0401**	**1.9557**	**0.5125**	**0.0388**	**0.5513**		**2,662.2948**	**2,662.2948**	**0.1298**	**5.9700e-003**	**2,667.3212**

	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	Site Preparation	Site Preparation	10/15/2019	10/16/2019	5	2	
2	Grading	Grading	10/17/2019	10/22/2019	5	4	
3	Building Construction	Building Construction	10/23/2019	7/28/2020	5	200	
4	Paving	Paving	7/29/2020	8/11/2020	5	10	
5	Architectural Coating	Architectural Coating	8/12/2020	8/25/2020	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0.58

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 63,246; Non-Residential Outdoor: 21,082; Striped Parking Area: 1,536 (Architectural Coating – sqft)

OffRoad Equipment

Hawaiian Gardens Holiday Inn Express LST - South Coast Air Basin, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
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
Site Preparation	3	8.00	0.00	0.00	0.00	0.19	0.19	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	18.00	0.00	0.19	0.19	LD_Mix	HDT_Mix	HHDT
Building Construction	7	34.00	14.00	0.00	0.00	0.19	0.19	LD_Mix	HDT_Mix	HHDT
Paving	5	14.00	0.00	0.00	0.00	0.19	0.19	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	0.00	0.00	0.00	0.19	0.19	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 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					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.7123	19.4821	7.8893	0.0172		0.8824	0.8824		0.8118	0.8118		1,704.918 9	1,704.918 9	0.5394		1,718.404 4
Total	**1.7123**	**19.4821**	**7.8893**	**0.0172**	**5.7996**	**0.8824**	**6.6819**	**2.9537**	**0.8118**	**3.7655**		**1,704.918 9**	**1,704.918 9**	**0.5394**		**1,718.404 4**

3.2 Site Preparation - 2019

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	9.0200e-003	2.8500e-003	0.0415	2.0000e-005	8.0000e-005	5.0000e-005	1.3000e-004	3.0000e-005	5.0000e-005	8.0000e-005		1.8546	1.8546	2.2000e-004		1.8602
Total	**9.0200e-003**	**2.8500e-003**	**0.0415**	**2.0000e-005**	**8.0000e-005**	**5.0000e-005**	**1.3000e-004**	**3.0000e-005**	**5.0000e-005**	**8.0000e-005**		**1.8546**	**1.8546**	**2.2000e-004**		**1.8602**

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					2.6098	0.0000	2.6098	1.3292	0.0000	1.3292			0.0000			0.0000
Off-Road	1.7123	19.4821	7.8893	0.0172		0.8824	0.8824		0.8118	0.8118	0.0000	1,704.9189	1,704.9189	0.5394		1,718.4044
Total	**1.7123**	**19.4821**	**7.8893**	**0.0172**	**2.6098**	**0.8824**	**3.4922**	**1.3292**	**0.8118**	**2.1409**	**0.0000**	**1,704.9189**	**1,704.9189**	**0.5394**		**1,718.4044**

3.2 Site Preparation - 2019

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	9.0200e-003	2.8500e-003	0.0415	2.0000e-005	8.0000e-005	5.0000e-005	1.3000e-004	3.0000e-005	5.0000e-005	8.0000e-005		1.8546	1.8546	2.2000e-004		1.8602
Total	**9.0200e-003**	**2.8500e-003**	**0.0415**	**2.0000e-005**	**8.0000e-005**	**5.0000e-005**	**1.3000e-004**	**3.0000e-005**	**5.0000e-005**	**8.0000e-005**		**1.8546**	**1.8546**	**2.2000e-004**		**1.8602**

3.3 Grading - 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					
Fugitive Dust					4.9182	0.0000	4.9182	2.5262	0.0000	2.5262			0.0000			0.0000
Off-Road	1.4197	16.0357	6.6065	0.0141		0.7365	0.7365		0.6775	0.6775		1,396.3909	1,396.3909	0.4418		1,407.4359
Total	**1.4197**	**16.0357**	**6.6065**	**0.0141**	**4.9182**	**0.7365**	**5.6547**	**2.5262**	**0.6775**	**3.2038**		**1,396.3909**	**1,396.3909**	**0.4418**		**1,407.4359**

3.3 Grading - 2019

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	9.6400e-003	0.4361	0.0776	4.4000e-004	8.4000e-004	4.2000e-004	1.2600e-003	2.4000e-004	4.0000e-004	6.4000e-004		47.2752	47.2752	9.9300e-003		47.5235
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	9.0200e-003	2.8500e-003	0.0415	2.0000e-005	8.0000e-005	5.0000e-005	1.3000e-004	3.0000e-005	5.0000e-005	8.0000e-005		1.8546	1.8546	2.2000e-004		1.8602
Total	**0.0187**	**0.4389**	**0.1191**	**4.6000e-004**	**9.2000e-004**	**4.7000e-004**	**1.3900e-003**	**2.7000e-004**	**4.5000e-004**	**7.2000e-004**		**49.1298**	**49.1298**	**0.0102**		**49.3836**

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					2.2132	0.0000	2.2132	1.1368	0.0000	1.1368			0.0000			0.0000
Off-Road	1.4197	16.0357	6.6065	0.0141		0.7365	0.7365		0.6775	0.6775	0.0000	1,396.3909	1,396.3909	0.4418		1,407.4359
Total	**1.4197**	**16.0357**	**6.6065**	**0.0141**	**2.2132**	**0.7365**	**2.9497**	**1.1368**	**0.6775**	**1.8143**	**0.0000**	**1,396.3909**	**1,396.3909**	**0.4418**		**1,407.4359**

3.3 Grading - 2019

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	9.6400e-003	0.4361	0.0776	4.4000e-004	8.4000e-004	4.2000e-004	1.2600e-003	2.4000e-004	4.0000e-004	6.4000e-004		47.2752	47.2752	9.9300e-003		47.5235
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	9.0200e-003	2.8500e-003	0.0415	2.0000e-005	8.0000e-005	5.0000e-005	1.3000e-004	3.0000e-005	5.0000e-005	8.0000e-005		1.8546	1.8546	2.2000e-004		1.8602
Total	**0.0187**	**0.4389**	**0.1191**	**4.6000e-004**	**9.2000e-004**	**4.7000e-004**	**1.3900e-003**	**2.7000e-004**	**4.5000e-004**	**7.2000e-004**		**49.1298**	**49.1298**	**0.0102**		**49.3836**

3.4 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**

3.4 Building Construction - 2019

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	0.0246	0.8666	0.2534	7.6000e-004	2.8200e-003	1.0700e-003	3.8900e-003	8.5000e-004	1.0200e-003	1.8700e-003		81.6576	81.6576	0.0168		82.0767
Worker	0.0383	0.0121	0.1763	8.0000e-005	3.4000e-004	2.2000e-004	5.6000e-004	1.3000e-004	2.1000e-004	3.4000e-004		7.8821	7.8821	9.4000e-004		7.9057
Total	**0.0629**	**0.8787**	**0.4297**	**8.4000e-004**	**3.1600e-003**	**1.2900e-003**	**4.4500e-003**	**9.8000e-004**	**1.2300e-003**	**2.2100e-003**		**89.5397**	**89.5397**	**0.0177**		**89.9824**

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**

3.4 Building Construction - 2019

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	0.0246	0.8666	0.2534	7.6000e-004	2.8200e-003	1.0700e-003	3.8900e-003	8.5000e-004	1.0200e-003	1.8700e-003		81.6576	81.6576	0.0168		82.0767
Worker	0.0383	0.0121	0.1763	8.0000e-005	3.4000e-004	2.2000e-004	5.6000e-004	1.3000e-004	2.1000e-004	3.4000e-004		7.8821	7.8821	9.4000e-004		7.9057
Total	**0.0629**	**0.8787**	**0.4297**	**8.4000e-004**	**3.1600e-003**	**1.2900e-003**	**4.4500e-003**	**9.8000e-004**	**1.2300e-003**	**2.2100e-003**		**89.5397**	**89.5397**	**0.0177**		**89.9824**

3.4 Building Construction - 2020

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	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688		2,001.1595	2,001.1595	0.3715		2,010.4467
Total	**2.0305**	**14.7882**	**13.1881**	**0.0220**		**0.7960**	**0.7960**		**0.7688**	**0.7688**		**2,001.1595**	**2,001.1595**	**0.3715**		**2,010.4467**

3.4 Building Construction - 2020

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	0.0219	0.8382	0.2320	7.6000e-004	2.8200e-003	7.0000e-004	3.5300e-003	8.5000e-004	6.7000e-004	1.5200e-003		81.6629	81.6629	0.0155		82.0505
Worker	0.0349	0.0106	0.1575	8.0000e-005	3.4000e-004	2.2000e-004	5.5000e-004	1.3000e-004	2.0000e-004	3.3000e-004		7.6583	7.6583	8.2000e-004		7.6789
Total	**0.0568**	**0.8488**	**0.3894**	**8.4000e-004**	**3.1600e-003**	**9.2000e-004**	**4.0800e-003**	**9.8000e-004**	**8.7000e-004**	**1.8500e-003**		**89.3212**	**89.3212**	**0.0163**		**89.7294**

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	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688	0.0000	2,001.1595	2,001.1595	0.3715		2,010.4467
Total	**2.0305**	**14.7882**	**13.1881**	**0.0220**		**0.7960**	**0.7960**		**0.7688**	**0.7688**	**0.0000**	**2,001.1595**	**2,001.1595**	**0.3715**		**2,010.4467**

3.4 Building Construction - 2020

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	0.0219	0.8382	0.2320	7.6000e-004	2.8200e-003	7.0000e-004	3.5300e-003	8.5000e-004	6.7000e-004	1.5200e-003		81.6629	81.6629	0.0155		82.0505
Worker	0.0349	0.0106	0.1575	8.0000e-005	3.4000e-004	2.2000e-004	5.5000e-004	1.3000e-004	2.0000e-004	3.3000e-004		7.6583	7.6583	8.2000e-004		7.6789
Total	**0.0568**	**0.8488**	**0.3894**	**8.4000e-004**	**3.1600e-003**	**9.2000e-004**	**4.0800e-003**	**9.8000e-004**	**8.7000e-004**	**1.8500e-003**		**89.3212**	**89.3212**	**0.0163**		**89.7294**

3.5 Paving - 2020

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	0.8402	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328		1,296.9461	1,296.9461	0.4111		1,307.2246
Paving	0.1520					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9921**	**8.4514**	**8.8758**	**0.0135**		**0.4695**	**0.4695**		**0.4328**	**0.4328**		**1,296.9461**	**1,296.9461**	**0.4111**		**1,307.2246**

3.5 Paving - 2020

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	0.0144	4.3500e-003	0.0649	3.0000e-005	1.4000e-004	9.0000e-005	2.3000e-004	5.0000e-005	8.0000e-005	1.4000e-004		3.1534	3.1534	3.4000e-004		3.1619
Total	**0.0144**	**4.3500e-003**	**0.0649**	**3.0000e-005**	**1.4000e-004**	**9.0000e-005**	**2.3000e-004**	**5.0000e-005**	**8.0000e-005**	**1.4000e-004**		**3.1534**	**3.1534**	**3.4000e-004**		**3.1619**

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	0.8402	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328	0.0000	1,296.9461	1,296.9461	0.4111		1,307.2246
Paving	0.1520					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9921**	**8.4514**	**8.8758**	**0.0135**		**0.4695**	**0.4695**		**0.4328**	**0.4328**	**0.0000**	**1,296.9461**	**1,296.9461**	**0.4111**		**1,307.2246**

3.5 Paving - 2020

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	0.0144	4.3500e-003	0.0649	3.0000e-005	1.4000e-004	9.0000e-005	2.3000e-004	5.0000e-005	8.0000e-005	1.4000e-004		3.1534	3.1534	3.4000e-004		3.1619
Total	**0.0144**	**4.3500e-003**	**0.0649**	**3.0000e-005**	**1.4000e-004**	**9.0000e-005**	**2.3000e-004**	**5.0000e-005**	**8.0000e-005**	**1.4000e-004**		**3.1534**	**3.1534**	**3.4000e-004**		**3.1619**

3.6 Architectural Coating - 2020

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	39.7980					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**40.0401**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

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	8.2000e-003	2.4900e-003	0.0371	2.0000e-005	8.0000e-005	5.0000e-005	1.3000e-004	3.0000e-005	5.0000e-005	8.0000e-005		1.8020	1.8020	1.9000e-004		1.8068
Total	**8.2000e-003**	**2.4900e-003**	**0.0371**	**2.0000e-005**	**8.0000e-005**	**5.0000e-005**	**1.3000e-004**	**3.0000e-005**	**5.0000e-005**	**8.0000e-005**		**1.8020**	**1.8020**	**1.9000e-004**		**1.8068**

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	39.7980					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**40.0401**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

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	8.2000e-003	2.4900e-003	0.0371	2.0000e-005	8.0000e-005	5.0000e-005	1.3000e-004	3.0000e-005	5.0000e-005	8.0000e-005		1.8020	1.8020	1.9000e-004		1.8068
Total	**8.2000e-003**	**2.4900e-003**	**0.0371**	**2.0000e-005**	**8.0000e-005**	**5.0000e-005**	**1.3000e-004**	**3.0000e-005**	**5.0000e-005**	**8.0000e-005**		**1.8020**	**1.8020**	**1.9000e-004**		**1.8068**

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	0.5822	2.8383	6.7118	0.0230	1.9156	0.0194	1.9350	0.5125	0.0181	0.5306		2,336.3674	2,336.3674	0.1235		2,339.4550
Unmitigated	0.5822	2.8383	6.7118	0.0230	1.9156	0.0194	1.9350	0.5125	0.0181	0.5306		2,336.3674	2,336.3674	0.1235		2,339.4550

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Hotel	377.72	377.72	377.72	901,305	901,305
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Total	377.72	377.72	377.72	901,305	901,305

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
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	16.60	8.40	6.90	33.00	48.00	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924
Hotel	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924
Parking Lot	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924
Recreational Swimming Pool	0.551391	0.043400	0.201050	0.120272	0.016162	0.005864	0.021029	0.030512	0.002059	0.001866	0.004766	0.000706	0.000924

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	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328
NaturalGas Unmitigated	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328

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					
City Park	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
Hotel	2770.12	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328
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
Recreational Swimming Pool	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		**0.0299**	**0.2716**	**0.2281**	**1.6300e-003**		**0.0206**	**0.0206**		**0.0206**	**0.0206**		**325.8961**	**325.8961**	**6.2500e-003**	**5.9700e-003**	**327.8328**

5.2 Energy by Land Use - NaturalGas

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					
City Park	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
Hotel	2.77012	0.0299	0.2716	0.2281	1.6300e-003		0.0206	0.0206		0.0206	0.0206		325.8961	325.8961	6.2500e-003	5.9700e-003	327.8328
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
Recreational Swimming Pool	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		**0.0299**	**0.2716**	**0.2281**	**1.6300e-003**		**0.0206**	**0.0206**		**0.0206**	**0.0206**		**325.8961**	**325.8961**	**6.2500e-003**	**5.9700e-003**	**327.8328**

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	0.9546	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334
Unmitigated	0.9546	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334

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	0.1090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8442					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3700e-003	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334
Total	**0.9546**	**1.3000e-004**	**0.0147**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0313**	**0.0313**	**8.0000e-005**		**0.0334**

6.2 Area by SubCategory

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	0.1090					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8442					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3700e-003	1.3000e-004	0.0147	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0313	0.0313	8.0000e-005		0.0334
Total	**0.9546**	**1.3000e-004**	**0.0147**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0313**	**0.0313**	**8.0000e-005**		**0.0334**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B

Noise Assessment Technical Report

NOISE ASSESSMENT TECHNICAL REPORT
for the
Holiday Inn Express Suites Project

Prepared for:

City of Hawaiian Gardens

Community Development Department

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Hawaiian Gardens, California 90716
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NOVEMBER 2019

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Table of Contents

APPENDICES

FIGURES

TABLES

Acronyms and Abbreviations

City	City of Hawaiian Gardens
CNEL	community noise equivalent level
dB	decibel
dBA	A-weighted decibel
FTA	Federal Transit Administration
L_{dn}	day-night sound level
L_{eq}	equivalent sound level
L_{min}	minimum sound level
L_{max}	maximum sound level
L_{xx}	percentile exceeded sound level
RCNM	Roadway Construction Noise Model
RMS	root mean square
VdB	vibration decibels

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1 Introduction

1.1 Purpose

This technical noise report evaluates noise effects of the proposed Holiday Inn Express Suites Project (project) including noise generation potential associated with construction and operation of the project. Noise generation sources from future implementation of the project include traffic, parking lot activities, mechanical equipment, and short-term construction operations.

1.2 Project Location and Description

1.2.1 Location

The project site is located in the southern portion of the City of Hawaiian Gardens (City), which is located in the southeast region of the County of Los Angeles (County). Regionally, the City is bordered by the Los Angeles County cities of Lakewood and Long Beach, and by the Orange County city of Cypress (see Figure 1, Project Location). Locally, the project site is located at the northeast corner of North Norwalk Boulevard and 226th Street. The approximately 1.25-acre site consists of one parcel (Assessor's Parcel Number 7076-0333-910). The address associated with the project is 22434 Norwalk Boulevard Hawaiian Gardens, California 90716. The project site is currently vacant and consists entirely of dirt and grasses. According to the City of Hawaiian Gardens General Plan Land Use Map, the project site is designated as General Commercial (GC) (City of Hawaiian Gardens 2010). The project site is zoned C-4 (General Commercial) (City of Hawaiian Gardens 2011). Single-family residences exist to the east of the project site, adjacent to the project's eastern property boundary; these are the closest noise-sensitive receptors. Single-family residences also exist to the north and south of the project site, on the northern and southern sides of the local streets (Brittain Street and 226th Street, respectively). Further to the northwest and southwest, residences exist along Norwalk Boulevard, as well.

1.2.2 Project Description

The project involves the construction of a four-story, 42,164-square-foot, 71-unit hotel on a vacant, 1.25-acre lot (see Figure 2, Site Plan). As shown in Figure 2, the hotel building would be constructed on the eastern portion of the parcel, and parking, drive aisles, and landscaping would occupy the western portion of the parcel, with a limited amount of parking and a driveway east of the hotel building. Site access would be available via one driveway on Norwalk Boulevard and two driveways on 226th Street.

The first floor would include a lobby area, guest rooms, a meeting room, offices, a bar and lounge, fitness room, multipurpose room, business center, kitchen and breakfast area, public restrooms, laundry room, an outdoor pool and patio, storage areas, a pool equipment room, and a mechanical/electrical room. The second, third, and fourth floors would primarily include guest rooms. However, the third floor would additionally include a storage area adjacent to the elevator lobby.

The roof of the building would be 41 feet, 4 inches, while the maximum building height to the top of the parapet would be 47 feet, -4inches. The proposed building style is modern with smooth trowel finish omega stucco, aluminum and metal elements, aluminum window frames, and glass windows. An existing 6-foot-high block wall along the eastern project boundary would be extended to the north and south to cover the entire length of the eastern project boundary. The wall would be reduced to 3 feet in height at its northern and southern ends.

1.3 Noise Fundamentals and Terminology

Fundamentals of Environmental Noise

Vibrations, traveling as waves through air from a source, exert a force perceived by the human ear as sound. Sound pressure level (referred to as sound level) is measured on a logarithmic scale in decibels (dB) that represent the fluctuation of air pressure above and below atmospheric pressure. Frequency, or pitch, is a physical characteristic of sound and is expressed in units of cycles per second or hertz. The normal frequency range of hearing for most people extends from about 20 to 20,000 hertz. The human ear is more sensitive to middle and high frequencies, especially when the noise levels are quieter. As noise levels get louder, the human ear starts to hear the frequency spectrum more evenly. To accommodate for this phenomenon, a weighting system to evaluate how loud a noise level is to a human was developed. The frequency weighting called "A" weighting is typically used for quieter noise levels which de-emphasizes the low frequency components of the sound in a manner similar to the response of a human ear. This A-weighted sound level is called the "noise level" and is referenced in units of dBA.

Since sound is measured on a logarithmic scale, a doubling of sound energy results in a 3-dBA increase in the noise level. Changes in a community noise level of less than 3 dBA are not typically noticed by the human ear (Caltrans 2013a). Changes from 3 dBA to 5 dBA may be noticed by some individuals who are extremely sensitive to changes in noise. A 5-dBA increase is readily noticeable (EPA 1971). The human ear perceives a 10-dBA increase in sound level as a doubling of the sound level (i.e., 65 dBA sounds twice as loud as 55 dBA to a human ear).

An individual's noise exposure occurs over a period of time; however, noise level is a measure of noise at a given instant in time. Community noise sources vary continuously, being the product of many noise sources at various distances, all of which constitute a relatively stable background or ambient noise environment. The background, or ambient, noise level gradually changes throughout a typical day, corresponding to distant noise sources, such as traffic volume, as well as changes in atmospheric conditions.

Noise levels are generally higher during the daytime and early evening when traffic (including airplanes), commercial, and industrial activity is the greatest. However, noise sources experienced during nighttime hours when background levels are generally lower can be potentially more conspicuous and irritating to the receiver. In order to evaluate noise in a way that considers periodic fluctuations experienced throughout the day and night, a concept termed "community noise equivalent level" (CNEL) was developed, wherein noise measurements are weighted, added, and averaged over a 24-hour period to reflect magnitude, duration, frequency, and time of occurrence. A complete definition of CNEL is provided below.

Different types of measurements are used to characterize the time-varying nature of sound. These measurements include the equivalent sound level (L_{eq}), the minimum and maximum sound levels (L_{min} and L_{max}), percentile-exceeded sound levels (L_{xx}), the day–night sound level (L_{dn}), and CNEL. Below are brief definitions of these and other noise terminology used in this report.

- *Decibel* (dB) is a unitless measure of sound on a logarithmic scale that indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micropascals.

- *A-weighted decibel* (dBA) is an overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- *Equivalent sound level* (L_{eq}) is the constant level that, over a given time period, transmits the same amount of acoustic energy as the actual time-varying sound. Equivalent sound levels are the basis for both the day–night average sound levels (L_{dn}) and community noise equivalent level (CNEL) scales.
- *Maximum sound level* (L_{max}) is the maximum sound level measured during the measurement period.
- *Minimum sound level* (L_{min}) is the minimum sound level measured during the measurement period.
- *Percentile-exceeded sound level* (L_{xx}) is the sound level exceeded x percent of a specific time period. L_{10} is the sound level exceeded 10% of the time.
- *Day–night average sound level* (L_{dn}). The L_{dn} is a 24-hour average A-weighted sound level with a 10 dB penalty added to the nighttime hours from 10:00 p.m. to 7:00 a.m. The 10-dB penalty is applied to account for increased noise sensitivity during the nighttime hours. This metric is similar to CNEL (see definition below); resulting values from application of L_{dn} versus CNEL rarely differ by more than 1 dB, and therefore, these two methods of describing average noise levels are often considered interchangeable.
- *Community noise equivalent level* (CNEL). The CNEL is the average equivalent A-weighted sound level during a 24-hour day. CNEL accounts for the increased noise sensitivity during the evening hours (7:00 p.m. to 10:00 p.m.) and nighttime hours (10:00 p.m. to 7:00 a.m.) by adding 5 dB to the sound levels in the evening and 10 dB to the sound levels at night. CNEL and L_{dn} are often considered equivalent descriptors.

Community Response to Noise

Community responses to noise may range from registering a complaint by telephone or letter/email, to initiating court action, depending on a person's susceptibility to noise and personal attitudes about noise. Several factors are related to the level of community annoyance with noise (EPA 1971):

- Fear associated with noise-producing activities
- Socioeconomic status and educational level
- Perception that those affected are being unfairly treated
- Attitudes regarding the usefulness of the noise-producing activity
- Belief that the noise source can be controlled

Approximately 10% of the population has a very low tolerance for noise and will object to any noise not of their making. Consequently, even in the quietest environment, some complaints will occur. Another 25% of the population will not complain even in very severe noise environments. Thus, a variety of reactions can be expected from people exposed to any given noise environment (EPA 1971). Surveys have shown that approximately 10% of people exposed to traffic noise of 60 dBA will report being highly annoyed with the noise, and each increase of 1 dBA is associated with approximately 2% more people being highly annoyed. When traffic noise exceeds 60 dBA or aircraft noise exceeds 55 dBA, people may begin to complain (EPA 1971). Despite this variability in behavior on an individual level, the population can be expected to exhibit the following responses to changes in noise levels: an increase or decrease of 1 dBA cannot be perceived except in carefully controlled laboratory experiments; a change of 3 dBA is considered barely perceptible; and changes of 5 dBA or more are considered readily perceptible (FHWA 1995).

Exterior Noise Distance Attenuation

Noise sources are classified in two forms: (1) point sources, such as stationary equipment or a group of construction vehicles and equipment working within a spatially limited area at a given time; and (2) line sources, such as a roadway with a large number of pass-by sources (motor vehicles). Sound generated by a point source typically diminishes (attenuates) at a rate of 6.0 dBA for each doubling of distance from the source to the receptor at acoustically “hard” sites and at a rate of 7.5 dBA for each doubling of distance from source to receptor at acoustically “soft” sites. Sound generated by a line source (i.e., a roadway) typically attenuates at a rate of 3 dBA and 4.5 dBA per doubling distance, for hard and soft sites, respectively. Sound levels can also be attenuated by man-made or natural barriers.

For the purpose of sound attenuation discussion, a “hard” or reflective site does not provide any excess ground-effect attenuation and is characteristic of asphalt or concrete ground surfaces, as well as very hard-packed soils. An acoustically “soft” or absorptive site is characteristic of unpaved loose soil or vegetated ground.

Structural Noise Attenuation

Sound levels can also be attenuated by man-made or natural barriers. Solid walls or slopes associated with elevation differences typically reduce noise levels by 5 dBA to 10 dBA (Caltrans 2013a). Structures can also provide noise reduction by insulating interior spaces from outdoor noise. The outside-to-inside noise attenuation provided by typical structures in California ranges between 17 dBA to 30 dBA with open and closed windows, respectively, as shown in Table 1.

Table 1. Outside-to-Inside Noise Attenuation (dBA)

Building Type	Open Windows	Closed Windows[a]
Residences	17	25
Schools	17	25
Churches	20	30
Hospitals/Offices/Hotels	17	25
Theaters	17	25

Source: TRB NRC 1971.
Note:
[a] As shown, structures with closed windows can attenuate exterior noise by a minimum of 25 dBA to 30 dBA.

Fundamentals of Vibration

Vibration is an oscillatory motion that can be described in terms of displacement, velocity, or acceleration. The response of humans to vibration is very complex. However, it is generally accepted that human response is best approximated by the vibration velocity level associated with the vibration occurrence.

Heavy equipment operation, including stationary equipment that produces substantial oscillation or construction equipment that causes percussive action against the ground surface, may be perceived by building occupants as perceptible vibration. It is also common for ground-borne vibration to cause windows, pictures on walls, or items on shelves to rattle. Although the perceived vibration from such equipment operation can be intrusive to building occupants, the vibration is seldom of sufficient magnitude to cause even minor cosmetic damage to buildings.

When evaluating human response, ground-borne vibration is usually expressed in terms of root mean square (RMS) vibration velocity. RMS is defined as the average of the squared amplitude of the vibration signal. As for sound, it is common to express vibration amplitudes in terms of decibels defined as:

$$L_v = 20\log\left(\frac{v_{rms}}{v_{ref}}\right)$$

where vrms is the RMS vibration velocity amplitude in inches/second and vref is the decibel reference of $1x10^{-6}$ inches/second.

To avoid confusion with sound decibels, the abbreviation VdB is used for vibration decibels. The vibration threshold of perception for most people is around 65 VdB. Vibration levels in the 70 VdB to 75 VdB range are often noticeable but generally deemed acceptable, and levels in excess of 80 VdB are often considered unacceptable (FTA 2018).

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2 Noise Regulation and Management

2.1 Federal

Federal Transit Administration and Federal Railroad Administration Standards

Although the Federal Transit Administration (FTA) standards are intended for federally funded mass transit projects, the impact assessment procedures and criteria included in the FTA Transit Noise and Vibration Impact Assessment Manual (September 2018) are routinely used for projects proposed by local jurisdictions. The FTA and Federal Railroad Administration have published guidelines for assessing the impacts of ground-borne vibration associated with rail projects, which have been applied by other jurisdictions to other types of projects. The FTA measure of the threshold of architectural damage for conventional sensitive structures is 0.2 inch/second peak particle velocity.

2.2 State

California Noise Control Act of 1973

Sections 46000 through 46080 of the California Health and Safety Code, known as the California Noise Control Act of 1973, declares that excessive noise is a serious hazard to the public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also identifies a continuous and increasing bombardment of noise in the urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the state to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

California Green Building Standards Code

The 2016 California Green Building Standards Code contains mandatory measures for nonresidential building construction in Section 5.507, Environmental Comfort (24 CCR Part 11). These standards are applied to new construction in California for controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when nonresidential structures are developed in areas where the exterior noise levels currently exceed 65 dBA CNEL, such as within a noise contour of an airport, freeway, railroad, or other area where noise contours are not readily available. If the development falls within an airport or freeway 65 dBA CNEL noise contour, the combined sound transmission class rating of the wall and roof-ceiling assemblies must be at least 50. For developments in areas where noise contours are not readily available and the noise level exceeds 65 dBA L_{eq} for any hour of operation, a wall and roof-ceiling combined sound transmission class rating of 45 and exterior windows with a minimum sound transmission class rating of 40 are required (California Green Building Standards Code Section 5.507.4.1).

2.3 Local

The City outlines its noise regulations and standards in the City of Hawaiian Gardens General Plan Noise Element (City of Hawaiian Gardens 2010) and the Hawaiian Gardens Municipal Code (City of Hawaiian Gardens 2018).

For the purposes of this analysis, the General Plan Noise Element is used to evaluate the roadway noise impacts to and from the project. The Noise Element includes a Land Use/Noise Compatibility Guidelines matrix (Table 6-4 of the Noise Element) based on land use, identifying noise level ranges that are "Normally Acceptable," "Conditionally Acceptable," "Normally Unacceptable," and "Clearly Unacceptable," depending on the land use type. For commercial uses such as the project, the matrix shows that noise exposure up to 70 dBA CNEL is "Normally Acceptable," and up to 80 dBA CNEL is "Conditionally Acceptable." For residential uses, including those in the surrounding project area, noise exposure up to 60 dBA CNEL and 65 dBA CNEL (for single-family and high-density residential, respectively) is "Normally Acceptable," and up to 70 dBA CNEL (for both single-family and high-density residential) is "Conditionally Acceptable."

2.3.1 Traffic Noise Regulation

The City's noise standards for residential development require that noise-sensitive uses proposed to be located in areas with noise levels of 60 dBA CNEL or greater (for single-family residential) and 65 dBA CNEL or greater (for high-density residential) shall be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design (City of Hawaiian Gardens 2010).

2.3.2 Stationary Noise Regulation

The City outlines stationary noise limits in Chapter 9.29 of the Hawaiian Gardens Municipal Code (Section 8.12.050A; City of Hawaiian Gardens 2018).

9.29.050 Designated noise zones.

A. The properties hereinafter described, whether within or without the city, are assigned to the following noise zones:

Noise Zone 1:	All residential properties;
Noise Zone 2:	All public and quasi-public institutional properties;
Noise Zone 3:	All commercial properties;
Noise Zone 4:	All industrial properties.

B. Where more than one use is located on a property, the noise zone assigned to the property shall be the noise zone with the more restrictive noise levels.

C. Where a property is vacant, the property shall be located in the noise zone which reflects its underlying zoning district, as shown on the most recent city zoning map. The following table shall apply to all vacant land in the city, as it relates to noise zones:

Noise Zones for Vacant Land	
Zoning District	***Noise Zone***
A-1, R-1, R-2, R-3, R-4 & MHP	Noise Zone 1
POL	Noise Zone 2
C-4	Noise Zone 3
M-1	Noise Zone 4

9.29.060 Exterior noise standards.

A. The following noise standards, unless otherwise specifically indicated, shall apply to all real property within a designated noise zone:

Exterior Noise Level Standards		
Noise Zone	*Noise Level*	*Time Period*
1	60 dB (A)	7:00 a.m.–10:00 p.m.
1	55 dB (A)	10:00 p.m.–7:00 a.m.
2	60 dB (A)	Anytime
3	75 dB (A)	Anytime
4	75 dB (A)	Anytime

B. In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five dB(A).

9.29.070 Exterior noise levels prohibited.

A. It is unlawful for any person at any location within the city to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, which causes the noise level when measured on any residential, public or quasi-public institutional, commercial or industrial property, either within or without the city, to exceed the applicable noise standards:

1. For a cumulative period of more than thirty minutes in any hour;
2. Plus five dB(A) for a cumulative period of more than fifteen minutes in any hour;
3. Plus ten dB(A) for a cumulative period of more than five minutes in any hour;
4. Plus fifteen dB(A) for a cumulative period of more than one minute in any hour; or
5. Plus twenty dB(A) for any period of time.

B. In the event the ambient noise level exceeds any of the first four noise limit categories above, the cumulative period applicable to said categories shall be increased to reflect said ambient noise level in the event that ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said categories shall be increased to reflect the maximum ambient noise level.

9.29.080 Interior noise standards.

A. The following noise standards, unless otherwise specifically indicated, shall apply to all real property within a designated noise zone:

Interior Noise Level Standards		
Noise Zone	*Noise Level*	*Time Period*
1	55 dB (A)	7:00 a.m.–10:00 p.m.
1	45 dB (A)	10:00 p.m.–7:00 a.m.
2, 3, 4	45 dB(A)	Anytime

B. In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five dB(A).

9.29.090 Interior levels of noise prohibited.

A. it is unlawful for any person at any location within the city to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, which causes the noise level when measured within any other structure on any residential, public institutional, commercial, or industrial property to exceed:
   1. The noise standard for a cumulative period of more than five minutes in any hour;
   2. The noise standards plus five dB(A) for a cumulative period of more than one minute in any hour; or
   3. The noise standard plus ten dB(A) for any period of time.

B. In the event the ambient noise level exceeds either of the first two noise limit categories above, the cumulative period applicable to said categories shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the third noise level, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

C. In the event that the noise source and the affected property are within different noise zones, the noise standards of the affected property shall apply.

2.3.3 Construction Noise Regulation

Pursuant to Section 9.29.100(D) of the Hawaiian Gardens Municipal Code, construction noise is exempt from the City's noise ordinance standards, provided that construction activities take place within prescribed daytime hours: "Noise sources associated with construction, repair, remodeling, or grading of any real property; provided a permit has been obtained from the city; and provided said activities shall take place between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday, with no construction shall be permitted on Sunday."

3 Existing Noise Conditions

3.1 Transportation Noise

Ambient Noise Monitoring

In an urban setting, roadways are typically a principal contributor to the ambient noise environment. As such, the evaluation of roadway noise is important in characterizing the overall existing noise conditions for an urban site. The methodology generally includes a short-term noise measurement along an unobstructed segment of each roadway of concern, accompanied by manual traffic counts; this collected data is used to calibrate traffic noise modelling software for the quantification of existing and future traffic noise levels for roadways in the project vicinity. The project would be located at the northeast corner of North Norwalk Boulevard and 226th Street. Vehicle traffic associated with the project would primarily use North Norwalk Boulevard to access the site.

As part of this assessment, attended noise measurements with manual traffic counts were conducted on August 27, 2019, at noise-sensitive land uses adjacent to and in the vicinity of the project site. These measurements were intended to determine the existing noise levels in the project vicinity near noise-sensitive land uses, resulting from traffic or from other sources. The measurements were made using a calibrated SoftdB Piccolo integrating sound level meter. The sound level meter meets the current American National Standards Institute standard for a Type 2 (general use) sound level meter. The sound level meter was positioned at a height of approximately 5 feet above the ground.

The noise measurement locations are depicted as ST1 through ST5 (short-term) on Figure 3. As shown in Table 2, the measured short-term average noise levels ranged from approximately 60 dBA L_{eq} at ST2 and ST3 to 70 dBA L_{eq} at ST4 and ST5. The primary noise source was traffic on the local roadways. Appendix A contains the field data forms with complete sound level measurement results for the measurement locations.

Table 2. Measured Short-Term Sound Levels and Traffic Counts

Site	Description	Date/Time	L_{eq}[1]	L_{max}[2]	Cars	MT[3]	HT[4]	B[5]	MC[6]
ST1	8110 226th Street (Residential)	8/27/2019 9:27 a.m. to 9:42 a.m.	62.7 dBA	84.5 dBA	21	1	0	1	0
ST2	12228 Brittain Street (Residential)	8/27/2019 9:48 a.m. to 10:03 a.m.	59.7 dBA	76.1 dBA	6	0	0	0	0
ST3	12215 Brittain Street (Residential)	8/27/2019 10:07 a.m. to 10:22 a.m.	60.2 dBA	72.3 dBA	6	0	0	0	0
ST4	22307 Norwalk Boulevard (Residential)	8/27/2019 10:38 a.m. to 10:53 a.m.	70.3 dBA	84.1 dBA	201	2	0	2	0
ST5	8075 East Ring Street (Residential)	8/27/2019 11:20 a.m. to 11:35 a.m.	70.4 dBA	80.3 dBA	194	3	0	1	0

Source: Appendix A.
Notes:
1 Equivalent continuous sound level (time-average sound level)
2 Maximum sound level
3 Medium trucks
4 Heavy trucks
5 Buses
6 Motorcycles

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4 Significance Criteria

Based on the criteria identified in Appendix G of the California Environmental Quality Act Guidelines, the project would have a significant impact on noise if it would result in:

1. The generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
2. The generation of excessive groundborne vibration or groundborne noise levels.
3. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, the project would expose people residing or working in the project area to excessive noise levels.

With regards to Significance Criteria 3, the project site is located approximately 2.5 miles northwest of Joint Training Forces Base Los Alamitos (ONT), and approximately 4 miles northeast of Long Beach Airport. The project site is not located within the Airport Influence Areas of either of these airports, and thus would not expose people residing or working in the project area to excessive noise levels from the airports. Therefore, this is considered to be no impact and is not addressed further. The remaining significance criteria issues are addressed below.

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5 Impacts and Mitigation

Potential impacts associated with the project includes noise and vibration from project construction, traffic noise associated with project-related trips during operation, and operational noise from on-site mechanical equipment, parking lot noise, and recreational noise. Each of these are addressed below.

5.1 Construction Noise

Construction of the 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. This section of the report discusses the noise levels calculated to result from construction of the project, at nearby sensitive receptors (i.e., residences).

5.1.1 Construction - Equipment Inventory

The California Air Resources Board California Emissions Evaluation Model (CalEEMod) was used to identify the construction equipment anticipated for development of the project. Based on this information, CalEEMod identified the anticipated equipment for each phase of project construction, listed in Table 3.

Table 3. Construction Equipment by Phase

Construction Phase	Equipment	Quantity
Site Preparation	Graders	1
	Rubber-tired dozers	1
	Tractors/loaders/backhoes	1
Grading	Graders	1
	Rubber-tired dozers	1
	Tractors/loaders/backhoes	1
Building Construction	Cranes	1
	Forklifts	1
	Generator sets	1
	Tractors/loaders/backhoes	1
	Welders	3
Paving	Cement and mortar mixers	1
	Pavers	1
	Paving equipment	1
	Rollers	1
	Tractors/loaders/backhoes	1
Architectural Coating	Air compressors	1

Source: Dudek 2019 (Air Quality and Greenhouse Gas Analysis Technical Report).

5.1.2 Construction Noise Assessment

With the construction equipment noise sources identified in Table 3, a noise analysis was performed using the Federal Highway Administration's Roadway Construction Noise Model (RCNM) (FHWA 2008). Input variables for

RCNM consist of the receiver/land use types, the equipment type (e.g., backhoe, grader, scraper), 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. The RCNM has default duty cycle values for the various pieces of equipment, which were derived from an extensive study of typical construction activity patterns. Those default duty cycle values were utilized for this analysis. Refer to Appendix B for the inputs used in the RCNM model and the detailed results.

Sensitive receptors near the project site include residential uses immediately to the east, as well as residences to the north and south, across from Brittain Street and 226th Street, respectively. The results of the construction noise analysis using the RCNM are summarized in Table 4. As shown, the highest noise levels from construction are predicted to range from approximately 68 dBA L_{eq} (during the architectural coating phase) to 86 dBA L_{eq} (during the site preparation and grading phases) at the nearest noise-sensitive receivers (single-family residences on the eastern side) when construction takes place at or adjacent to the eastern project boundary. More typically, when construction would take place throughout the project site, construction noise levels would range from approximately 62 dBA L_{eq} (during the architectural coating phase) to 79 dBA L_{eq} (during the site preparation phase) at the nearest noise-sensitive receivers.

These noise levels would be higher than ambient noise levels in the area (as shown in Table 2). Therefore, mitigation (provided below in Section 4.1.2 as MM-NOI-1) would be required to avoid potentially significant short-term construction noise impacts.

Table 4. Construction Noise Analysis Summary

Construction Phase	Construction Noise at Representative Receiver Distances (L_{eq} (dBA))	
	Nearest Source/Receiver Distance (Approx. 15 feet)[1]	*Typical Source/Receiver Distance (Approx. 50 feet)*[2]
Site Preparation	86	79
Grading	86	77
Building Construction	71	69
Paving	81	75
Architectural Coating	68	62

Source: Appendix B.
Notes: Leq = equivalent continuous sound level (time-averaged sound level); dBA = A-weighted decibel.
1 The exception is for the building construction phase, for which the nearest source/receiver distance is approximately 50 feet.
2 The exception is for the building construction phase, for which the typical source/receiver distance is approximately 100 feet.

5.1.3 Mitigation Measures

MM-NOI-1. The following guidelines shall be implemented to reduce noise impacts to sensitive receivers during construction of the project:.

- Noise-generating construction activities (which may include preparation for construction work) shall be not occur on weekdays and Saturdays between 7:00 p.m. and 7:00 a.m., and shall not occur on Sundays or on federal holidays.
- 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.

- Prior to the commencement of construction, a temporary construction noise barrier shall be erected along the project site's entire eastern boundary. The barrier shall be seven to eight feet in height, have a surface density of at least four pounds per square foot[1], and be free of openings, gaps and cracks (with the exception of expansion joints), including at the base of the barrier[2].
- 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.
- Stationary equipment shall be placed so as to maintain the greatest possible distance to the sensitive use structures.
- All equipment servicing shall be performed so as to maintain the greatest possible distance to the sensitive use structures.
- Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow surrounding property owners to contact the job superintendent if necessary. In the event the City receives a complaint, appropriate corrective actions shall be implemented and a report of the action provided to the reporting party.

Significance after Mitigation

The above mitigation measure would minimize noise levels from construction activities at residences in the immediate vicinity of the project site. Given that construction is a temporary, short-term impact, and that the noise ordinance does not contain a specific noise limit for construction activities, this mitigation would reduce construction noise impacts to less than significant.

5.2 Traffic Noise

5.2.1 Impact Analysis

The project would generate traffic along adjacent roadways, in particular North Norwalk Boulevard. Potential noise effects from vehicular traffic were assessed using the Federal Highway Administration's Traffic Noise Model version 2.5 (FHWA 2004). Information used in the model included the site geometry, existing (Year 2019), existing (Year 2019) plus project, future (Year 2021) without project, and future (Year 2021) with project traffic volumes (provided in the project's Traffic Impact Study, Crown City Engineers 2019) and posted traffic speeds. Noise levels were modeled at representative noise-sensitive receivers. The noise model results are summarized in Table 5 (Traffic Noise Modeling Results). The input and output files for the project are provided in Appendix C. The City does not have a specific noise criterion for evaluating off-site noise impacts to residences or noise-sensitive areas from project-related traffic. For the purposes of this noise analysis, such impacts are considered significant when they

[1] Or alternatively have a certified Sound Transmission Class (STC) rating of 30 dB or greater.
[2] Such a barrier may be constructed in the field from a "sandwich" of two ¾" thick (minimum) plywood sheets framed with 2 by 4s with fiberglass insulation in between, for example. Commercially-available temporary construction noise barriers (i.e., quilted "curtains" or matts) may be purchased or leased from a variety of sources, and hung or secured in place.

cause an increase of 5 dB from existing noise levels or result in an exceedance of the 60 dBA CNEL (for single-family) or 65 dBA CNEL (for multifamily) noise threshold. An increase or decrease in noise level of at least 5 dB is required before any noticeable change in community response would be expected (Caltrans 2013a).

Table 5. Traffic Noise Modeling Results

Modeled Receptor	Existing (2019) Noise Level (dBA CNEL)	Existing (2019) with Project Noise Level (dBA CNEL)	Buildout (2021) without Project Noise Level (dBA CNEL)	Buildout (2021) with Project Noise Level (dBA CNEL)	Maximum Noise Level Increase (dB)
ST1	61	61	61	61	0
ST2	55	55	55	55	0
ST3	61	61	61	61	0
ST4	70	70	70	70	0
ST5	68	68	69	69	0

Source: Appendix C.

Table 5 shows that the maximum noise level increase would be 0 dB, when rounded to whole numbers. A change in noise level of less than 3 dB is not an audible change, in the context of community noise. Additionally, additional traffic from the project would not cause existing noise levels at nearby noise-sensitive receivers to exceed either the 60 dBA CNEL (for single-family residences) or the 65 dBA CNEL (for multifamily residences) noise standard. Based upon these results, traffic noise impacts would be less than significant. No mitigation is required.

5.2.2 Mitigation Measures

The project would not result in a significant traffic noise impact; therefore, no mitigation is required.

Significance after Mitigation

Mitigation is not required because impacts would be less than significant.

5.3 Operations Noise Generation

5.3.1 Impact Analysis

Implementation of the project would also result in changes to existing noise levels on the project site by developing new stationary sources of noise, including the introduction of outdoor HVAC equipment, pool and patio activities, and vehicle parking lot activities. These sources may affect noise-sensitive vicinity land uses off the project site.

The project would include 64 on-site parking stalls for hotel guests and staff. Noise sources from parking lots include car alarms, door slams, radios, and tire squeals. These sources typically range from about 30 dBA to 66 dBA at a distance of 100 feet (Gordon Bricken & Associates 2010), and are generally short-term and intermittent. Parking lots have the potential to generate instantaneous noise levels that exceed 60 dBA depending on the location of the source; however, noise sources from the parking lot would be different from each other in kind, duration, and location, so that the overall effects would be separate and in most cases would not affect noise-sensitive receptors at the same time. Therefore, noise generated from parking lots would be **less than significant**. No mitigation is required.

The project has the potential to generate noise from HVAC equipment, as well as other mechanical equipment including pool pumps and (potentially) a trash compactor and emergency generator. The specific details (location, size, manufacturer, and model) of such equipment have not yet been determined. For a single point source such as a piece of mechanical equipment, the sound level normally decreases by approximately 6 dBA for each doubling of distance from the source under “hard-surface” conditions typical of a developed commercial site. Mechanical equipment noise levels could exceed the City’s noise standards (55 dBA L_{eq} daytime and 45 dBA L_{eq} nighttime) for stationary-source noise at the residential uses to the north, east, and south of the project site. This is a potentially significant impact. Implementation of mitigation measure MM-NOI-2 would reduce noise impacts from HVAC and other mechanical equipment to a less-than-significant level.

Proposed recreational facilities within the project site would include a pool and patio area, which would be located on the eastern side of the proposed hotel building. During daytime and evening hours, noise from most of these uses would not be disruptive, because ambient noise levels are higher during these hours, and typical activities in the daytime and evening are less prone to disruption by noise. Additionally, loud amplified music would not be permitted, and the noise exposure to the nearest residences (located to the east) would be reduced by the construction of a 6-foot-high boundary wall. However, at night, pool noise could be loud enough to disrupt sleep and other activities at adjacent on-site and neighboring off-site residences. . This is a potentially significant impact. Implementation of mitigation measure MM-NOI-3 would reduce noise impacts from recreational noise to a less-than-significant level.

5.3.2 Mitigation Measures

MM-NOI-2 Because HVAC equipment and other mechanical equipment can generate noise that could affect surrounding sensitive receptors and because the details, specifications, and locations of this equipment is not yet known, the project applicant shall retain an acoustical specialist to review project construction-level plans to ensure that the equipment specifications and plans for HVAC and other outdoor mechanical equipment incorporate measures, such as the specification of quieter equipment or provision of acoustical enclosures, that will not exceed relevant noise standards at nearby noise-sensitive land uses (e.g., residential). Prior to the commencement of construction, the acoustical specialist shall certify in writing to the City that the equipment specifications and plans incorporate measures that will achieve the relevant noise limits.

MM-NOI-3 Prior to certificate of occupancy, signs shall be posted at the planned pool and patio areas prohibiting noisy activities between the hours of 10:00 p.m. and 7:00 a.m.

5.4 Ground-borne Vibration

5.4.1 Impact Analysis

The main concern associated with ground-borne vibration is annoyance; however, in extreme cases, vibration can cause damage to buildings, particularly those that are old or otherwise fragile. Some common sources of ground-borne vibration are trains, and construction activities such as blasting, pile-driving, and heavy earth-moving equipment. The primary source of ground-borne vibration occurring as part of the project is construction activity.

Ground-borne vibration information related to construction activities has been collected by Caltrans (Caltrans 2013b). Information from Caltrans indicates that continuous vibrations with a peak particle velocity of approximately 0.1 inches per second begin to annoy people. The heavier pieces of construction equipment, such as bulldozers, would have peak particle velocities of approximately 0.089 inches per second or less at a distance of 25 feet (FTA 2018). Ground-borne vibration is typically attenuated over short distances. At the distance from the nearest vibration-sensitive receivers (residences located to the east) to where construction activity would be occurring on the project site (approximately 15 feet), and with the anticipated construction equipment, the peak particle velocity vibration level would be as high as approximately 0.192 inches per second. At the closest sensitive receptors, vibration levels would thus exceed the vibration threshold of potential annoyance of 0.1 inches/second; therefore, impacts associated with vibration-generated annoyance would be potentially significant. However, implementation of mitigation measure MM-NOI-1 would ensure that residences are notified of construction activities and provided contact information in the event they wish to report a noise- or vibration-related complaint. This would result in a less-than-significant impact.

The major concern with regards to construction vibration is related to building damage, which typically occurs at vibration levels of 0.5 inches per second or greater for buildings of reinforced-concrete, steel, or timber construction. As discussed above, the highest anticipated vibration levels associated with on-site project construction would be approximately 0.192 inches per second, which are below the threshold of 0.5 inches per second for building damage. Therefore, impacts associated with vibration-produced damage would be less than significant.

5.4.2 Mitigation Measures

The project would not result in a significant ground-borne vibration impact; therefore, no mitigation is required.

Significance after Mitigation

Mitigation is not required because impacts would be less than significant.

6 References

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Gordon Bricken & Associates. 2010. *Community Memorial Hospital District Development Code Recirculated Draft Environmental Impact Report (City of Ventura).* Section 4.4, Noise.

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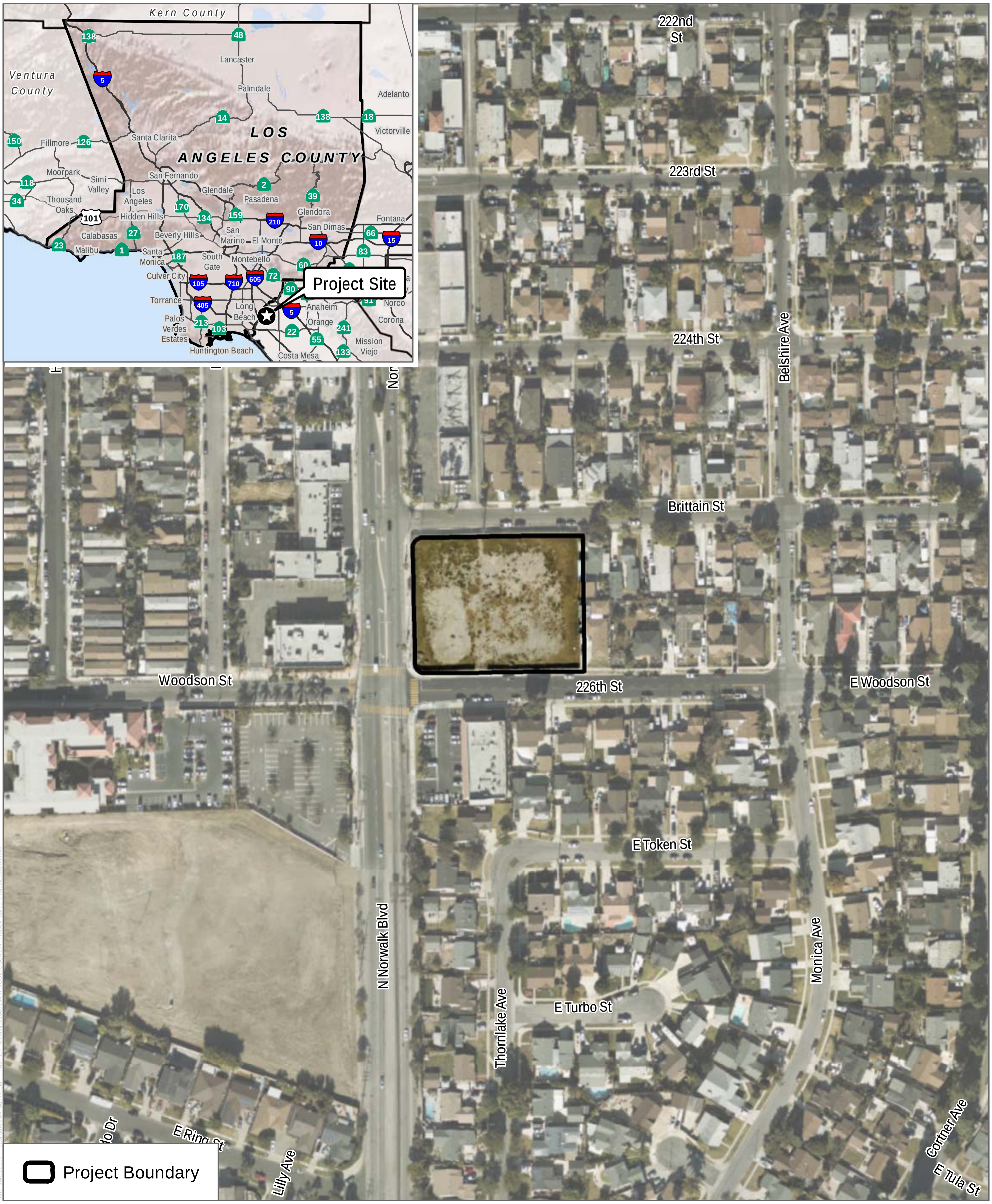

SOURCE: ESRI: 2018

0 100 200 Feet
0 25 50 Meters
1:2,400

DUDEK

FIGURE 1

Project Location

Holiday Inn Express Suites Project

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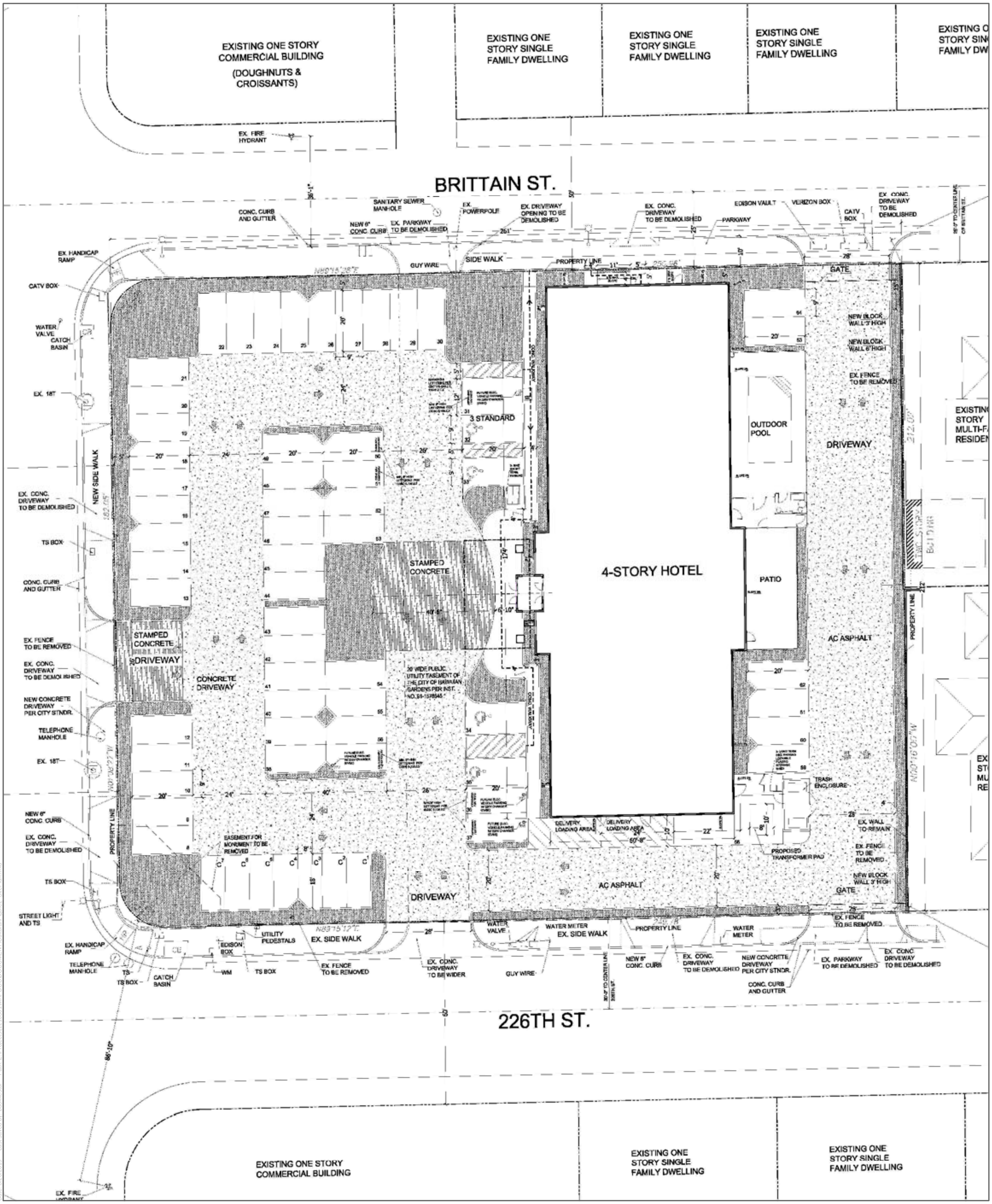

SOURCE: APEX DESIGNS LLC 2019

DUDEK

0 20 40 Feet
0 5 10 Meters
1:505

FIGURE 2
Site Plan
Holiday Inn Express Suites Project

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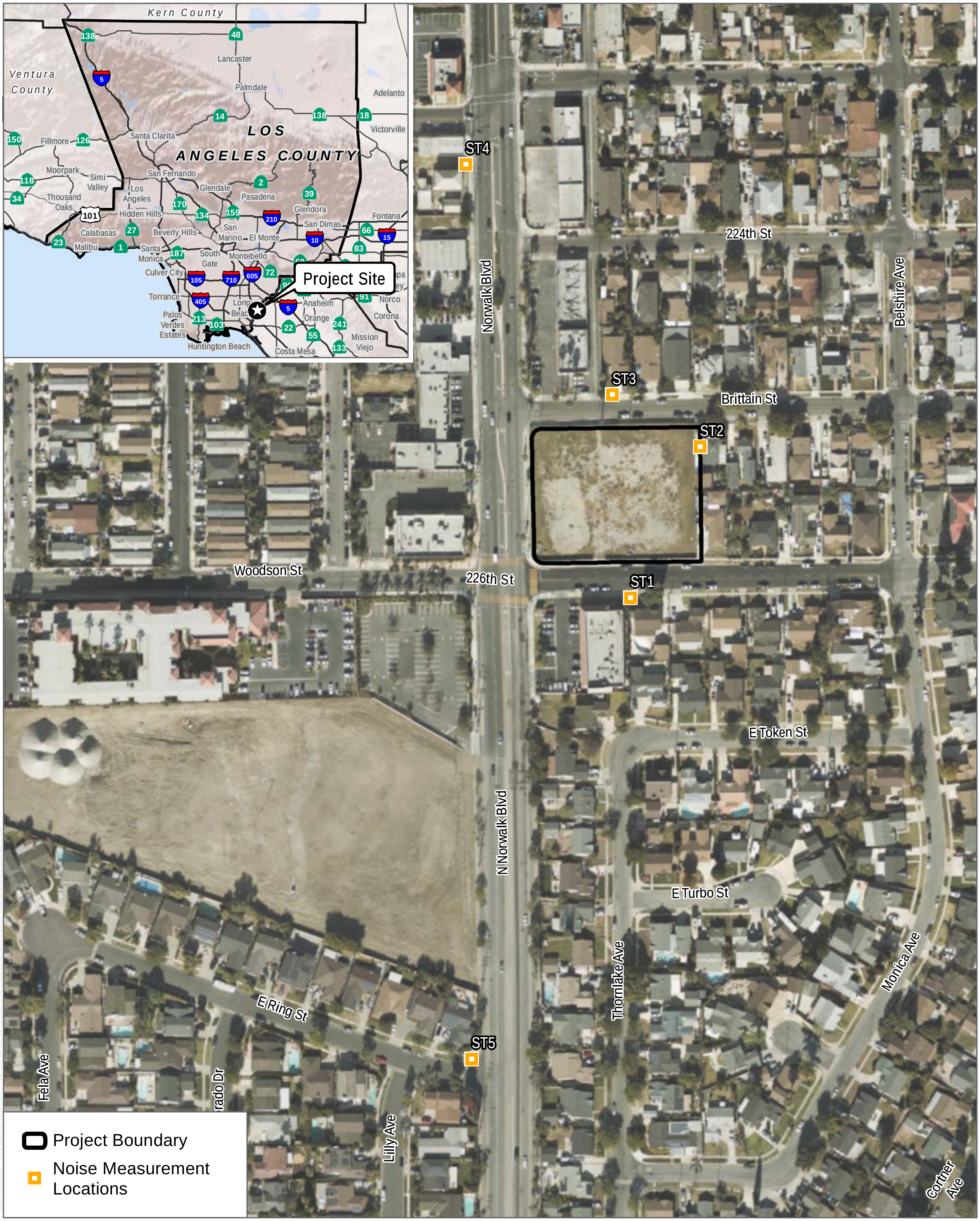

SOURCE: ESRI 2018

DUDEK

FIGURE 3

Noise Measurement Locations

Holiday Inn Express Suites Project

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Appendix A

Field Noise Measurement Data

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT HAWAIIAN GARDENS HOLIDAY INN PROJECT # 12103
SITE ID
OBSERVER(S) PETE VITAR
SITE ADDRESS
START DATE 8/27/19 END DATE 8/27/19
START TIME END TIME

METEOROLOGICAL CONDITIONS
TEMP 73 F HUMIDITY 73 % R.H. WIND CALM LIGHT MODERATE
WINDSPD MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY
SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT PICCOLO SLM-3 TYPE 1 2 SERIAL # MO317004
CALIBRATOR BSWA CA 114 SERIAL # 480151
CALIBRATION CHECK PRE-TEST dBA SPL POST-TEST dBA SPL WINDSCRN YES

SETTINGS A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER:

	REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
ST1	25-26	9:27	9:42	62.7	84.5	52.1				

COMMENTS
READING TAKEN IN FRONT OF 8110 226TH STREET (RESIDENTIAL); PRIMARY NOISE SOURCE IS TRAFFIC ON NEARBY NORWALK BLVD; LIGHT TRAFFIC ON 226TH ST;

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: ASPHALT DIST. TO RDWY C/L OR EOP: 9'
TRAFFIC COUNT DURATION: 15 MIN SPEED MIN SPEED

COUNT 1 (OR RDWY 1)

DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS	21			
MED TRKS	1			
HVY TRKS	0			
BUSES	1			
MOTRCLS	0			

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ✓

COUNT 2 (OR RDWY 2)

DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS				
MED TRKS				
HVY TRKS				
BUSES				
MOTRCLS				

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:
TRAFFIC ON 226TH ST.

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER:

DESCRIPTION / SKETCH
TERRAIN HARD SOFT MIXED FLAT OTHER:
PHOTOS 5518; 5519; 5520; 5521; 5522
OTHER COMMENTS / SKETCH

N

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT HAWAIIAN GARDENS HOLIDAY INN PROJECT # 12103
SITE ID
SITE ADDRESS OBSERVER(S) PEYE VITAR
START DATE 8/27/19 END DATE 8/27/19
START TIME END TIME

METEOROLOGICAL CONDITIONS
TEMP 73 F HUMIDITY 73 % R.H. WIND CALM LIGHT MODERATE
WINDSPD MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY
SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT PICCOLO SLM-3 TYPE 1 2 SERIAL # M0317004
CALIBRATOR BSWA CA 114 SERIAL # 480151
CALIBRATION CHECK PRE-TEST dBA SPL POST-TEST dBA SPL WINDSCRN YES

SETTINGS A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER:

	REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
ST2	27-28	9:48	10:03	59.7	76.1	49.4				

COMMENTS
READING TAKEN IN FRONT OF 12228 BRITTAIN ST. (RESIDENTIAL); PRIMARY NOISE SOURCE IS TRAFFIC ON NEARBY NORWALK BLVD; LIGHT TRAFFIC ON BRITTAIN ST;

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: ASPHALT DIST. TO RDWY C/L OR EOP 10'
TRAFFIC COUNT DURATION: 15 MIN SPEED MIN SPEED

DIRECTION	COUNT 1 (OR RDWY 1) NB/EB	SB/WB	SPEED NB/EB	SPEED SB/WB	COUNT 2 (OR RDWY 2) NB/EB	SB/WB	SPEED NB/EB	SPEED SB/WB
AUTOS	6							
MED TRKS	0							
HVY TRKS	0							
BUSES	0							
MOTRCLS	0							

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ✓

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:
TRAFFIC ON BRITTAIN ST

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS ~~DIST. INDUSTRIAL~~
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER:

DESCRIPTION / SKETCH
TERRAIN HARD SOFT MIXED FLAT OTHER:
PHOTOS 5524; 5525; 5526; 5527; 5528; 5529
OTHER COMMENTS / SKETCH

N

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: HAWAIIAN GARDENS HOLIDAY INN — PROJECT # 12103
SITE ID:
SITE ADDRESS: — OBSERVER(S): PEXE VITAR
START DATE: 8/27/19 — END DATE: 8/27/19
START TIME: — END TIME:

METEOROLOGICAL CONDITIONS
TEMP 76 F — HUMIDITY 65 % R.H. — WIND CALM LIGHT MODERATE
WINDSPD ____ MPH — DIR. N NE S SE S SW W NW — VARIABLE STEADY GUSTY
SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT: PICCOLO SLM-3 — TYPE 1 2 — SERIAL # M0317004
CALIBRATOR: BSWA CA 114 — SERIAL # 480151
CALIBRATION CHECK: PRE-TEST ____ dBA SPL — POST-TEST ____ dBA SPL — WINDSCRN YES

SETTINGS: A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER:

	REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
ST3	29-30	10:07	10:22	60.2	72.3	52.0				

COMMENTS
READING TAKEN IN FRONT OF 12215 BRITTAIN AVE (RESIDENTIAL); PRIMARY NOISE SOURCE IS TRAFFIC ON NEARBY NORWALK BLVD; LIGHT TRAFFIC ON BRITTAIN ST;

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE: TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: ASPHALT — DIST. TO RDWY C/L OR EOP: 9'
TRAFFIC COUNT DURATION: 15 MIN — SPEED — ____ MIN — SPEED

COUNT 1 (OR RDWY 1)

DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS	6			
MED TRKS	0			
HVY TRKS	0			
BUSES	0			
MOTRCLS	0			

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE: ✓

COUNT 2 (OR RDWY 2)

DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS				
MED TRKS				
HVY TRKS				
BUSES				
MOTRCLS				

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY: TRAFFIC ON BRITTAIN ST

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER:

DESCRIPTION / SKETCH
TERRAIN: HARD SOFT MIXED FLAT OTHER:
PHOTOS: 5531, 5532, 5533, 5534, 5535
OTHER COMMENTS / SKETCH

N

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT HAWAIIAN GARDENS HOLIDAY INN PROJECT # 12103
SITE ID
SITE ADDRESS OBSERVER(S) PETE VITAR
START DATE 8/27/19 END DATE 8/27/19
START TIME END TIME

METEOROLOGICAL CONDITIONS
TEMP 77 F HUMIDITY 60 % R.H. WIND CALM LIGHT MODERATE
WINDSPD MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY
SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT PICCOLO SLM-3 TYPE 1 2 SERIAL # M0317004
CALIBRATOR BSWA CA 114 SERIAL # 480151
CALIBRATION CHECK PRE-TEST ______ dBA SPL POST-TEST ______ dBA SPL WINDSCRN YES

SETTINGS A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER:

	REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
ST4	31-32	10:38	10:53	70.3	84.1	52.1				

COMMENTS
READING TAKEN IN ~~FRONT~~ ALONGSIDE 22307 NORWALK BLVD, ON SOUTH SIDE OF STRUCTURE (RESIDENTIAL); PRIMARY NOISE SOURCE IS TRAFFIC ON NORWALK BLVD; INTERMITANT NOISE FROM NEARBY AIR-CONDITIONING UNIT;

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: ASPHALT DIST. TO RDWY C/L OR EOP: 15'
TRAFFIC COUNT DURATION: 15 MIN SPEED ______ MIN SPEED

COUNT 1 (OR RDWY 1)

DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS	201			
MED TRKS	2			
HVY TRKS	0			
BUSES	2			
MOTRCLS	0			

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ✓

COUNT 2 (OR RDWY 2)

DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS				
MED TRKS				
HVY TRKS				
BUSES				
MOTRCLS				

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY: 40 MPH ON NORWALK BL.

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER: INTERMITANT NOISE FROM NEARBY AIR CONDITIONING UNIT

DESCRIPTION / SKETCH
TERRAIN HARD SOFT MIXED FLAT OTHER:
PHOTOS 5538; 5539; 5540; 5541; 5542; 5543; 5544
OTHER COMMENTS / SKETCH

N

FIELD NOISE MEASUREMENT DATA

DUDEK

PROJECT: HAWAIIAN GARDENS HOLIDAY INN — PROJECT # 12103
SITE ID:
SITE ADDRESS: — OBSERVER(S): PEYE VITAR
START DATE: 8/27/19 — END DATE: 8/27/19
START TIME: — END TIME:

METEOROLOGICAL CONDITIONS

TEMP 80 F — HUMIDITY 54 % R.H. — WIND: CALM, LIGHT, MODERATE
WINDSPD 8 MPH — DIR. N NE S SE S SW W NW — VARIABLE STEADY GUSTY
SKY: SUNNY, CLEAR, OVRCAST, PRTLY CLDY, FOG, RAIN

ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT: PICCOLO SLM-3 — TYPE 1 2 — SERIAL # M0317064
CALIBRATOR: BSWA CA 114 — SERIAL # 480151
CALIBRATION CHECK: PRE-TEST ____ dBA SPL — POST-TEST ____ dBA SPL — WINDSCRN YES

SETTINGS: A-WTD, SLOW, FAST, FRONTAL, RANDOM, ANSI, OTHER:

	REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
ST5	33-34	11:20	11:35	70.4	80.3	52.2				

COMMENTS: READING TAKEN IN FRONT OF 8075 E. RING ST. (NEAR CORNER WITH NORWALK BLVD) (RESIDENTIAL); PRIMARY NOISE SOURCE IS TRAFFIC ON NORWALK BLVD; LIGHT TRAFFIC ON E. RING ST (7 CARS)

SOURCE INFO AND TRAFFIC COUNTS

PRIMARY NOISE SOURCE: TRAFFIC, AIRCRAFT, RAIL, INDUSTRIAL, OTHER:
ROADWAY TYPE: ASPHALT — DIST. TO RDWY C/L OR EOP: 10' FROM RING ST EOP; 35' FROM NORWALK BL. EOP
TRAFFIC COUNT DURATION: 15 MIN — SPEED — ____ MIN — SPEED

COUNT 1 (OR RDWY 1) DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS	194			
MED TRKS	3			
HVY TRKS	0			
BUSES	1			
MOTRCLS	0			

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ✓

COUNT 2 (OR RDWY 2)	NB/EB	SB/WB	NB/EB	SB/WB

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE — TRAFFIC ON NORWALK BLVD. (7 CARS ON E. RING ST)
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT, RUSTLING LEAVES, DIST. BARKING DOGS, BIRDS, DIST. INDUSTRIAL, DIST. KIDS PLAYING, DIST. CONVRSTNS / YELLING, DIST. TRAFFIC (LIST RDWYS BELOW), DISTD GARDENERS/LANDSCAPING NOISE
OTHER:

DESCRIPTION / SKETCH

TERRAIN: HARD, SOFT, MIXED, FLAT, OTHER:
PHOTOS: 5546; 5547; 5548; 5549; 5550; 5551; 5552; 5553
OTHER COMMENTS / SKETCH

N

Appendix B

Roadway Construction Noise Model Input/Output

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 10/22/2019

Case Description: Hawaiian Gardens Holiday Inn Express - Site Prep

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residence - Nearest	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		15	6
Dozer	No	40		81.7	30	6
Tractor	No	40	84		50	6

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader		89.5	85.5	N/A	N/A	N/A	N/A
Dozer		80.1	76.1	N/A	N/A	N/A	N/A
Tractor		78	74	N/A	N/A	N/A	N/A
	Total	89.5	86.2	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residence - Typical	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		50	6
Dozer	No	40		81.7	50	6
Tractor	No	40	84		50	6

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader		79	75	N/A	N/A	N/A	N/A
Dozer		75.7	71.7	N/A	N/A	N/A	N/A
Tractor		78	74	N/A	N/A	N/A	N/A
	Total	79	78.6	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 10/22/2019
Case Description: Hawaiian Gardens Holiday Inn Express - Grading

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residence - Nearest	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		15	6
Dozer	No	40		81.7	30	6
Front End Loader	No	40		79.1	50	6

Results

Equipment	Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq
Grader	89.5	85.5	N/A	N/A	N/A	N/A
Dozer	80.1	76.1	N/A	N/A	N/A	N/A
Front End Loader	73.1	69.1	N/A	N/A	N/A	N/A
Total	89.5	86	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residence - Typical	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		50	6
Dozer	No	40		81.7	50	6
Front End Loader	No	40		79.1	50	6

Results

Equipment	Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq
Grader	79	75	N/A	N/A	N/A	N/A
Dozer	75.7	71.7	N/A	N/A	N/A	N/A
Front End Loader	73.1	69.1	N/A	N/A	N/A	N/A
Total	79	77.4	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 10/22/2019
Case Description: Hawaiian Gardens Holiday Inn Express - Building Construction

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residence - Nearest	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	50	6
Man Lift	No	20		74.7	75	6
Generator	No	50		80.6	85	6
Backhoe	No	40		77.6	100	6
Welder / Torch	No	40		74	70	6
Welder / Torch	No	40		74	150	6
Welder / Torch	No	40		74	175	6

Results

Equipment		Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq
Crane		74.6	66.6	N/A	N/A	N/A	N/A
Man Lift		65.2	58.2	N/A	N/A	N/A	N/A
Generator		70	67	N/A	N/A	N/A	N/A
Backhoe		65.5	61.6	N/A	N/A	N/A	N/A
Welder / Torch		65.1	61.1	N/A	N/A	N/A	N/A
Welder / Torch		58.5	54.5	N/A	N/A	N/A	N/A
Welder / Torch		57.1	53.1	N/A	N/A	N/A	N/A
	Total	74.6	71.3	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residence - Typical	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	100	6
Man Lift	No	20		74.7	100	6
Generator	No	50		80.6	100	6
Backhoe	No	40		77.6	100	6
Welder / Torch	No	40		74	100	6
Welder / Torch	No	40		74	100	6
Welder / Torch	No	40		74	100	6

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		68.5	60.6	N/A	N/A	N/A	N/A
Man Lift		62.7	55.7	N/A	N/A	N/A	N/A
Generator		68.6	65.6	N/A	N/A	N/A	N/A
Backhoe		65.5	61.6	N/A	N/A	N/A	N/A
Welder / Torch		62	58	N/A	N/A	N/A	N/A
Welder / Torch		62	58	N/A	N/A	N/A	N/A
Welder / Torch		62	58	N/A	N/A	N/A	N/A
	Total	68.6	69.3	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 10/22/2019
Case Description: Hawaiian Gardens Holiday Inn Express - Paving

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residence - Nearest	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Mixer Truck	No	40		78.8	15	6
Paver	No	50		77.2	30	6
Concrete Pump Truck	No	20		81.4	50	6
Roller	No	20		80	35	6
Front End Loader	No	40		79.1	70	6

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Mixer Truck		83.3	79.3	N/A	N/A	N/A	N/A
Paver		75.7	72.6	N/A	N/A	N/A	N/A
Concrete Pump Truck		75.4	68.4	N/A	N/A	N/A	N/A
Roller		77.1	70.1	N/A	N/A	N/A	N/A
Front End Loader		70.2	66.2	N/A	N/A	N/A	N/A
	Total	83.3	80.9	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residence - Typical	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	50	6
Paver	No	50		77.2	50	6
Concrete Pump Truck	No	20		81.4	50	6
Roller	No	20		80	50	6
Front End Loader	No	40		79.1	50	6

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Mixer Truck		72.8	68.8	N/A	N/A	N/A	N/A
Paver		71.2	68.2	N/A	N/A	N/A	N/A
Concrete Pump Truck		75.4	68.4	N/A	N/A	N/A	N/A
Roller		74	67	N/A	N/A	N/A	N/A
Front End Loader		73.1	69.1	N/A	N/A	N/A	N/A
	Total	75.4	75.4	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 10/22/2019
Case Description: Hawaiian Gardens Holiday Inn Express - Arch'l Coating

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residence - Nearest	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	50	6

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		71.7	67.7	N/A	N/A	N/A	N/A
	Total	71.7	67.7	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residence - Typical	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	100	6

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	65.6	61.7	N/A	N/A	N/A	N/A
Total	65.6	61.7	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Appendix C

Traffic Noise Model Input/Output

Dudek					**29 October 2019**							
MG					**TNM 2.5**							
INPUT: ROADWAYS							**Average pavement type shall be used unless**					
PROJECT/CONTRACT:	**12103**						**a State highway agency substantiates the use**					
RUN:	**Holiday Inn Express HwnGrdns - Existing**						**of a different type with the approval of FHWA**					
Roadway		**Points**										
Name	**Width**	**Name**	**No.**	**Coordinates (pavement)**			**Flow Control**			**Segment**		
				X	**Y**	**Z**	**Control Device**	**Speed Constraint**	**Percent Vehicles Affected**	**Pvmt Type**	**On Struct?**	
	ft			ft	ft	ft		mph	%			
Norwalk Blvd. s. of 226th St.	60.0	point1	1	1,000.0	1,000.0	100.00				Average		
		point3	3	1,000.0	3,250.0	100.00						
226th St west of Norwalk Blvd	30.0	point7	7	100.0	3,250.0	100.00				Average		
		point8	8	975.0	3,250.0	100.00						
226th St east of Norwalk Blvd	30.0	point9	9	1,025.0	3,250.0	100.00				Average		
		point10	10	2,000.0	3,250.0	100.00						
Norwalk Blvd. - 226th St. to Brittain St.	60.0	point11	11	1,000.0	3,250.0	100.00				Average		
		point4	4	1,000.0	3,520.0	100.00						
Norwalk Blvd. - n. of Brittain St. to 223rd	60.0	point12	12	1,000.0	3,520.0	100.00				Average		
		point5	5	1,000.0	4,020.0	100.00						
Brittain St west of Norwalk Blvd	30.0	point13	13	100.0	3,520.0	100.00				Average		
		point14	14	975.0	3,520.0	100.00						
Brittain St east of Norwalk Blvd	30.0	point15	15	1,025.0	3,520.0	100.00				Average		
		point16	16	2,000.0	3,520.0	100.00						
Norwalk Blvd. - n. of 223rd St	60.0	point17	17	1,000.0	4,020.0	100.00				Average		
		point2	2	1,000.0	5,000.0	100.00						
223rd St west of Norwalk Blvd	30.0	point18	18	100.0	4,020.0	100.00				Average		
		point19	19	975.0	4,020.0	100.00						
223rd St east of Norwalk Blvd	30.0	point20	20	1,025.0	4,020.0	100.00				Average		
		point21	21	2,000.0	4,020.0	100.00						

Dudek 29 October 2(
MG TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages
PROJECT/CONTRACT: 12103
RUN: Holiday Inn Express HwnGrdns - Existing

Roadway	Points													
Name	Name	No.	Segment											
			Total	Autos		MTrucks		HTrucks		Buses		Motorcycles		
			Volume	P	S	P	S	P	S	P	S	P	S	
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph	
Norwalk Blvd. s. of 226th St.	point1	1	1478	97	45	2	45	1	45	0	0	0	0	
	point3	3												
226th St west of Norwalk Blvd	point7	7	146	97	25	2	25	1	25	0	0	0	0	
	point8	8												
226th St east of Norwalk Blvd	point9	9	161	97	25	2	25	1	25	0	0	0	0	
	point10	10												
Norwalk Blvd. - 226th St. to Brittain St.	point11	11	1503	97	45	2	45	1	45	0	0	0	0	
	point4	4												
Norwalk Blvd. - n. of Brittain St. to 223rd	point12	12	1551	97	45	2	45	1	45	0	0	0	0	
	point5	5												
Brittain St west of Norwalk Blvd	point13	13	0	0	0	0	0	0	0	0	0	0	0	
	point14	14												
Brittain St east of Norwalk Blvd	point15	15	77	97	25	2	25	1	25	0	0	0	0	
	point16	16												
Norwalk Blvd. - n. of 223rd St	point17	17	1681	97	45	2	45	1	45	0	0	0	0	
	point2	2												
223rd St west of Norwalk Blvd	point18	18	245	97	25	2	25	1	25	0	0	0	0	
	point19	19												
223rd St east of Norwalk Blvd	point20	20	137	97	25	2	25	1	25	0	0	0	0	
	point21	21												

Dudek **29 October 2019**
MG **TNM 2.5**

INPUT: RECEIVERS
PROJECT/CONTRACT: **12103**
RUN: **Holiday Inn Express HwnGrdns - 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	1,186.1	3,219.0	100.00	5.00	0.00	66	10.0	8.0	Y
ST2	3	1	1,320.8	3,461.6	100.00	5.00	0.00	66	10.0	8.0	Y
ST3	5	1	1,177.5	3,552.3	100.00	5.00	0.00	66	10.0	8.0	Y
ST4	7	1	956.7	3,946.1	100.00	5.00	0.00	66	10.0	8.0	Y
ST5	9	1	942.5	2,723.2	100.00	5.00	0.00	66	10.0	8.0	Y

Dudek					**29 October 2019**															
MG					**TNM 2.5**															
INPUT: BARRIERS																				
PROJECT/CONTRACT:	**12103**																			
RUN:	**Holiday Inn Express HwnGrdns - Existing**																			
Barrier									**Points**											
Name	**Type**	**Height**		**If Wall**	**If Berm**			**Add'tnl**	**Name**	**No.**	**Coordinates (bottom)**			**Height**	**Segment**					
		Min	**Max**	**$ per Unit Area**	**$ per Unit Vol.**	**Top Width**	**Run:Rise**	**$ per Unit Length**			**X**	**Y**	**Z**	**at Point**	**Seg Ht Perturbs Incre-ment**	**#Up**	**#Dn**	**On Struct?**	**Important Reflec-tions?**	
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft					
Barrier1	W	0.00	99.99	0.00				0.00	point1	1	1,073.9	2,292.3	100.00	20.00	0.00	0	0			
									point3	3	1,065.4	3,199.5	100.00	20.00	0.00	0	0			
									point2	2	1,543.6	3,197.5	100.00	20.00						
Barrier2	W	0.00	99.99	0.00				0.00	point4	4	214.3	3,156.2	100.00	20.00	0.00	0	0			
									point5	5	925.1	3,157.6	100.00	20.00	0.00	0	0			
									point6	6	922.3	2,287.0	100.00	20.00						
Barrier3	W	0.00	99.99	0.00				0.00	point7	7	220.1	3,311.6	100.00	20.00	0.00	0	0			
									point8	8	905.0	3,311.6	100.00	20.00	0.00	0	0			
									point9	9	905.0	3,472.8	100.00	20.00	0.00	0	0			
									point10	10	179.8	3,472.8	100.00	20.00						
Barrier4	W	0.00	99.99	0.00				0.00	point11	11	1,647.6	3,582.1	100.00	20.00	0.00	0	0			
									point12	12	1,053.9	3,588.4	100.00	20.00	0.00	0	0			
									point13	13	1,055.8	3,985.0	100.00	20.00	0.00	0	0			
									point14	14	1,941.2	3,987.9	100.00	20.00						
Barrier5	W	0.00	99.99	0.00				0.00	point15	15	182.2	3,939.4	100.00	20.00	0.00	0	0			
									point16	16	910.8	3,933.2	100.00	20.00	0.00	0	0			
									point17	17	910.8	3,576.4	100.00	20.00	0.00	0	0			
									point18	18	169.7	3,577.9	100.00	20.00						
Barrier6	W	0.00	99.99	0.00				0.00	point19	19	1,699.4	3,443.0	100.00	20.00	0.00	0	0			
									point20	20	1,290.7	3,444.0	100.00	20.00	0.00	0	0			
									point21	21	1,290.7	3,294.3	100.00	20.00	0.00	0	0			
									point22	22	1,699.4	3,294.3	100.00	20.00						

Dudek			29 October 2019	
MG			TNM 2.5	
			Calculated with TNM 2.5	
RESULTS: SOUND LEVELS				
PROJECT/CONTRACT:	12103			
RUN:	Holiday Inn Express HwnGrdns - Existing			
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	61.0	66	61.0	10	----	61.0	0.0	8	-8.0
ST2	3	1	0.0	54.8	66	54.8	10	----	54.8	0.0	8	-8.0
ST3	5	1	0.0	60.9	66	60.9	10	----	60.9	0.0	8	-8.0
ST4	7	1	0.0	70.2	66	70.2	10	Snd Lvl	70.2	0.0	8	-8.0
ST5	9	1	0.0	68.4	66	68.4	10	Snd Lvl	68.4	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	2	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek
MG

29 October 2019
TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: 12103
RUN: Hldy Inn Exprss HwnGrdns - Exist w Prj

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Norwalk Blvd. s. of 226th St.	60.0	point1	1	1,000.0	1,000.0	100.00				Average	
		point3	3	1,000.0	3,250.0	100.00					
226th St west of Norwalk Blvd	30.0	point7	7	100.0	3,250.0	100.00				Average	
		point8	8	975.0	3,250.0	100.00					
226th St east of Norwalk Blvd	30.0	point9	9	1,025.0	3,250.0	100.00				Average	
		point10	10	2,000.0	3,250.0	100.00					
Norwalk Blvd. - 226th St. to Brittain St.	60.0	point11	11	1,000.0	3,250.0	100.00				Average	
		point4	4	1,000.0	3,520.0	100.00					
Norwalk Blvd. - n. of Brittain St. to 223rd	60.0	point12	12	1,000.0	3,520.0	100.00				Average	
		point5	5	1,000.0	4,020.0	100.00					
Brittain St west of Norwalk Blvd	30.0	point13	13	100.0	3,520.0	100.00				Average	
		point14	14	975.0	3,520.0	100.00					
Brittain St east of Norwalk Blvd	30.0	point15	15	1,025.0	3,520.0	100.00				Average	
		point16	16	2,000.0	3,520.0	100.00					
Norwalk Blvd. - n. of 223rd St	60.0	point17	17	1,000.0	4,020.0	100.00				Average	
		point2	2	1,000.0	5,000.0	100.00					
223rd St west of Norwalk Blvd	30.0	point18	18	100.0	4,020.0	100.00				Average	
		point19	19	975.0	4,020.0	100.00					
223rd St east of Norwalk Blvd	30.0	point20	20	1,025.0	4,020.0	100.00				Average	
		point21	21	2,000.0	4,020.0	100.00					

Dudek 29 October 2(
MG TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages
PROJECT/CONTRACT: 12103
RUN: Hldy Inn Exprss HwnGrdns - Exist w Prj

Roadway	Points													
Name	Name	No.	Segment											
			Total	Autos		MTrucks		HTrucks		Buses		Motorcycles		
			Volume	P	S	P	S	P	S	P	S	P	S	
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph	
Norwalk Blvd. s. of 226th St.	point1	1	1488	97	45	2	45	1	45	0	0	0	0	
	point3	3												
226th St west of Norwalk Blvd	point7	7	161	97	25	2	25	1	25	0	0	0	0	
	point8	8												
226th St east of Norwalk Blvd	point9	9	166	97	25	2	25	1	25	0	0	0	0	
	point10	10												
Norwalk Blvd. - 226th St. to Brittain St.	point11	11	1560	97	45	2	45	1	45	0	0	0	0	
	point4	4												
Norwalk Blvd. - n. of Brittain St. to 223rd	point12	12	1581	97	45	2	45	1	45	0	0	0	0	
	point5	5												
Brittain St west of Norwalk Blvd	point13	13	0	0	0	0	0	0	0	0	0	0	0	
	point14	14												
Brittain St east of Norwalk Blvd	point15	15	78	97	25	2	25	1	25	0	0	0	0	
	point16	16												
Norwalk Blvd. - n. of 223rd St	point17	17	1711	97	45	2	45	1	45	0	0	0	0	
	point2	2												
223rd St west of Norwalk Blvd	point18	18	245	97	25	2	25	1	25	0	0	0	0	
	point19	19												
223rd St east of Norwalk Blvd	point20	20	137	97	25	2	25	1	25	0	0	0	0	
	point21	21												

Dudek **29 October 2019**
MG **TNM 2.5**

INPUT: RECEIVERS
PROJECT/CONTRACT: **12103**
RUN: **Hldy Inn Exprss HwnGrdns - Exist w Prj**

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	1,186.1	3,219.0	100.00	5.00	0.00	66	10.0	8.0	Y
ST2	3	1	1,320.8	3,461.6	100.00	5.00	0.00	66	10.0	8.0	Y
ST3	5	1	1,177.5	3,552.3	100.00	5.00	0.00	66	10.0	8.0	Y
ST4	7	1	956.7	3,946.1	100.00	5.00	0.00	66	10.0	8.0	Y
ST5	9	1	942.5	2,723.2	100.00	5.00	0.00	66	10.0	8.0	Y

Dudek 29 October 2019
MG TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: 12103
RUN: Hldy Inn Exprss HwnGrdns - Exist w Prj

Barrier									Points											
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment					
		Min	Max	$ per Unit Area	$ per Unit Vol.	Top Width	Run:Rise	$ per Unit Length			X	Y	Z	at Point	Seg Ht Perturbs Incre-ment	#Up	#Dn	On Struct?	Important Reflec-tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier1	W	0.00	99.99	0.00				0.00	point1	1	1,073.9	2,292.3	100.00	20.00	0.00	0	0		
									point3	3	1,065.4	3,199.5	100.00	20.00	0.00	0	0		
									point2	2	1,543.6	3,197.5	100.00	20.00					
Barrier2	W	0.00	99.99	0.00				0.00	point4	4	214.3	3,156.2	100.00	20.00	0.00	0	0		
									point5	5	925.1	3,157.6	100.00	20.00	0.00	0	0		
									point6	6	922.3	2,287.0	100.00	20.00					
Barrier3	W	0.00	99.99	0.00				0.00	point7	7	220.1	3,311.6	100.00	20.00	0.00	0	0		
									point8	8	905.0	3,311.6	100.00	20.00	0.00	0	0		
									point9	9	905.0	3,472.8	100.00	20.00	0.00	0	0		
									point10	10	179.8	3,472.8	100.00	20.00					
Barrier4	W	0.00	99.99	0.00				0.00	point11	11	1,647.6	3,582.1	100.00	20.00	0.00	0	0		
									point12	12	1,053.9	3,588.4	100.00	20.00	0.00	0	0		
									point13	13	1,055.8	3,985.0	100.00	20.00	0.00	0	0		
									point14	14	1,941.2	3,987.9	100.00	20.00					
Barrier5	W	0.00	99.99	0.00				0.00	point15	15	182.2	3,939.4	100.00	20.00	0.00	0	0		
									point16	16	910.8	3,933.2	100.00	20.00	0.00	0	0		
									point17	17	910.8	3,576.4	100.00	20.00	0.00	0	0		
									point18	18	169.7	3,577.9	100.00	20.00					
Barrier6	W	0.00	99.99	0.00				0.00	point19	19	1,699.4	3,443.0	100.00	20.00	0.00	0	0		
									point20	20	1,290.7	3,444.0	100.00	20.00	0.00	0	0		
									point21	21	1,290.7	3,294.3	100.00	20.00	0.00	0	0		
									point22	22	1,699.4	3,294.3	100.00	20.00					

Dudek		**29 October 2019**	
MG		**TNM 2.5**	
		Calculated with TNM 2.5	
RESULTS: SOUND LEVELS			
PROJECT/CONTRACT:	**12103**		
RUN:	**Hldy Inn Exprss HwnGrdns - Exist w Prj**		
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**	**No Barrier**					**With Barrier**			
			LAeq1h	**LAeq1h**		**Increase over existing**		**Type**	**Calculated**	**Noise Reduction**		
				Calculated	**Crit'n**	**Calculated**	**Crit'n**	**Impact**	**LAeq1h**	**Calculated**	**Goal**	**Calculated**
							Sub'l Inc					**minus**
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	61.1	66	61.1	10	----	61.1	0.0	8	-8.0
ST2	3	1	0.0	54.9	66	54.9	10	----	54.9	0.0	8	-8.0
ST3	5	1	0.0	61.0	66	61.0	10	----	61.0	0.0	8	-8.0
ST4	7	1	0.0	70.3	66	70.3	10	Snd Lvl	70.3	0.0	8	-8.0
ST5	9	1	0.0	68.4	66	68.4	10	Snd Lvl	68.4	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	2	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek
MG

29 October 2019
TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: 12103
RUN: Hldy Inn Exprss HwnGrdns - Cumulative

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway		Points					Flow Control			Segment	
Name	Width	Name	No.	Coordinates (pavement) X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Norwalk Blvd. s. of 226th St.	60.0	point1	1	1,000.0	1,000.0	100.00				Average	
		point3	3	1,000.0	3,250.0	100.00					
226th St west of Norwalk Blvd	30.0	point7	7	100.0	3,250.0	100.00				Average	
		point8	8	975.0	3,250.0	100.00					
226th St east of Norwalk Blvd	30.0	point9	9	1,025.0	3,250.0	100.00				Average	
		point10	10	2,000.0	3,250.0	100.00					
Norwalk Blvd. - 226th St. to Brittain St.	60.0	point11	11	1,000.0	3,250.0	100.00				Average	
		point4	4	1,000.0	3,520.0	100.00					
Norwalk Blvd. - n. of Brittain St. to 223rd	60.0	point12	12	1,000.0	3,520.0	100.00				Average	
		point5	5	1,000.0	4,020.0	100.00					
Brittain St west of Norwalk Blvd	30.0	point13	13	100.0	3,520.0	100.00				Average	
		point14	14	975.0	3,520.0	100.00					
Brittain St east of Norwalk Blvd	30.0	point15	15	1,025.0	3,520.0	100.00				Average	
		point16	16	2,000.0	3,520.0	100.00					
Norwalk Blvd. - n. of 223rd St	60.0	point17	17	1,000.0	4,020.0	100.00				Average	
		point2	2	1,000.0	5,000.0	100.00					
223rd St west of Norwalk Blvd	30.0	point18	18	100.0	4,020.0	100.00				Average	
		point19	19	975.0	4,020.0	100.00					
223rd St east of Norwalk Blvd	30.0	point20	20	1,025.0	4,020.0	100.00				Average	
		point21	21	2,000.0	4,020.0	100.00					

Dudek 29 October 2(
MG TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Percentages
PROJECT/CONTRACT: 12103
RUN: Hldy Inn Exprss HwnGrdns - Cumulative

Roadway	Points													
Name	Name	No.	Segment											
			Total	Autos		MTrucks		HTrucks		Buses		Motorcycles		
			Volume	P	S	P	S	P	S	P	S	P	S	
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph	
Norwalk Blvd. s. of 226th St.	point1	1	1538	97	45	2	45	1	45	0	0	0	0	
	point3	3												
226th St west of Norwalk Blvd	point7	7	147	97	25	2	25	1	25	0	0	0	0	
	point8	8												
226th St east of Norwalk Blvd	point9	9	166	97	25	2	25	1	25	0	0	0	0	
	point10	10												
Norwalk Blvd. - 226th St. to Brittain St.	point11	11	1560	97	45	2	45	1	45	0	0	0	0	
	point4	4												
Norwalk Blvd. - n. of Brittain St. to 223rd	point12	12	1610	97	45	2	45	1	45	0	0	0	0	
	point5	5												
Brittain St west of Norwalk Blvd	point13	13	0	0	0	0	0	0	0	0	0	0	0	
	point14	14												
Brittain St east of Norwalk Blvd	point15	15	78	97	25	2	25	1	25	0	0	0	0	
	point16	16												
Norwalk Blvd. - n. of 223rd St	point17	17	1696	97	45	2	45	1	45	0	0	0	0	
	point2	2												
223rd St west of Norwalk Blvd	point18	18	249	97	25	2	25	1	25	0	0	0	0	
	point19	19												
223rd St east of Norwalk Blvd	point20	20	93	97	25	2	25	1	25	0	0	0	0	
	point21	21												

Dudek 29 October 2019
MG TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: 12103
RUN: Hldy Inn Exprss HwnGrdns - Cumulative

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	1,186.1	3,219.0	100.00	5.00	0.00	66	10.0	8.0	Y
ST2	3	1	1,320.8	3,461.6	100.00	5.00	0.00	66	10.0	8.0	Y
ST3	5	1	1,177.5	3,552.3	100.00	5.00	0.00	66	10.0	8.0	Y
ST4	7	1	956.7	3,946.1	100.00	5.00	0.00	66	10.0	8.0	Y
ST5	9	1	942.5	2,723.2	100.00	5.00	0.00	66	10.0	8.0	Y

Dudek **29 October 2019**
MG **TNM 2.5**

INPUT: BARRIERS
PROJECT/CONTRACT: **12103**
RUN: **Hldy Inn Exprss HwnGrdns - Cumulative**

Barrier									Points										
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment				
		Min	Max	$ per Unit Area	$ per Unit Vol.	Top Width	Run:Rise	$ per Unit Length			X	Y	Z	at Point	Seg Ht Perturbs Incre-ment	#Up	#Dn	On Struct?	Important Reflec-tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier1	W	0.00	99.99	0.00				0.00	point1	1	1,073.9	2,292.3	100.00	20.00	0.00	0	0		
									point3	3	1,065.4	3,199.5	100.00	20.00	0.00	0	0		
									point2	2	1,543.6	3,197.5	100.00	20.00					
Barrier2	W	0.00	99.99	0.00				0.00	point4	4	214.3	3,156.2	100.00	20.00	0.00	0	0		
									point5	5	925.1	3,157.6	100.00	20.00	0.00	0	0		
									point6	6	922.3	2,287.0	100.00	20.00					
Barrier3	W	0.00	99.99	0.00				0.00	point7	7	220.1	3,311.6	100.00	20.00	0.00	0	0		
									point8	8	905.0	3,311.6	100.00	20.00	0.00	0	0		
									point9	9	905.0	3,472.8	100.00	20.00	0.00	0	0		
									point10	10	179.8	3,472.8	100.00	20.00					
Barrier4	W	0.00	99.99	0.00				0.00	point11	11	1,647.6	3,582.1	100.00	20.00	0.00	0	0		
									point12	12	1,053.9	3,588.4	100.00	20.00	0.00	0	0		
									point13	13	1,055.8	3,985.0	100.00	20.00	0.00	0	0		
									point14	14	1,941.2	3,987.9	100.00	20.00					
Barrier5	W	0.00	99.99	0.00				0.00	point15	15	182.2	3,939.4	100.00	20.00	0.00	0	0		
									point16	16	910.8	3,933.2	100.00	20.00	0.00	0	0		
									point17	17	910.8	3,576.4	100.00	20.00	0.00	0	0		
									point18	18	169.7	3,577.9	100.00	20.00					
Barrier6	W	0.00	99.99	0.00				0.00	point19	19	1,699.4	3,443.0	100.00	20.00	0.00	0	0		
									point20	20	1,290.7	3,444.0	100.00	20.00	0.00	0	0		
									point21	21	1,290.7	3,294.3	100.00	20.00	0.00	0	0		
									point22	22	1,699.4	3,294.3	100.00	20.00					

Dudek				**29 October 2019**	
MG				**TNM 2.5**	
				Calculated with TNM 2.5	
RESULTS: SOUND LEVELS					
PROJECT/CONTRACT:	**12103**				
RUN:	**Hldy Inn Exprss HwnGrdns - Cumulative**				
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**	**No Barrier**						**With Barrier**			
			LAeq1h	**LAeq1h**		**Increase over existing**		**Type**		**Calculated**	**Noise Reduction**		
				Calculated	**Crit'n**	**Calculated**	**Crit'n Sub'l Inc**	**Impact**		**LAeq1h**	**Calculated**	**Goal**	**Calculated minus Goal**
			dBA	dBA	dBA	dB	dB			dBA	dB	dB	dB
ST1	1	1	0.0	61.1	66	61.1	10	----		61.1	0.0	8	-8.0
ST2	3	1	0.0	54.9	66	54.9	10	----		54.9	0.0	8	-8.0
ST3	5	1	0.0	61.1	66	61.1	10	----		61.1	0.0	8	-8.0
ST4	7	1	0.0	70.3	66	70.3	10	Snd Lvl		70.3	0.0	8	-8.0
ST5	9	1	0.0	68.6	66	68.6	10	Snd Lvl		68.6	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	2	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek				**29 October 2019**							
MG				**TNM 2.5**							
INPUT: ROADWAYS							**Average pavement type shall be used unless**				
PROJECT/CONTRACT:	**12103**						**a State highway agency substantiates the use**				
RUN:	**Hldy Inn Exprss HwnGrdns - Cumltv w Prj**						**of a different type with the approval of FHWA**				
Roadway		**Points**									
Name	**Width**	**Name**	**No.**	**Coordinates (pavement)**			**Flow Control**			**Segment**	
				X	**Y**	**Z**	**Control Device**	**Speed Constraint**	**Percent Vehicles Affected**	**Pvmt Type**	**On Struct?**
	ft			ft	ft	ft		mph	%		
Norwalk Blvd. s. of 226th St.	60.0	point1	1	1,000.0	1,000.0	100.00				Average	
		point3	3	1,000.0	3,250.0	100.00					
226th St west of Norwalk Blvd	30.0	point7	7	100.0	3,250.0	100.00				Average	
		point8	8	975.0	3,250.0	100.00					
226th St east of Norwalk Blvd	30.0	point9	9	1,025.0	3,250.0	100.00				Average	
		point10	10	2,000.0	3,250.0	100.00					
Norwalk Blvd. - 226th St. to Brittain St.	60.0	point11	11	1,000.0	3,250.0	100.00				Average	
		point4	4	1,000.0	3,520.0	100.00					
Norwalk Blvd. - n. of Brittain St. to 223rd	60.0	point12	12	1,000.0	3,520.0	100.00				Average	
		point5	5	1,000.0	4,020.0	100.00					
Brittain St west of Norwalk Blvd	30.0	point13	13	100.0	3,520.0	100.00				Average	
		point14	14	975.0	3,520.0	100.00					
Brittain St east of Norwalk Blvd	30.0	point15	15	1,025.0	3,520.0	100.00				Average	
		point16	16	2,000.0	3,520.0	100.00					
Norwalk Blvd. - n. of 223rd St	60.0	point17	17	1,000.0	4,020.0	100.00				Average	
		point2	2	1,000.0	5,000.0	100.00					
223rd St west of Norwalk Blvd	30.0	point18	18	100.0	4,020.0	100.00				Average	
		point19	19	975.0	4,020.0	100.00					
223rd St east of Norwalk Blvd	30.0	point20	20	1,025.0	4,020.0	100.00				Average	
		point21	21	2,000.0	4,020.0	100.00					

Dudek **29 October 2(**
MG **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Percentages
PROJECT/CONTRACT: **12103**
RUN: **Hldy Inn Exprss HwnGrdns - Cumltv w Prj**

Roadway	Points													
Name	Name	No.	Segment											
			Total	Autos		MTrucks		HTrucks		Buses		Motorcycles		
			Volume	P	S	P	S	P	S	P	S	P	S	
			veh/hr	%	mph	%	mph	%	mph	%	mph	%	mph	
Norwalk Blvd. s. of 226th St.	point1	1	1548	97	45	2	45	1	45	0	0	0	0	
	point3	3												
226th St west of Norwalk Blvd	point7	7	147	97	25	2	25	1	25	0	0	0	0	
	point8	8												
226th St east of Norwalk Blvd	point9	9	186	97	25	2	25	1	25	0	0	0	0	
	point10	10												
Norwalk Blvd. - 226th St. to Brittain St.	point11	11	1590	97	45	2	45	1	45	0	0	0	0	
	point4	4												
Norwalk Blvd. - n. of Brittain St. to 223rd	point12	12	1640	97	45	2	45	1	45	0	0	0	0	
	point5	5												
Brittain St west of Norwalk Blvd	point13	13	0	0	0	0	0	0	0	0	0	0	0	
	point14	14												
Brittain St east of Norwalk Blvd	point15	15	78	97	25	2	25	1	25	0	0	0	0	
	point16	16												
Norwalk Blvd. - n. of 223rd St	point17	17	1772	97	45	2	45	1	45	0	0	0	0	
	point2	2												
223rd St west of Norwalk Blvd	point18	18	249	97	25	2	25	1	25	0	0	0	0	
	point19	19												
223rd St east of Norwalk Blvd	point20	20	139	97	25	2	25	1	25	0	0	0	0	
	point21	21												

Dudek						**29 October 2019**					
MG						**TNM 2.5**					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	**12103**										
RUN:	**Hldy Inn Exprss HwnGrdns - Cumltv w Prj**										
Receiver											
Name	**No.**	**#DUs**	**Coordinates (ground)**			**Height**	**Input Sound Levels and Criteria**				**Active**
			X	**Y**	**Z**	**above**	**Existing**	**Impact Criteria**		**NR**	**in**
						Ground	**LAeq1h**	**LAeq1h**	**Sub'l**	**Goal**	**Calc.**
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	1,186.1	3,219.0	100.00	5.00	0.00	66	10.0	8.0	Y
ST2	3	1	1,320.8	3,461.6	100.00	5.00	0.00	66	10.0	8.0	Y
ST3	5	1	1,177.5	3,552.3	100.00	5.00	0.00	66	10.0	8.0	Y
ST4	7	1	956.7	3,946.1	100.00	5.00	0.00	66	10.0	8.0	Y
ST5	9	1	942.5	2,723.2	100.00	5.00	0.00	66	10.0	8.0	Y

Dudek **29 October 2019**
MG **TNM 2.5**

INPUT: BARRIERS
PROJECT/CONTRACT: **12103**
RUN: **Hldy Inn Exprss HwnGrdns - Cumltv w Prj**

Barrier									Points											
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment					
		Min	Max	$ per Unit Area	$ per Unit Vol.	Top Width	Run:Rise	$ per Unit Length			X	Y	Z	at Point	Seg Ht Perturbs Incre-ment	#Up	#Dn	On Struct?	Important Reflec-tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier1	W	0.00	99.99	0.00				0.00	point1	1	1,073.9	2,292.3	100.00	20.00	0.00	0	0		
									point3	3	1,065.4	3,199.5	100.00	20.00	0.00	0	0		
									point2	2	1,543.6	3,197.5	100.00	20.00					
Barrier2	W	0.00	99.99	0.00				0.00	point4	4	214.3	3,156.2	100.00	20.00	0.00	0	0		
									point5	5	925.1	3,157.6	100.00	20.00	0.00	0	0		
									point6	6	922.3	2,287.0	100.00	20.00					
Barrier3	W	0.00	99.99	0.00				0.00	point7	7	220.1	3,311.6	100.00	20.00	0.00	0	0		
									point8	8	905.0	3,311.6	100.00	20.00	0.00	0	0		
									point9	9	905.0	3,472.8	100.00	20.00	0.00	0	0		
									point10	10	179.8	3,472.8	100.00	20.00					
Barrier4	W	0.00	99.99	0.00				0.00	point11	11	1,647.6	3,582.1	100.00	20.00	0.00	0	0		
									point12	12	1,053.9	3,588.4	100.00	20.00	0.00	0	0		
									point13	13	1,055.8	3,985.0	100.00	20.00	0.00	0	0		
									point14	14	1,941.2	3,987.9	100.00	20.00					
Barrier5	W	0.00	99.99	0.00				0.00	point15	15	182.2	3,939.4	100.00	20.00	0.00	0	0		
									point16	16	910.8	3,933.2	100.00	20.00	0.00	0	0		
									point17	17	910.8	3,576.4	100.00	20.00	0.00	0	0		
									point18	18	169.7	3,577.9	100.00	20.00					
Barrier6	W	0.00	99.99	0.00				0.00	point19	19	1,699.4	3,443.0	100.00	20.00	0.00	0	0		
									point20	20	1,290.7	3,444.0	100.00	20.00	0.00	0	0		
									point21	21	1,290.7	3,294.3	100.00	20.00	0.00	0	0		
									point22	22	1,699.4	3,294.3	100.00	20.00					

Dudek		29 October 2019
MG		TNM 2.5
		Calculated with TNM 2.5
RESULTS: SOUND LEVELS		
PROJECT/CONTRACT:	12103	
RUN:	Hldy Inn Exprss HwnGrdns - Cumltv w Prj	
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	No Barrier LAeq1h Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	61.3	66	61.3	10	----	61.3	0.0	8	-8.0
ST2	3	1	0.0	55.0	66	55.0	10	----	55.0	0.0	8	-8.0
ST3	5	1	0.0	61.1	66	61.1	10	----	61.1	0.0	8	-8.0
ST4	7	1	0.0	70.4	66	70.4	10	Snd Lvl	70.4	0.0	8	-8.0
ST5	9	1	0.0	68.6	66	68.6	10	Snd Lvl	68.6	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	5	0.0	0.0	0.0
All Impacted	2	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Appendix C

Traffic Impact Analysis

TRAFFIC IMPACT STUDY
HOLIDAY INN EXPRESS & SUITES
22434 NORWALK BOULEVARD
HAWAIIAN GARDENS, CALIFORNIA

♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦

Prepared for

APPROVED

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♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦♦

Prepared by

Crown City Engineers, Inc.

1475 Glen Oaks Boulevard
Pasadena, CA 91105
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Under the Supervision of:
Patrick B. Lang, P.E
Registered Traffic Engineer

Revised

October 10, 2019

CCE2019-10 PBL/MYR

TRAFFIC IMPACT STUDY
HOLIDAY INN EXPRESS & SUITES
22434 NORWALK BOULEVARD
HAWAIIAN GARDENS, CALIFORNIA

TABLE OF CONTENTS

TITLE **PAGE**

TABLE OF CONTENTS (Contd.)

TABLES

FIGURES

TECHNICAL APPENDIX

PREPARER'S CERTIFICATION

TRAFFIC IMPACT STUDY
HOLIDAY INN EXPRESS & SUITES
22434 NORWALK BOULEVARD
HAWAIIAN GARDENS, CALIFORNIA

This is to certify that the above titled traffic study has been prepared under the supervision of Patrick B. Lang, P.E, a Professional Traffic Engineer, registered in the State of California.

Patrick B. Lang, P.E, Registration #: TR-875	10-10-2019 Date	Professional Engineer's Stamp

TRAFFIC IMPACT STUDY

HOLIDAY INN EXPRESS & SUITES

22434 NORWALK BOULEVARD

HAWAIIAN GARDENS, CALIFORNIA

EXECUTIVE SUMMARY

The purpose of this traffic impact analysis is to evaluate the impacts on traffic circulation system due to the proposed development of Holiday Inn Express & Suites in the City of Hawaiian Gardens, California. The proposed project will be located on the northeast corner of Norwalk Boulevard and 226th Street on a vacant parcel of land. The proposed project consists of constructing a 4-story building for a 71-room hotel for guests, with 64 parking spaces on-site.

The following are the key objectives of the study:

- Documentation of existing 2019 traffic conditions in the vicinity of the site.
- Determination of Project Opening Year (2021) traffic conditions and level of service (LOS) without and with the project.
- Determination of project related impacts to the circulation system, and
- Identification of mitigation measures to reduce any significant impacts to a level of insignificance.

The study included evaluation of the following five key intersections in the general vicinity of the site:

- Norwalk Boulevard and 226th Street (Signalized)
- Norwalk Boulevard and Brittain Street (Unsignalized)
- Norwalk Boulevard and 223rd Street (Signalized)
- Norwalk Boulevard and 221st Street (Signalized)
- Norwalk Boulevard and Carson Street (Signalized)

The proposed Holiday Inn Express & Suites project is estimated that the project will generate approximately 594 net trips per average day (297 inbound and 297 outbound). The average weekday net new peak hour trips will be approximately 34 trips during the AM peak hour (20 inbound and 14 outbound), and 43 trips during the PM peak hour (22 inbound and 21 outbound).

Based on the results of the traffic impact analysis, the proposed Holiday Inn Express & Suites project would not significantly impact any of the 5 key intersections analyzed in the surrounding roadway system. The addition of project traffic will not increase operational delays at any intersection beyond the significance thresholds of project related impacts. Therefore, no off-site mitigation measures would be necessary at any intersection for the development of this project. All the study intersections will continue to perform at acceptable levels of service (i.e., at LOS D or better) during the AM and PM peak hours.

Per City of Hawaiian Gardens' parking code, 1 parking space is required for each living unit of a hotel plus 1 parking space for each employee and 2 spaces for the manager. Therefore, for the 71-room hotel, a total of 76 parking spaces will be required assuming 3 employees and 1 manager to be working during the largest shift. The project's site plan shows that surface parking will consist of a total of 64 marked parking spaces (including 4 disabled parking spaces) to be provided in front and around the hotel building. This indicates parking shortage of 12 spaces during the hotel's peak demand hours. However, hotels are typically 80% occupied due to repairs and maintenance work. If parking requirement is applied to the project's 80% occupancy, the total parking spaces required will be 62. Therefore, 64 spaces shown on the site plan will adequately satisfy project's parking demand per code. In addition, the project applicant has also applied to the City for a parking variance.

The project will provide two access driveways to surface parking area off - one off Norwalk Boulevard (right-turn-in and right-turn out only) and the other off 226th Street. In addition, from the back of the hotel, two gated emergency access-driveways will be provided – one on 226th street the other on Brittain Street. The project's primary driveway on Norwalk Boulevard will have a maximum of 20 vehicle entering and 15 vehicles exiting during the peak hours. This low turn volume at the driveways is not expected to cause any queuing at the driveways. The southbound left-turn pocket at the intersection of Norwalk Boulevard and 226th Street is expected to have a maximum queue length of 76 feet during the PM peak hour. However, the length of the pocket is approximately 110 feet; therefore, impact to the left- or U-turning vehicles from this left-turn lane will not be significant and through traffic on the adjacent lane will not be blocked.

Adequate sight distance is available from the driveway along the north and south directions on Norwalk Boulevard and also along east and west directions along 226th Street. However, the driveway on Norwalk Boulevard should be striped for right turn out movement only, with a right-arrow pavement marking. A right-turn arrow sign along with a Stop sign should also be posted at this driveway for exiting vehicles.

TRAFFIC IMPACT STUDY
HOLIDAY INN EXPRESS & SUITES
22434 NORWALK BOULEVARD
HAWAIIAN GARDENS, CALIFORNIA

INTRODUCTION

The purpose of this traffic impact analysis is to evaluate the impacts on traffic circulation system due to the proposed development of Holiday Inn Express & Suites in the City of Hawaiian Gardens, California. The proposed project will be located on the northeast corner of Norwalk Boulevard and 226th Street on a vacant parcel of land. The proposed project consists of constructing a 4-story building for a 71-room hotel for guests, with 64 parking spaces on-site.

The following are the key objectives of the study:

- Documentation of existing 2019 traffic conditions in the vicinity of the site.
- Determination of Project Opening Year (2021) traffic conditions and level of service (LOS) without and with the project.
- Determination of project related impacts to the circulation system, and
- Identification of mitigation measures to reduce any significant impacts to a level of insignificance.

The report provides data regarding existing operational characteristics of traffic in the general vicinity of the project, as well as an analysis of the proposed project's impacts to these existing and anticipated future traffic conditions. The report identifies and quantifies the impacts at key intersections and attempts to address the most appropriate and reasonable mitigation strategies at any impacted intersections which are identified to be operating at a deficient level of service.

This report investigates existing 2019 and anticipated future 2021 opening year traffic operating conditions. The study has been prepared in consultation with the City of Hawaiian Gardens' planning and traffic engineering staff.

REPORT METHODOLOGY

STUDY APPROACH

This report approaches the task of identifying and quantifying the anticipated impacts to the circulation system with a structured, "building block" methodology. The first step is to inventory and quantify existing conditions. The second step is to determine the project traffic generation and distribution to be added to the existing conditions in the study area, at the anticipated opening year of the project in 2021, to assess the project's traffic impacts at that time. The methodology utilizes a growth factor for existing traffic (based upon regional guidelines), traffic from any other projects in the project vicinity, as well as the traffic anticipated to be introduced from the proposed project to determine estimated cumulative traffic volume and level-of-service at intersections for the future target year.

The trip generation estimate is based on the 10th edition of Institute of Transportation Engineers (ITE)'s "Trip Generation" manual. Research and interviews have been conducted with local and regional agencies (namely, community development department of Hawaiian Gardens and the City of Long Beach) in order to identify and characterize the most probable trip distribution patterns within the study area.

Project impacts are identified for the future year 2021 conditions. At those intersections operating deficiently (e.g., at a level worse than LOS D) and significantly impacted by the proposed project, a mitigation measure is identified and applied, and a before-and-after mitigation analysis conducted.

LEVEL OF SERVICE CRITERIA

Roadway operations and the relationship between capacity and traffic volumes are generally expressed in terms of levels of service (LOS). Levels of service are defined as LOS A through F. These levels recognize that, while an absolute limit exists as to the amount of traffic traveling through a given intersection (the absolute capacity), the conditions that motorists experience deteriorate rapidly as traffic approaches the absolute capacity. Under such conditions, congestion as well as delay is experienced. There is generally instability in the traffic flow, which means that relatively small incidents (e.g., momentary engine stall) can cause considerable fluctuations in speeds and delays. This near-capacity situation is labeled LOS E. Beyond LOS E, capacity is exceeded, and arriving traffic will exceed the ability of the intersection to accommodate it. An upstream queue will form and continue to expand in length until the demand volume reduces.

A complete description of the meaning of level of service can be found in the Highway Research Board's Special Report 209 titled *Highway Capacity Manual*. The manual establishes the definitions for levels of service A through F. Brief descriptions of the six levels of service, as extracted from the manual, are listed in **Table 1.** The thresholds of level of service for signalized and unsignalized intersections are shown in **Table 2**.

LOS D is the minimum threshold at all key intersections in the urbanized areas. The traffic study guidelines require that traffic mitigation measures be identified to provide for operations at the minimum threshold levels.

For the study area intersections, the SYNCHRO computer software has been utilized to perform intersection levels of service (LOS) analysis. The 2010 Highway Capacity Manual (HCM) operational delay method was used to determine level of service (LOS) for signalized intersections. Levels of service are presented for the entire intersection, consistent with the local and regional agency policies.

In HCM analysis, a lane capacity volume of 1,700 vehicles per hour per through lane, and 1,600 vehicles per hour per left-turn or right-turn lane was used. The peak hour factor for intersections, as calculated from traffic counts, was used to increase hourly totals. This ensures that peak 15-minute traffic volumes are used in level p service analysis.

While the level of service concept and analysis methodology provides an indication of the performance of the entire intersection, the single letter grade A through F cannot describe specific operational deficiencies at intersections. Progression, queue formation, and left-turn storage are examples of the operational issues that affect the performance of an intersection, but do not factor into the strict calculation of level of service. However, the SYNCHRO software does provide an output that quantifies operational features at intersections, such as vehicle clearance, queue formation, and left-turn storage requirements. In addition, it provides a volume to capacity (V/C) ratio that is more meaningful when identifying a project's impact and developing mitigation measures. Therefore, this V/C ratio information is also included in addition to delay information in describing an intersection's operational performance under various scenarios.

TABLE 1
LEVEL OF SERVICE DEFINITIONS

LOS	Description
A	No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turns are made easily and nearly all drivers find freedom of operation.
B	This service level represents stable operation, where an occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel restricted within platoons of vehicles.
C	This level still represents stable operating conditions. Occasionally, drivers have to wait through more than one red signal indication, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted.
D	This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak period; however, enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.
E	Capacity occurs at the upper end of this service level. It represents the most vehicles that any particular intersection can accommodate. Full utilization of every signal cycle is seldom attained no matter how great the demand.
F	This level describes forced flow operations at low speeds, where volumes exceed capacity. These conditions usually result from queues of vehicles backing up from restriction downstream. Speeds are reduced substantially and stoppages may occur for short or long periods of time due to congestion. In the extreme case, both speed and volume can drop to zero.

TABLE 2
LEVEL OF SERVICE CRITERIA

Level of Service	Two-Way or All-Way Stop Controlled Intersection Average Delay per Vehicle (sec)	Signalized Intersection Average Delay per Vehicle (sec)	Volume to Capacity (V/C) Ratio
A	0 - 10	< or = 10	0 – 0.60
B	> 10 - 15	> 10 - 20	> 0.60 – 0.70
C	> 15 - 25	> 20 - 35	> 0.70 - 0.80
D	> 25 - 35	> 35 - 55	> 0.80 – 0.90
E	> 35 - 50	> 55 - 80	> 0.90 – 1.00
F	> 50	> 80 or a V/C ratio equal to or greater than 1.0	> 1.00

EXISTING ROADWAY SYSTEM AND TRAFFIC VOLUMES

EXISTING CIRCULATION NETWORK

In order to assess future operating conditions both with and without the proposed project, existing traffic conditions within the study area were evaluated.

Figure 1, Vicinity Map, illustrates the existing circulation network within the study area as well as the location of the proposed project.

Figure 2 shows an aerial view of the project site. Major east-west regional access to the site is provided by Carson Street and 226th Street. Major north-south regional access is provided by Norwalk Boulevard.

FIGURE 1: VICINITY MAP

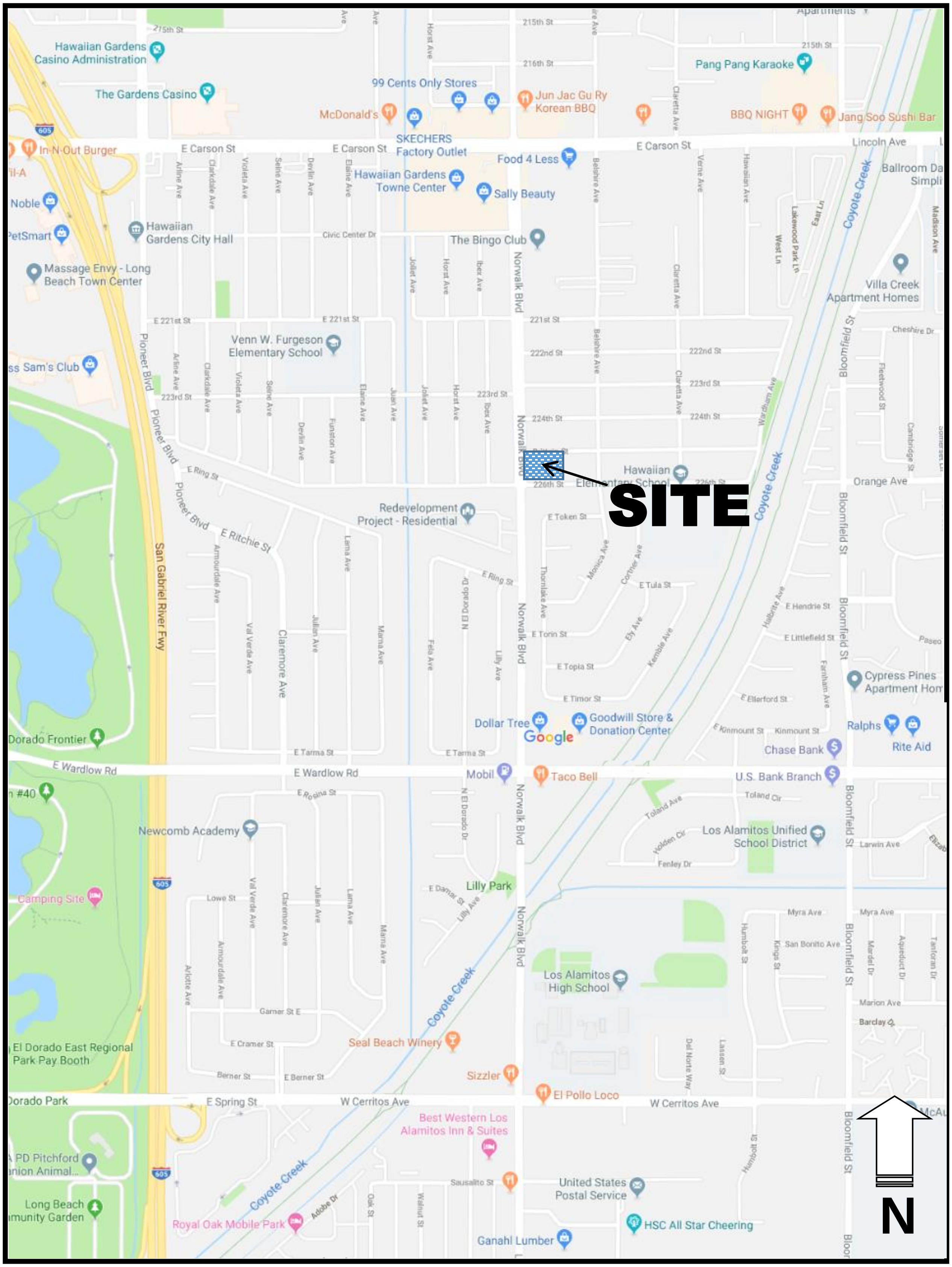


FIGURE 2: AERIAL VIEW OF THE PROJECT SITE

The project would provide one right-turn in and right-turn out driveway on Norwalk Boulevard and one full-access driveway on 226th Street. Additionally, there will be two gated access driveways at the back of the building – one on Brittain Street and one on 226th Street. The following paragraphs provide a brief description of the existing roadways which comprise the circulation network of the study area, providing the majority of both regional and local access to the project.

CARSON STREET. Carson Street is a major east-west arterial street with two travel lanes in each direction plus turn lanes at major intersections. Directional travel is separated by raised median islands along the center. The street is approximately 82 feet wide and posted with a speed limit of 40 miles per hour. Most of the key intersections along Carson Street are signalized. Parking is permitted along the sides of the street. The average daily volume on Carson Street is approximately 23,350 vehicles per day. Carson Street provides full access ramps to I-605 Freeway from the north and south directions, approximately 1 mile to the west.

NORWALK BOULEVARD. Norwalk Boulevard is a major north-south arterial street with two travel lanes and a bike lane in each direction plus turn lanes at major intersections. Directional travel is separated by raised median islands as well as double-yellow painted stripes along the center. The street is approximately 72 feet wide and posted with a speed limit of 40 miles per hour. Most of the key intersections along Norwalk Boulevard are signalized. Parking is not permitted along the sides of the street. The average daily volume on Norwalk Boulevard is approximately 18,400 vehicles per day.

226th STREET. 226th Street is an east-west collector street with one travel lane in each direction. Directional travel is separated by yellow stripes along the center. The street is approximately 38 feet wide and posted with a speed limit of 25 miles per hour. The intersection of 226th Street and Norwalk Boulevard is signalized. Parking is permitted along the sides of the street. The average daily volume on 226th Street is approximately 1,600 vehicles per day.

EXISTING TRAFFIC VOLUMES

For the purpose of evaluating existing operating conditions as well as future operating conditions with and without the proposed project, the study area was carefully selected in accordance with local traffic study guidelines. Manual turning movement counts for the selected intersections were collected in the field for the morning and evening peak periods during the month of May 2019. The intersections were counted during the peak hours of 7:00 to 9:00 AM and 4:00 to 6:00 PM on a typical weekday (Tuesday, Wednesday or Thursday) in a non-holiday school week. It was determined that the following 5 key intersections would be analyzed in the study:

- Norwalk Boulevard and 226th Street (Signalized)
- Norwalk Boulevard and Brittain Street (Unsignalized)
- Norwalk Boulevard and 223rd Street (Signalized)
- Norwalk Boulevard and 221st Street (Signalized)

- Norwalk Boulevard and Carson Street (Signalized)

These intersections have been selected to study project's potential impacts based on estimated contribution of traffic from project within a two-mile radius of the site.

Existing lane configurations at the key intersections are shown in **Figure 3**.

Existing turning movement counts for AM and PM peak hour conditions are shown in **Figure 4.** Detailed turning movement counts are included in the Technical Appendix of this report.

FIGURE 3: EXISTING LANE CONFIGURATION AT KEY INTERSECTIONS

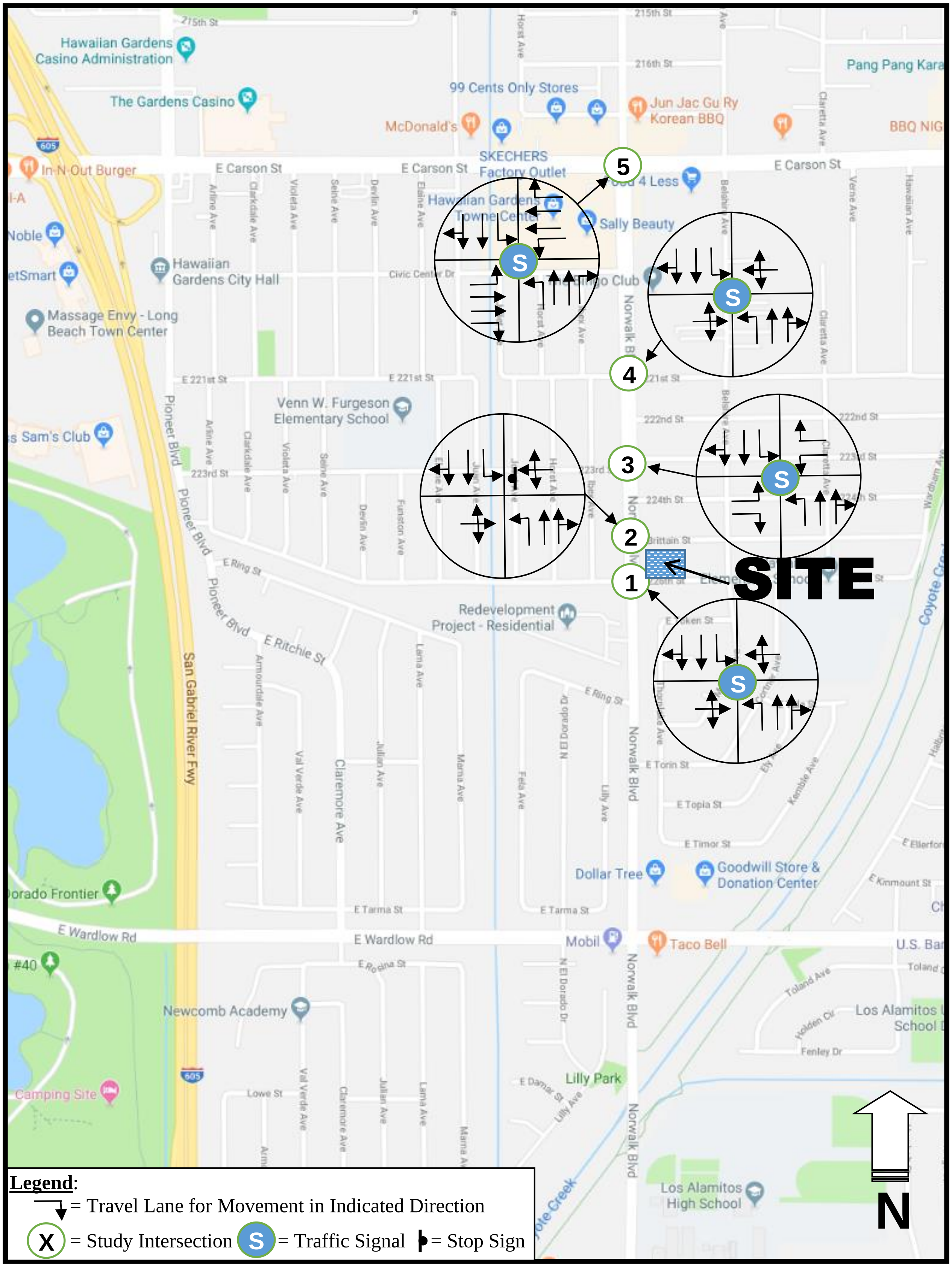
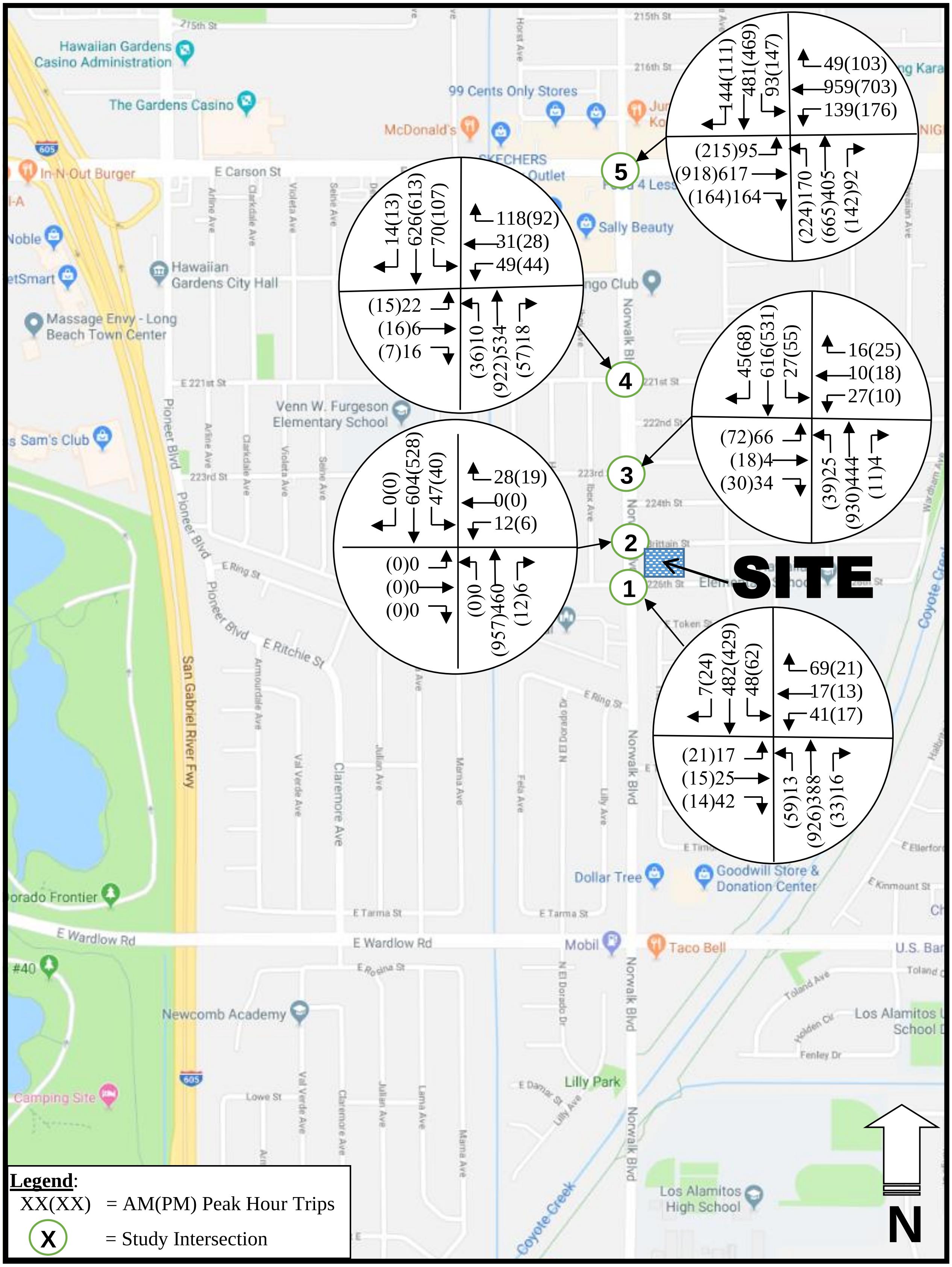


FIGURE 4: EXISTING 2019 TRAFFIC VOLUMES AT KEY INTERSECTIONS



EXISTING 2019 TRAFFIC CONDITIONS

Year 2019 existing traffic conditions were evaluated using the 2010 Highway Capacity Manual (HCM) operational delay method of level of service (LOS) analysis for signalized intersections. **Table 3** presents existing condition intersection level of service (LOS) analysis summary.

TABLE 3
EXISTING CONDITIONS (2019) LEVEL OF SERVICE SUMMARY

Intersection	Peak Hour	Existing 2019 Conditions	
		LOS	**Average Delay, Sec/Veh**
1. Norwalk Boulevard and 226th Street (Signalized)	AM PM	A A	7.7 4.2
2. Norwalk Boulevard and Brittain Street (Unsignalized)*	AM PM	B C	16.2 24.8
3. Norwalk Boulevard and 223rd Street (Signalized)	AM PM	A A	6.2 6.0
4. Norwalk Boulevard and 221st Street (Signalized)	AM PM	A A	8.4 7.3
5. Norwalk Boulevard and Carson Street (Signalized)	AM PM	C C	29.0 33.3

**Delay for the worst movement*

Detailed calculations relating to the study intersections are included in the Technical Appendix of this report.

Based on the results of this analysis, all of the 5 study intersections are operating at an acceptable level of service (i.e., LOS D or better) during the AM and PM peak hours, as shown in **Table 3**.

OPENING YEAR 2021 PRE-PROJECT CONDITIONS

A 1.0 percent per year annual traffic growth rate was applied to existing traffic volumes to create a 2021 base condition (i.e., a factor of 1.02 was applied to 2019 volumes to obtain 2021 base traffic volumes due to ambient growth). This annual traffic growth rate accounts for the population growth within the study area and traffic from any other minor projects to be developed in the study area.

Per City's records and per consultation with the neighboring City of Long Beach, there is only one (1) other related projects located within two-mile radius of the project (within the jurisdiction of the City of Long Beach) that will contribute to cumulative traffic volumes with the development of this project. This 40-unit residential project is located on the west side of Norwalk Boulevard south of 226th Street.

The location of this related project is shown in **Figure 5**.

Trip generation estimates for this related project was developed by using nationally recognized and recommended rates contained in "Trip Generation" manual, 10th edition, published by the Institute of Transportation Engineers (ITE).

Table 4 shows a summary of trip generation estimates for the related project. It is estimated that the related project will generate approximately 378 trips per average day (189 inbound and 189 outbound). The average weekday net new peak hour trips will be approximately 29 trips during the AM peak hour (7 inbound and 22 outbound), and 40 trips during the PM peak hour (25 inbound and 15 outbound).

Figure 5 also shows related project's trips distributed at the study intersections.

The projected peak hour traffic volumes from this related project were added to existing traffic volumes with ambient growth at the study intersections to represent a 2021 pre-project traffic condition for the AM and PM peak hours. **Figure 6** shows future 2021 pre-project traffic volumes at the study intersections.

This pre-project traffic condition was evaluated using the 2010 Highway Capacity Manual (HCM) operational delay method of level of service (LOS) analysis. The LOS and delays for the study intersections under 2021 pre-project conditions (without project) are shown in **Table 5**. Detailed calculations relating to the study intersections are included in the Technical Appendix of this report.

FIGURE 5: RELATED PROJECT'S LOCATION AND DISTRIBUTION OF TRIPS

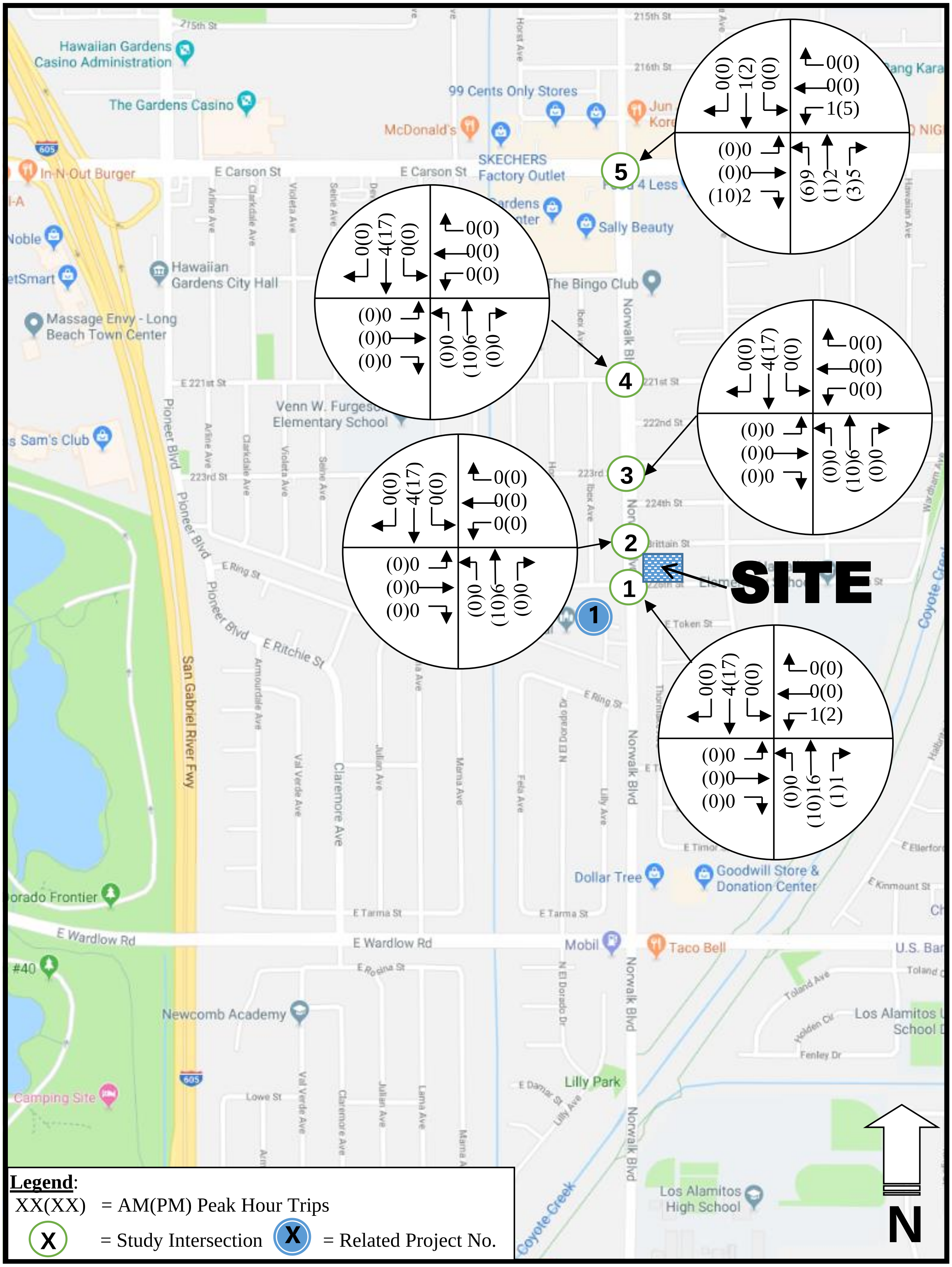


TABLE 4
TRIP GENERATION BY RELATED PROJECTS

Land Use (ITE Code)	Size & Unit	Trip Generation Rate							Average Traffic Volume						
		Daily Total	AM Peak Hour			PM Peak Hour			Daily Total	AM Peak Hour			PM Peak Hour		
			Total	%IN	%OUT	Total	%IN	%OUT		IN	OUT	Total	IN	OUT	Total
Related Project **1**: 3655 N. Norwalk Bl, Long Beach, CA – 40-DU Detached Single-family Residential Homes															
Single-family (210)	40 DU	9.44	0.74	25%	75%	0.99	63%	37%	378	7	22	29	25	15	40

Note:

All rates are average rates.

[Ref: Institute of Transportation Engineer's (ITE) "Trip Generation", 10th Edition, 2017]

FIGURE 6: FUTURE 2021 PRE-PROJECT TRAFFIC VOLUMES

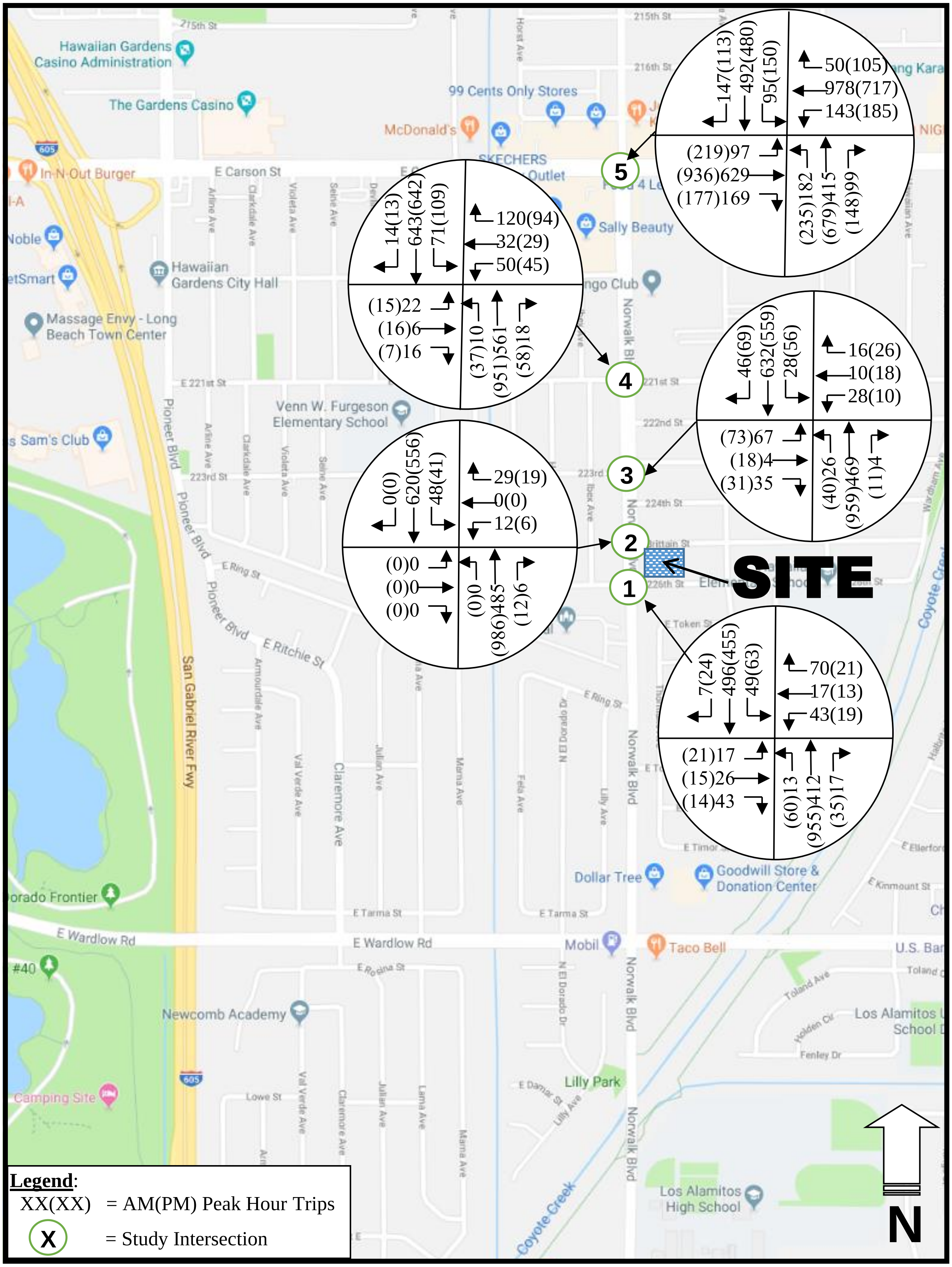


TABLE 5
2021 PRE-PROJECT FUTURE CONDITIONS LEVEL OF SERVICE SUMMARY

Intersection	Peak Hour	2021 Pre-Project Conditions	
		LOS	Average Delay, Sec/Veh
1. Norwalk Boulevard and 226th Street (Signalized)	AM PM	A A	7.7 4.7
2. Norwalk Boulevard and Brittain Street (Unsignalized)*	AM PM	C D	16.8 26.5
3. Norwalk Boulevard and 223rd Street (Signalized)	AM PM	A A	6.2 6.0
4. Norwalk Boulevard and 221st Street (Signalized)	AM PM	A A	8.5 7.8
5. Norwalk Boulevard and Carson Street (Signalized)	AM PM	C D	31.0 35.9

**Delay for the worst movement*

As the results indicate, all of the 5 study intersections will continue to operate at an acceptable level of service (i.e., LOS D or better) during the AM and PM peak hours under 2021 pre-project traffic conditions.

PROPOSED PROJECT

PROJECT DESCRIPTION

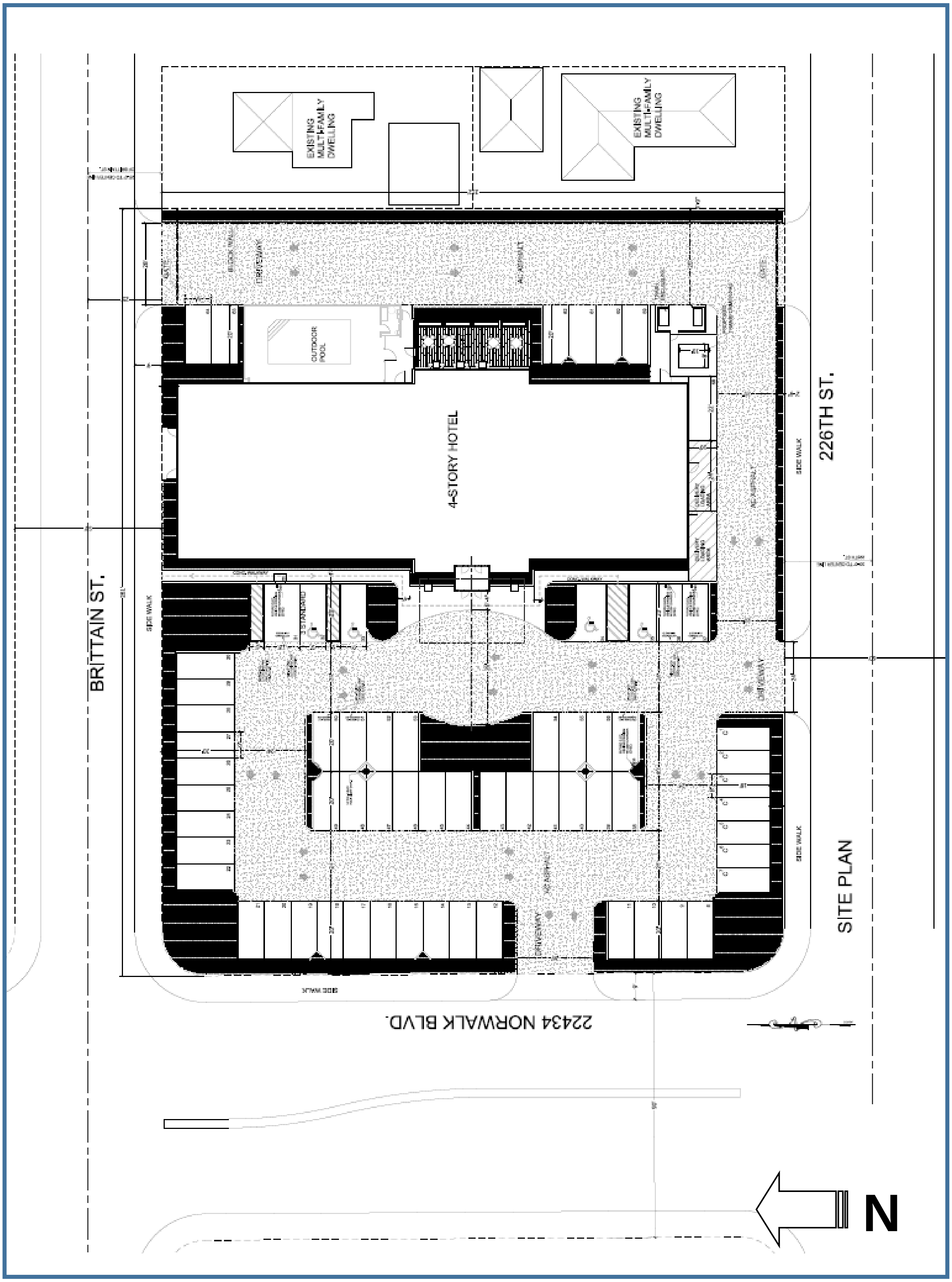
The proposed Holiday Inn Express & Suites project consists of construction of a 4-story building with a total floor area of 43,075 square feet in 4 levels for a 71-room hotel and ancillary uses, plus a total of 64 on-site parking spaces. The proposed project will be located on the northeast corner of the intersection of Norwalk Boulevard and 226th Street on a 55,107-square foot (1.25-acre) vacant parcel of land.

The project will provide two access driveways -one off Norwalk Boulevard (right-turn in and right-turn out only) and one on 226th Street. In addition, from the back of the hotel, two gated emergency access-driveways will be provided – one on 226th street the other on Brittain Street.

A total of 64 spaces (including 4 disabled spaces) for parking will be provided on-site.

Figure 7 shows the proposed site plan for the project.

FIGURE 7: PROJECT SITE PLAN



PROJECT TRIP GENERATION

In order to evaluate future traffic conditions with the proposed project, trip generation estimates were developed for the project. Trip generation rates for the project are based on the nationally recognized recommendations contained in “Trip Generation” manual, 10th edition, published by the Institute of Transportation Engineers (ITE).

Table 6 shows a summary of trip generation estimates for the project. It is estimated that the project will generate approximately 594 net trips per average day (297 inbound and 297 outbound). The average weekday net new peak hour trips will be approximately 34 trips during the AM peak hour (20 inbound and 14 outbound), and 43 trips during the PM peak hour (22 inbound and 21 outbound).

TRIP DISTRIBUTION AND ASSIGNMENT

Arrival and departure distribution patterns for project-generated traffic were estimated based upon a review of circulation patterns within the study area network and regional traffic generation and attraction characteristics.

Figure 8 depicts the regional trip distribution percentages to and from the site.

Figure 9 depicts project traffic volumes at key circulation locations during the AM and PM peak hours.

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TABLE 6
TRIP GENERATION BY HOLIDAY INN EXPRESS & SUITES PROJECT

ITE Code/Land Use	Size & Unit	Trip Generation Rate							Average Traffic Volume						
		Daily Total	AM Peak Hour			PM Peak Hour			Daily Total	AM Peak Hour			PM Peak Hour		
			Total	%IN	%OUT	Total	%IN	%OUT		IN	OUT	Total	IN	OUT	Total
Total Vehicle Trip Generation															
310 Hotel	71 Rooms	8.36	0.47	59%	41%	0.60	51%	49%	594	20	14	34	22	21	43

Note: All trip rates are average rates per Institute of Transportation Engineers (ITE)'s publication manual "Trip Generation", 10th Edition, 2017.

FIGURE 8: PERCENTAGES OF PROJECT RELATED TRIP DISTRIBUTION

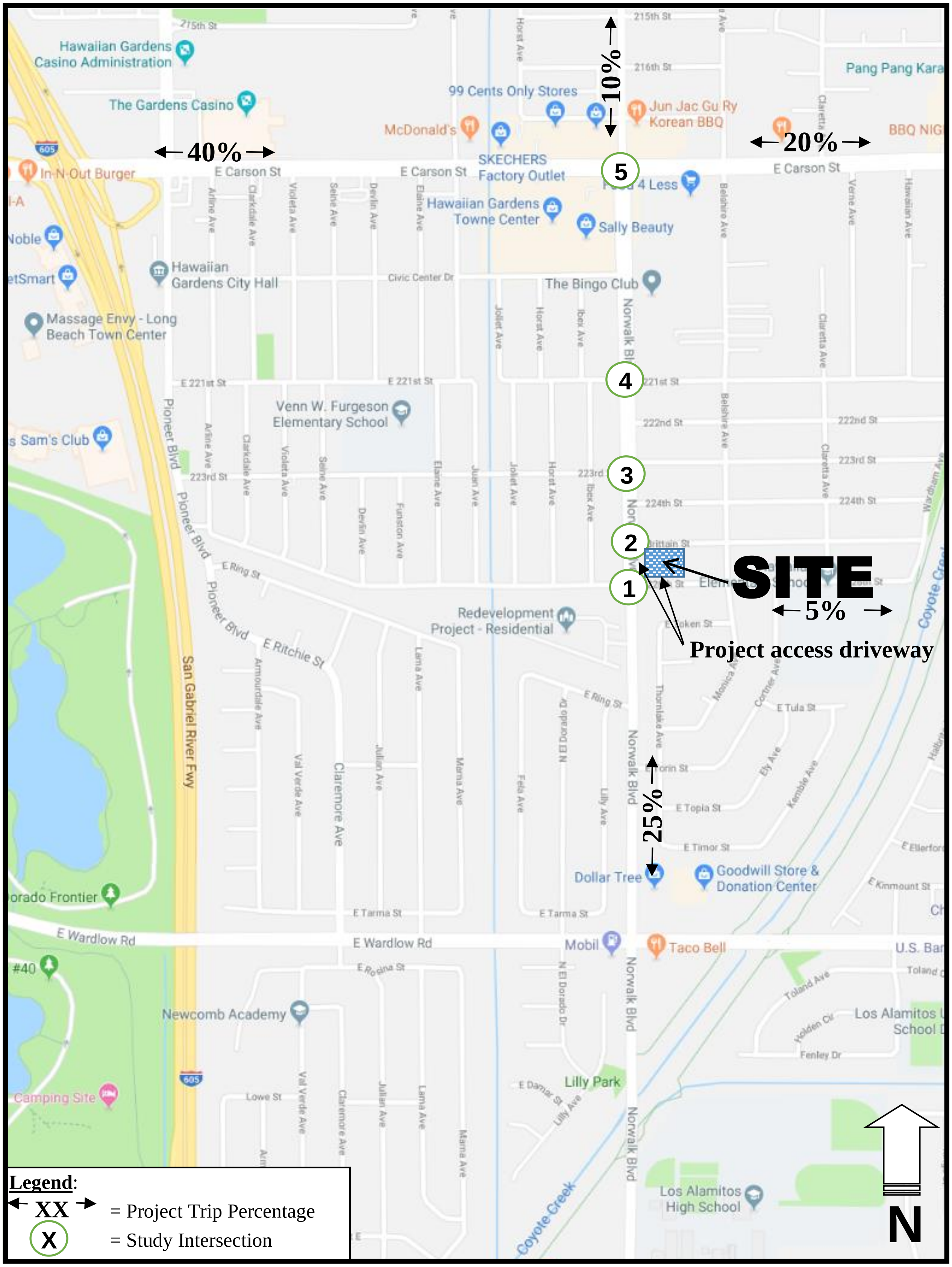
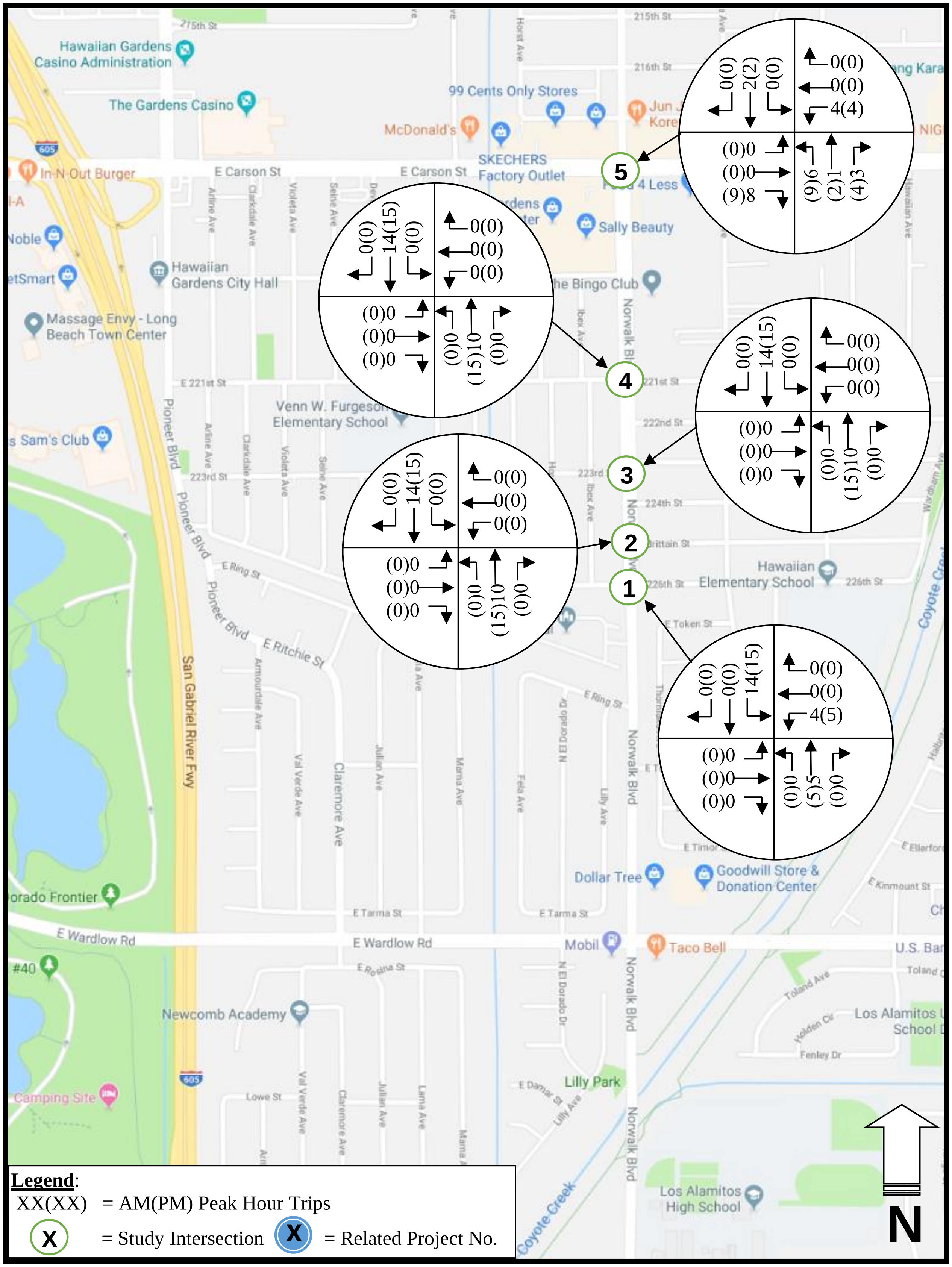


FIGURE 9: DISTRIBUTION OF PROJECT RELATED TRIPS



2021 CUMULATIVE CONDITIONS WITH PROJECT TRAFFIC

2021 POST-PROJECT CUMULATIVE TRAFFIC VOLUMES WITH PROJECT

The 2021 cumulative post-project traffic volumes were estimated by adding project related traffic volumes to the 2021 pre-project traffic volumes with 1.0% per year ambient growth and related project traffic. **Figure 10** shows Year 2020 post-project cumulative volumes for AM and PM peak hours.

Year 2021 post-project cumulative (i.e., existing plus ambient traffic plus related project plus project traffic) conditions were evaluated using the 2010 Highway Capacity Manual (HCM) operational delay method of level of service (LOS) analysis for signalized intersections. The LOS and delay for the study intersections under 2021 post-project cumulative conditions (with project) are summarized in **Table 7**. Detailed calculations relating to the study intersections are included in the Technical Appendix of this report.

The results indicate that, all of the 5 study intersections will continue to operate at an acceptable level of service (LOS) D or better (i.e., within the range of acceptable thresholds of LOS A through D) during the AM and PM peak hours under future cumulative traffic conditions with the project.

FIGURE 10: FUTURE 2021 POST-PROJECT CUMULATIVE TRAFFIC VOLUMES

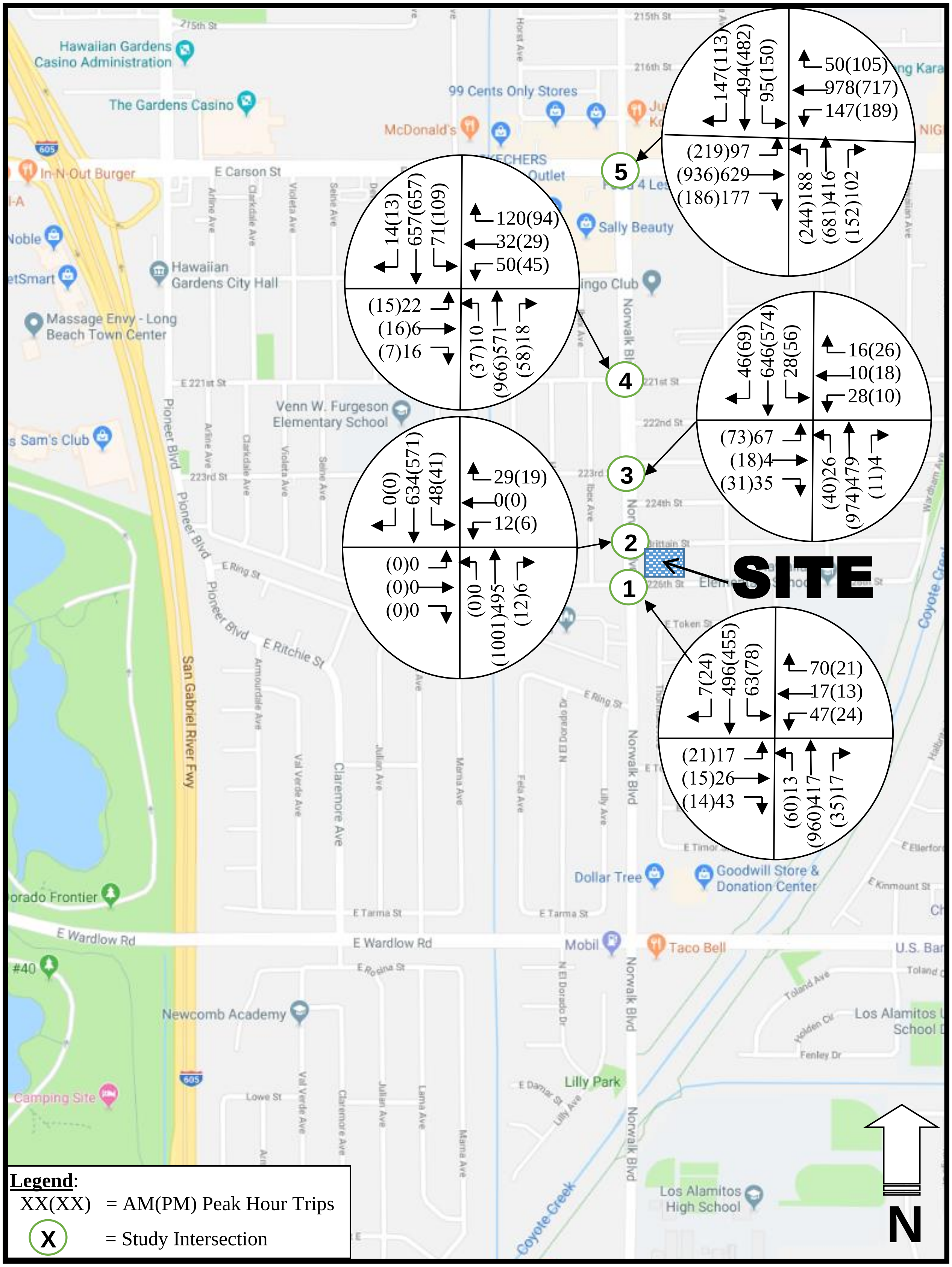


TABLE 7
FUTURE 2021 LEVEL OF SERVICE SUMMARY WITH PROJECT

Intersection	Peak Hour	2021 Cumulative With Project	
		LOS	Average Delay, Sec/Veh
1. Norwalk Boulevard and 226th Street (Signalized)	AM PM	A A	7.9 5.5
2. Norwalk Boulevard and Brittain Street (Unsignalized)*	AM PM	C D	17.3 27.4
3. Norwalk Boulevard and 223rd Street (Signalized)	AM PM	A A	6.2 6.0
4. Norwalk Boulevard and 221st Street (Signalized)	AM PM	A A	8.6 8.1
5. Norwalk Boulevard and Carson Street (Signalized)	AM PM	C D	31.1 36.8

**Delay for the worst movement*

PROJECT IMPACT AND MITIGATION MEASURES

As indicated in the previous section, all of the 5 study intersections will continue to operate at an acceptable level of service (LOS) D or better (i.e., within the range of acceptable thresholds of LOS A through D) during the AM and PM peak hours under future cumulative traffic conditions with the project. The project's traffic contribution in terms of volume to capacity ratio will be deemed insignificant.

The project's off-site traffic impact would not be considered significant at any of these intersections based on delay and level of service expected after the project. A project's impact on the circulation system is determined by comparing the level of service (LOS) and delays at key intersections under the future pre-project conditions and future post-project conditions. A LOS level D or better is acceptable for urban area intersections. A level of service worse than D (i.e., LOS E or F) is considered deficient and unacceptable. A project's traffic impact is determined to be significant if the LOS is deteriorated below D due to the project or the increase in delay is 10 seconds or more at LOS A and B, 8 seconds or more at LOS C, or 5 seconds or more at LOS D, or 2 seconds or more at LOS E, or 1 second or more and F. These significant impact criteria are defined in the traffic impact study guidelines of the City of Rialto (Ref: Traffic Impact Analysis Report Guidelines and Requirements, December 2013), which is located in the same urban area as Hawaiian Gardens and has similar urban traffic characteristics as Hawaiian Gardens'. Since Hawaiian Gardens does not have any adopted traffic study guidelines, it is deemed appropriate that these criteria are used in defining impacts in this study. For comparison, the City of Los Angeles guidelines define significant impact criteria for Transportation Infrastructure projects as follows:

Significant Transportation Impact Thresholds for Transportation Infrastructure Projects

LEVEL OF SERVICE	FINAL V/C RATIO	PROJ-RELATED INCREASE IN V/C
C	> 20 - 35	equal to or greater than 6.0 seconds
D	> 35 – 55	equal to or greater than 4.0 seconds
E	> 55 – 80	equal to or greater than 2.5 seconds
F	> 80	equal to or greater than 2.5 seconds

For development projects, the criteria are defined in terms of V/C ratio and LOS calculated by using Critical Movement Analysis (CMA) method.

(Ref: City of Los Angeles Transportation Impact Study Guidelines, December 2016,

https://ladot.lacity.org/sites/g/files/wph266/f/COLA-TISGuidelines-010517.pdf)

The neighboring Cities of Long Beach, Lakewood and Cypress define a significant traffic impact due to a project if it results in LOS E or F, and the project related traffic causes a peak hour volume-to-capacity (V/C) increase of 0.02 or higher to the critical movements. These cities do not have impact criteria defined in terms of delay using HCM methodology.

The LOS and delay for the study intersections under 2021 cumulative conditions (with project as well as without project) are summarized in **Table 8** to compare Project's traffic impact at key intersections.

TABLE 8
FUTURE 2021 LEVEL OF SERVICE SUMMARY WITH AND WITHOUT PROJECT

Intersection	Peak Hour	Future 2021 Conditions				Increase in Delay by Project, Sec/Veh
		Without Project		With Project		
		LOS	Average Delay, Sec/Veh	LOS	Average Delay, Sec?Veh	
1. Norwalk Boulevard and 226th Street (Signalized)	AM PM	A A	7.7 4.7	A A	7.9 5.5	0.2 0.8
2. Norwalk Boulevard and Brittain Street (Signalized)*	AM PM	C D	16.8 26.5	C D	17.3 27.4	0.5 0.9
3. Norwalk Boulevard and 223rd Street (Signalized)	AM PM	A A	6.2 6.0	A A	6.2 6.0	0.0 0.0
4. Norwalk Boulevard and 221st Street (Signalized)	AM PM	A A	8.5 7.8	A A	8.6 8.1	0.1 0.3
5. Norwalk Boulevard and Carson Street (Signalized)	AM PM	C D	31.0 35.9	C D	31.1 36.8	0.1 0.9

**Delay for the worst movement*

As the results indicate, the increase in delay by project traffic would not exceed the significance thresholds of project-related impacts. Therefore, the project is not expected to significantly impact traffic conditions at any of the key intersections in the vicinity.

Since the project's traffic impacts would not be significant at any of the key intersections in the vicinity, no off-site mitigation measures would be necessary for the development of this project.

SITE ACCESS ANALYSIS

The project will provide two access driveways to surface parking area - one off Norwalk Boulevard (right-turn-in and right-turn out only) and the other off 226th Street. In addition, from the back of the hotel, two gated emergency access-driveways will be provided – one on 226th street the other on Brittain Street. **Figure 11** shows total project traffic at the driveways.

A maximum of 20 vehicles will enter the driveway on Norwalk Boulevard from the south by making a right-turn movement during the peak hour. A maximum of 15 vehicles will exit the site during the peak hour through this driveway to travel north by making a right-turn movement.

FIGURE 11: PROJECT TRAFFIC AT DRIVEWAYS

A maximum of 2 vehicles will enter the driveway on 226th from the east by making a right-turn movement during the peak hour. A maximum of 5 vehicles will exit the site during the peak hour through this driveway to travel west by making a right-turn movement. The low turn volume at the driveways is not expected to cause any queuing at the driveways.

The HCM analysis sheet indicates a 95% queue length of 76 feet will form after 2 cycles on the southbound left-turn pocket at the intersection of Norwalk Boulevard and 226th Street during the PM peak hour. However, the length of the pocket is approximately 110 feet; therefore, impact to the left- or U-turning vehicles from this left-turn lane will not be significant and through traffic on the adjacent lane will not be blocked.

Adequate sight distance is available from the driveway along the north and south directions on Norwalk Boulevard and also along east and west directions along 226th Street.

The driveway on Norwalk Boulevard should be striped for right turn out movement only, with a right-arrow pavement marking. A right-turn arrow sign along with a Stop sign should also be posted at this driveway for exiting vehicles.

PARKING DEMAND ANALYSIS

Adequate parking spaces will need to be provided on-site for the proposed Holiday Inn Express & Suites project in accordance with the parking code requirements of the City of Hawaiian Gardens.

The City's parking code requires 1 parking space for each living unit of a hotel plus 1 parking space for each employee and 2 spaces for the manager. Therefore, for the 71-room hotel, a total of 76 parking spaces will be required assuming 3 employees and 1 manager to be working during the largest shift (Calculation: 1 space x 71 rooms + 1 space x 3 employees + 2 spaces x 1 manager = 76 spaces).

The project's site plan shows that surface parking will consist of a total of 64 marked parking spaces (including 4 disabled parking spaces) to be provided in front and around the hotel building. This indicates parking shortage of 12 spaces during the hotel's peak demand hours. However, hotels are typically 80% occupied due to repairs and maintenance work. If parking requirement is applied to the project's 80% occupancy, the total parking spaces required will be 62 (Calculation: 1 space x 71 rooms x 80% occupancy + 1 space x 3 employees + 2 spaces x 1 manager = 57 + 3 + 2 = 62 spaces). Therefore, 64 spaces shown on the site plan will adequately satisfy project's parking demand per code. In addition, the project applicant has also applied to the City for a parking variance, if needed.

The parking area will have a total of 6 spaces marked for designated parking for low-emitting, fuel-efficient and carpool/van pool vehicles, per requirements of California Green Building Code (CGBC). The code requires at least 6 spaces to be designated for such "clean-air" vehicle parking when the parking area has 51 to 75 spaces. In addition, a total of 4 spaces will have access to electrical charging stations. These spaces are included in the calculation of parking requirement for the project, i.e., 62 spaces.

CONCLUSION

Based on the results of the traffic impact analysis, the proposed Holiday Inn Express & Suites project would not significantly impact any of the 5 key intersections analyzed in the surrounding roadway system. The addition of project traffic will not increase delay at any intersection beyond the significance thresholds of project related impacts. Therefore, no off-site mitigation measures would be necessary at any intersection for the development of this project. All the study intersections will continue to perform at acceptable levels of service (i.e., at LOS D or better) during the AM and PM peak hours.

Per City of Hawaiian Gardens' parking code, 1 parking space is required for each living unit of a hotel plus 1 parking space for each employee and 2 spaces for the manager. Therefore, for the 71-room hotel, a total of 76 parking spaces will be required assuming 3 employees and 1 manager to be working during the largest shift. The project's site plan shows that surface parking will consist of a total of 64 marked parking spaces (including 4 disabled parking spaces) to be provided in front and around the hotel building. This indicates parking shortage of 12 spaces during the hotel's peak demand hours. However, hotels are typically 80% occupied due to repairs and maintenance work. If parking requirement is applied to the project's 80% occupancy, the total parking spaces required will be 62. Therefore, 64 spaces shown on the site plan will adequately satisfy project's parking demand per code. In addition, the project applicant has also applied to the City for a parking variance.

The project will provide two access driveways to surface parking area off - one off Norwalk Boulevard (right-turn-in and right-turn out only) and the other off 226th Street. In addition, from the back of the hotel, two gated emergency access-driveways will be provided – one on 226th street the other on Brittain Street. The project's primary driveway on Norwalk Boulevard will have a maximum of 20 vehicle entering and 15 vehicles exiting during the peak hours. This low turn volume at the driveways is not expected to cause any queuing at the driveways. The southbound left-turn pocket at the intersection of Norwalk Boulevard and 226th Street is expected to have a maximum queue length of 76 feet during the PM peak hour. However, the length of the pocket is approximately 110 feet; therefore, impact to the left- or U-turning vehicles from this left-turn lane will not be significant and through traffic on the adjacent lane will not be blocked.

Adequate sight distance is available from the driveway along the north and south directions on Norwalk Boulevard and also along east and west directions along 226th Street. However, the driveway on Norwalk Boulevard should be striped for right turn out movement only, with a right-arrow pavement marking. A right-turn arrow sign along with a Stop sign should also be posted at this driveway for exiting vehicles.

Technical Appendix

Existing 2019 Traffic Counts
of Turning Movements
and
Field Geometrics

Intersection of Norwalk Boulevard and 226th Street

CITY TRAFFIC COUNTERS
WWW.CTCOUNTERS.COM

File Name : Norwalk_226th
Site Code : 00000000
Start Date : 5/8/2019
Page No : 1

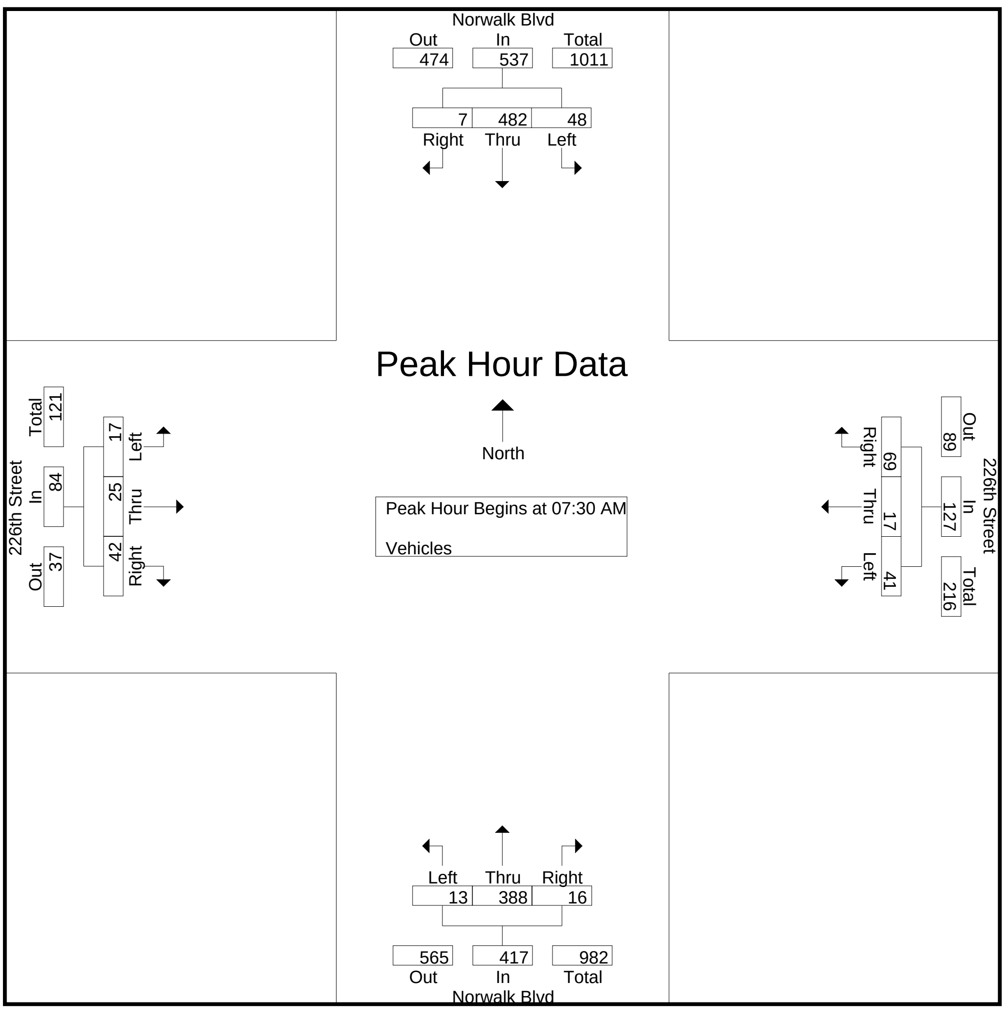
Groups Printed- Vehicles

	Norwalk Blvd Southbound			226th Street Westbound			Norwalk Blvd Northbound			226th Street Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	4	78	3	4	0	10	3	54	2	4	2	7	171
07:15 AM	12	89	5	4	2	15	1	48	2	6	5	10	199
07:30 AM	13	158	2	13	7	15	0	107	7	3	7	10	342
07:45 AM	19	142	3	15	6	20	4	123	4	1	12	11	360
Total	48	467	13	36	15	60	8	332	15	14	26	38	1072
08:00 AM	7	90	1	10	1	8	5	84	4	6	4	8	228
08:15 AM	9	92	1	3	3	26	4	74	1	7	2	13	235
08:30 AM	4	96	3	11	1	8	7	80	2	9	1	4	226
08:45 AM	3	124	5	6	0	8	1	65	3	9	2	7	233
Total	23	402	10	30	5	50	17	303	10	31	9	32	922
04:00 PM	14	104	4	3	1	7	10	186	8	3	2	10	352
04:15 PM	6	102	8	2	1	9	5	193	11	2	3	4	346
04:30 PM	9	119	9	3	0	8	20	166	4	10	0	3	351
04:45 PM	12	105	3	6	5	9	19	155	7	5	0	8	334
Total	41	430	24	14	7	33	54	700	30	20	5	25	1383
05:00 PM	15	93	9	8	3	7	11	223	8	4	3	2	386
05:15 PM	21	112	7	3	4	8	25	269	8	9	6	5	477
05:30 PM	15	110	2	2	2	2	13	228	7	5	2	2	390
05:45 PM	11	114	6	4	4	4	10	206	10	3	4	5	381
Total	62	429	24	17	13	21	59	926	33	21	15	14	1634
Grand Total	174	1728	71	97	40	164	138	2261	88	86	55	109	5011
Apprch %	8.8	87.6	3.6	32.2	13.3	54.5	5.5	90.9	3.5	34.4	22	43.6	
Total %	3.5	34.5	1.4	1.9	0.8	3.3	2.8	45.1	1.8	1.7	1.1	2.2	

CITY TRAFFIC COUNTERS
WWW.CTCOUNTERS.COM

File Name : Norwalk_226th
Site Code : 00000000
Start Date : 5/8/2019
Page No : 2

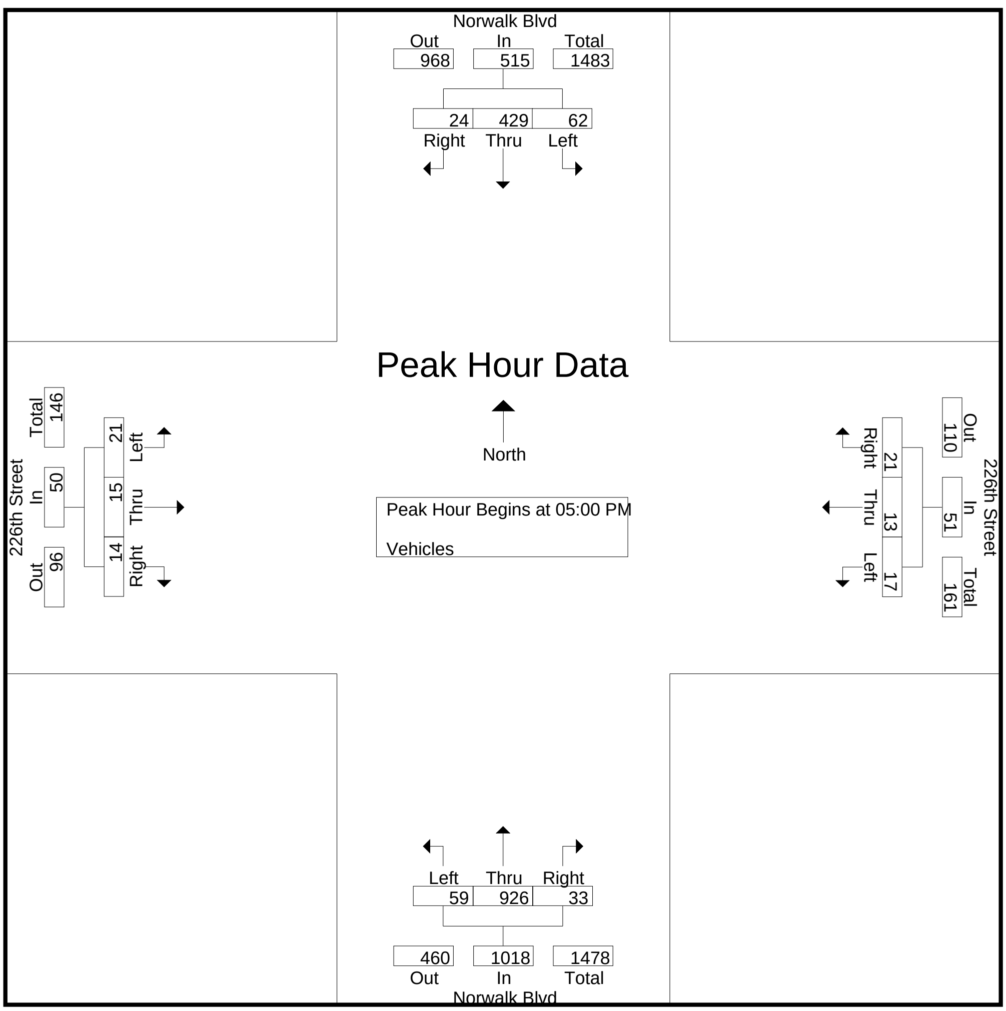
	Norwalk Blvd Southbound				226th Street Westbound				Norwalk Blvd Northbound				226th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	13	**158**	2	**173**	13	**7**	15	35	0	107	**7**	114	3	7	10	20	342
07:45 AM	**19**	142	**3**	164	**15**	6	20	**41**	4	**123**	4	**131**	1	**12**	11	**24**	**360**
08:00 AM	7	90	1	98	10	1	8	19	**5**	84	4	93	6	4	8	18	228
08:15 AM	9	92	1	102	3	3	**26**	32	4	74	1	79	**7**	2	**13**	22	235
Total Volume	48	482	7	537	41	17	69	127	13	388	16	417	17	25	42	84	1165
% App. Total	8.9	89.8	1.3		32.3	13.4	54.3		3.1	93	3.8		20.2	29.8	50		
PHF	.632	.763	.583	.776	.683	.607	.663	.774	.650	.789	.571	.796	.607	.521	.808	.875	.809



CITY TRAFFIC COUNTERS
WWW.CTCOUNTERS.COM

File Name : Norwalk_226th
Site Code : 00000000
Start Date : 5/8/2019
Page No : 3

	Norwalk Blvd Southbound				226th Street Westbound				Norwalk Blvd Northbound				226th Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	15	93	**9**	117	**8**	3	7	**18**	11	223	8	242	4	3	2	9	386
05:15 PM	**21**	112	7	**140**	3	**4**	**8**	15	**25**	**269**	8	**302**	**9**	**6**	**5**	**20**	**477**
05:30 PM	15	110	2	127	2	2	2	6	13	228	7	248	5	2	2	9	390
05:45 PM	11	**114**	6	131	4	4	4	12	10	206	**10**	226	3	4	5	12	381
Total Volume	62	429	24	515	17	13	21	51	59	926	33	1018	21	15	14	50	1634
% App. Total	12	83.3	4.7		33.3	25.5	41.2		5.8	91	3.2		42	30	28		
PHF	.738	.941	.667	.920	.531	.813	.656	.708	.590	.861	.825	.843	.583	.625	.700	.625	.856



Intersection of Norwalk Boulevard and Brittain Street

CITY TRAFFIC COUNTERS
WWW.CTCOUNTERS.COM

File Name : Norwalk_Brittain
Site Code : 00000000
Start Date : 5/8/2019
Page No : 1

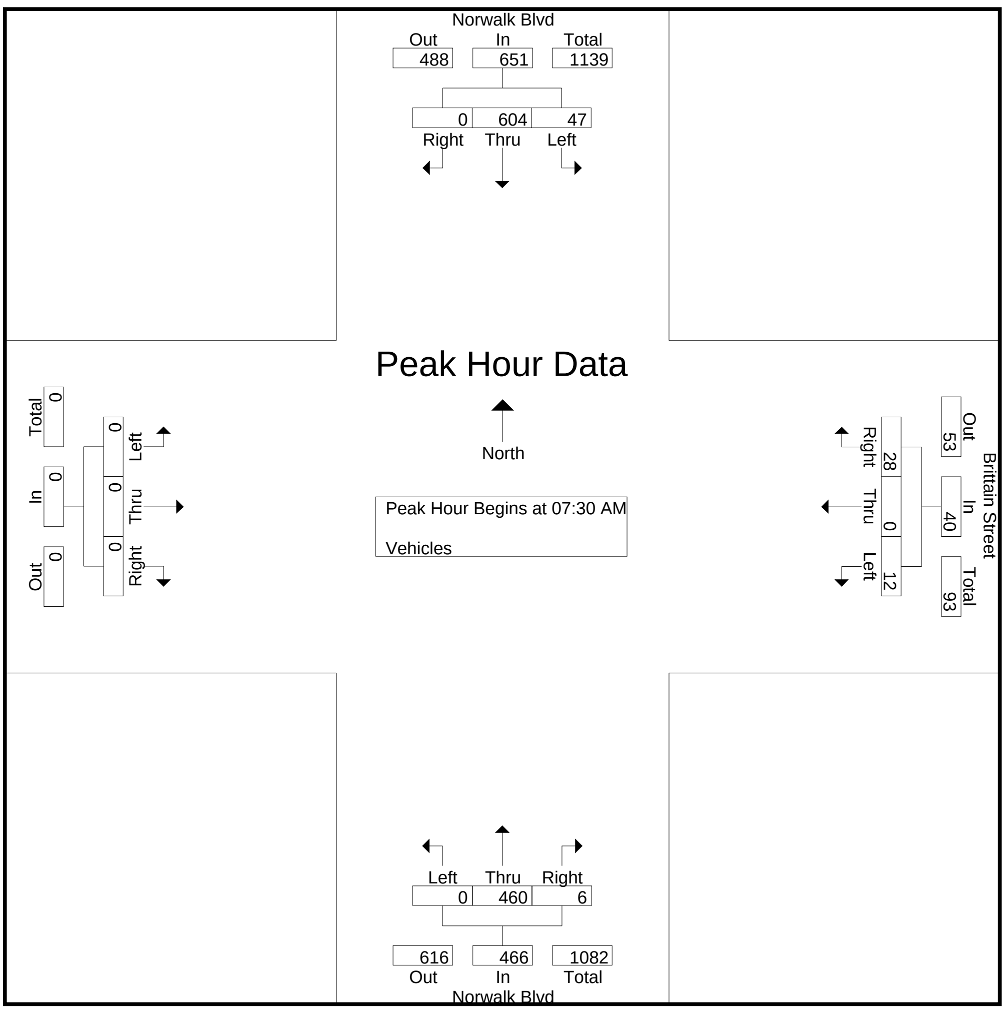
Groups Printed- Vehicles

	Norwalk Blvd Southbound			Brittain Street Westbound			Norwalk Blvd Northbound			Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	5	101	0	5	0	6	0	73	2	0	0	0	192
07:15 AM	13	130	0	3	0	7	0	71	3	0	0	0	227
07:30 AM	13	171	0	3	0	12	0	122	1	0	0	0	322
07:45 AM	20	192	0	3	0	4	0	133	2	0	0	0	354
Total	51	594	0	14	0	29	0	399	8	0	0	0	1095
08:00 AM	7	122	0	5	0	5	0	99	0	0	0	0	238
08:15 AM	7	119	0	1	0	7	0	106	3	0	0	0	243
08:30 AM	8	126	0	3	0	4	0	98	1	0	0	0	240
08:45 AM	8	140	0	0	0	2	0	85	2	0	0	0	237
Total	30	507	0	9	0	18	0	388	6	0	0	0	958
04:00 PM	8	121	0	0	0	4	0	189	5	0	0	0	327
04:15 PM	4	124	0	2	0	6	0	207	4	0	0	0	347
04:30 PM	5	138	0	0	0	0	0	191	3	0	0	0	337
04:45 PM	10	138	0	3	0	2	0	184	0	0	0	0	337
Total	27	521	0	5	0	12	0	771	12	0	0	0	1348
05:00 PM	9	117	0	0	0	5	0	231	0	0	0	0	362
05:15 PM	10	151	0	2	0	5	0	284	2	0	0	0	454
05:30 PM	6	128	0	3	0	5	0	229	5	0	0	0	376
05:45 PM	15	132	0	1	0	4	0	213	5	0	0	0	370
Total	40	528	0	6	0	19	0	957	12	0	0	0	1562
Grand Total	148	2150	0	34	0	78	0	2515	38	0	0	0	4963
Apprch %	6.4	93.6	0	30.4	0	69.6	0	98.5	1.5	0	0	0	
Total %	3	43.3	0	0.7	0	1.6	0	50.7	0.8	0	0	0	

CITY TRAFFIC COUNTERS
WWW.CTCOUNTERS.COM

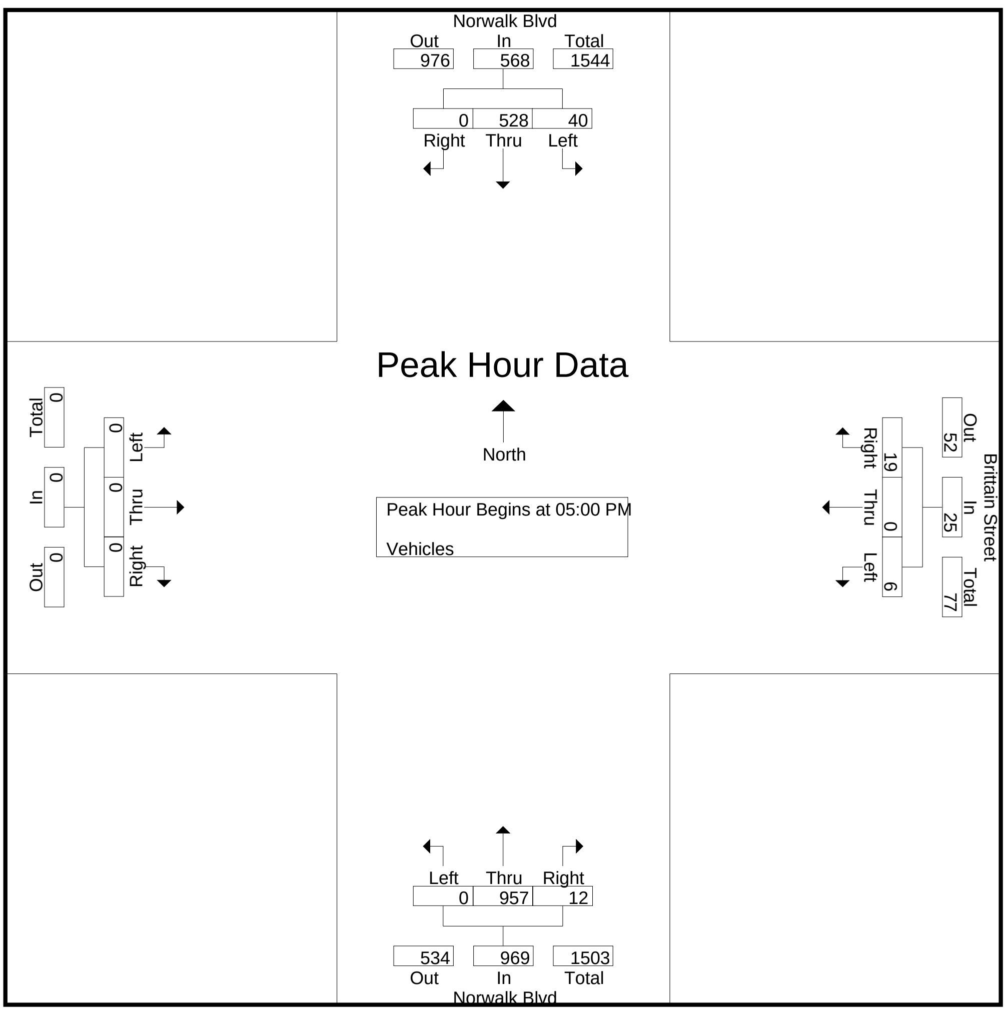
File Name : Norwalk_Brittain
Site Code : 00000000
Start Date : 5/8/2019
Page No : 2

	Norwalk Blvd Southbound				Brittain Street Westbound				Norwalk Blvd Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	13	171	0	184	3	0	**12**	**15**	0	122	1	123	0	0	0	0	322
07:45 AM	**20**	**192**	0	**212**	3	0	4	7	0	**133**	2	**135**	0	0	0	0	**354**
08:00 AM	7	122	0	129	**5**	0	5	10	0	99	0	99	0	0	0	0	238
08:15 AM	7	119	0	126	1	0	7	8	0	106	**3**	109	0	0	0	0	243
Total Volume	47	604	0	651	12	0	28	40	0	460	6	466	0	0	0	0	1157
% App. Total	7.2	92.8	0		30	0	70		0	98.7	1.3		0	0	0		
PHF	.588	.786	.000	.768	.600	.000	.583	.667	.000	.865	.500	.863	.000	.000	.000	.000	.817



File Name : Norwalk_Brittain
Site Code : 00000000
Start Date : 5/8/2019
Page No : 3

	Norwalk Blvd Southbound				Brittain Street Westbound				Norwalk Blvd Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	9	117	0	126	0	0	**5**	5	0	231	0	231	0	0	0	0	362
05:15 PM	10	**151**	0	**161**	2	0	5	7	0	**284**	2	**286**	0	0	0	0	**454**
05:30 PM	6	128	0	134	**3**	0	5	**8**	0	229	**5**	234	0	0	0	0	376
05:45 PM	**15**	132	0	147	1	0	4	5	0	213	5	218	0	0	0	0	370
Total Volume	40	528	0	568	6	0	19	25	0	957	12	969	0	0	0	0	1562
% App. Total	7	93	0		24	0	76		0	98.8	1.2		0	0	0		
PHF	.667	.874	.000	.882	.500	.000	.950	.781	.000	.842	.600	.847	.000	.000	.000	.000	.860



Intersection of Norwalk Boulevard and 223rd Street

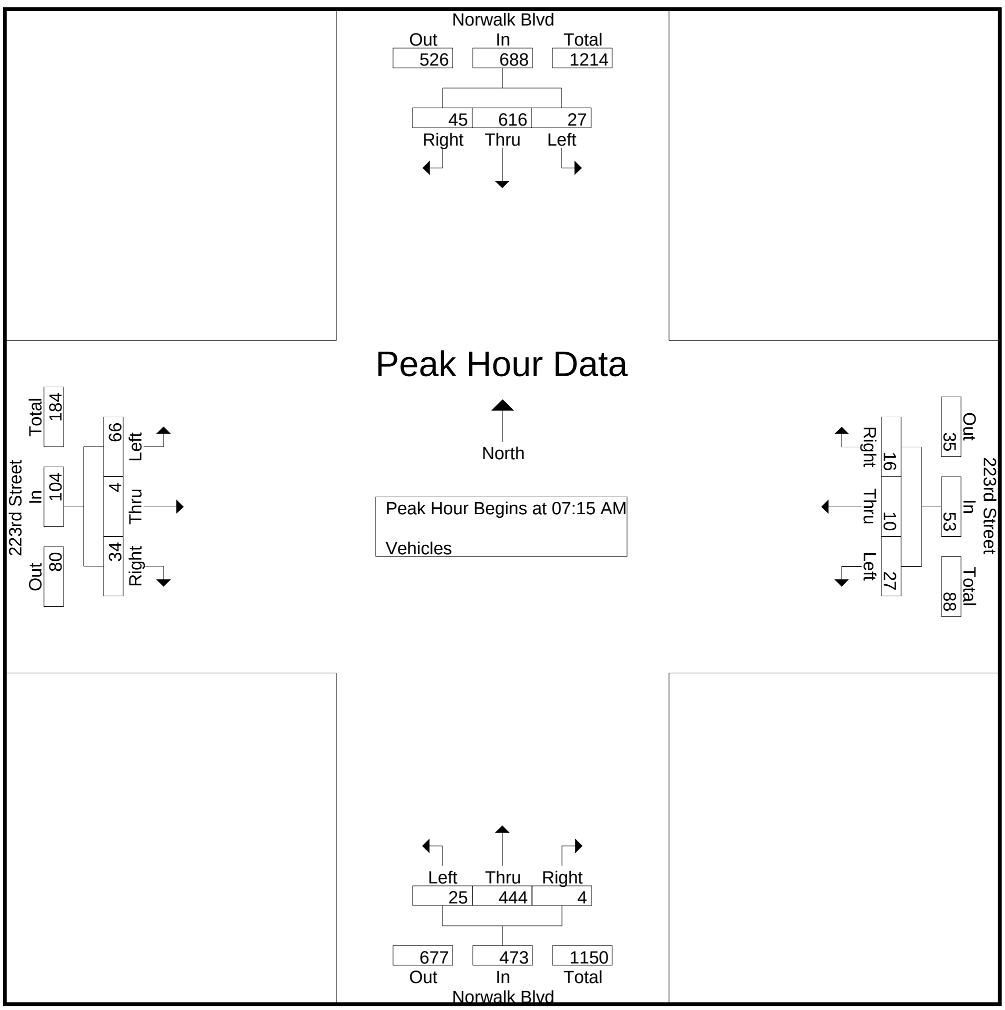
File Name : Norwalk_223rd
Site Code : 00000000
Start Date : 5/8/2019
Page No : 1

Groups Printed- Vehicles

	Norwalk Blvd Southbound			**223rd Street Westbound**			**Norwalk Blvd Northbound**			**223rd Street Eastbound**			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	3	91	4	1	1	1	0	89	0	23	1	7	221
07:15 AM	5	139	12	7	1	5	3	83	2	19	0	10	286
07:30 AM	8	183	13	8	2	4	5	131	0	17	2	4	377
07:45 AM	6	181	13	9	3	5	8	135	1	13	0	15	389
Total	22	594	42	25	7	15	16	438	3	72	3	36	1273
08:00 AM	8	113	7	3	4	2	9	95	1	17	2	5	266
08:15 AM	5	113	7	7	5	4	5	105	0	12	1	7	271
08:30 AM	4	121	6	2	1	4	5	105	1	24	3	7	283
08:45 AM	3	142	10	2	1	4	7	81	0	18	4	7	279
Total	20	489	30	14	11	14	26	386	2	71	10	26	1099
04:00 PM	5	128	13	2	3	4	16	175	0	17	3	3	369
04:15 PM	5	117	20	3	1	5	8	199	4	5	6	4	377
04:30 PM	12	136	14	4	1	6	11	179	1	12	3	7	386
04:45 PM	4	135	19	4	0	4	5	189	3	14	6	6	389
Total	26	516	66	13	5	19	40	742	8	48	18	20	1521
05:00 PM	16	116	13	2	2	11	6	230	4	16	5	7	428
05:15 PM	19	142	15	2	5	4	17	278	4	19	3	14	522
05:30 PM	11	135	24	3	6	4	9	221	2	19	6	3	443
05:45 PM	9	138	16	3	5	6	7	201	1	18	4	6	414
Total	55	531	68	10	18	25	39	930	11	72	18	30	1807
Grand Total	123	2130	206	62	41	73	121	2496	24	263	49	112	5700
Apprch %	5	86.6	8.4	35.2	23.3	41.5	4.6	94.5	0.9	62	11.6	26.4	
Total %	2.2	37.4	3.6	1.1	0.7	1.3	2.1	43.8	0.4	4.6	0.9	2	

File Name : Norwalk_223rd
Site Code : 00000000
Start Date : 5/8/2019
Page No : 2

	Norwalk Blvd Southbound				223rd Street Westbound				Norwalk Blvd Northbound				223rd Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	5	139	12	156	7	1	**5**	13	3	83	**2**	88	**19**	0	10	**29**	286
07:30 AM	**8**	**183**	**13**	**204**	8	2	4	14	5	131	0	136	17	**2**	4	23	377
07:45 AM	6	181	13	200	**9**	3	5	**17**	8	**135**	1	**144**	13	0	**15**	28	**389**
08:00 AM	8	113	7	128	3	**4**	2	9	**9**	95	1	105	17	2	5	24	266
Total Volume	27	616	45	688	27	10	16	53	25	444	4	473	66	4	34	104	1318
% App. Total	3.9	89.5	6.5		50.9	18.9	30.2		5.3	93.9	0.8		63.5	3.8	32.7		
PHF	.844	.842	.865	.843	.750	.625	.800	.779	.694	.822	.500	.821	.868	.500	.567	.897	.847



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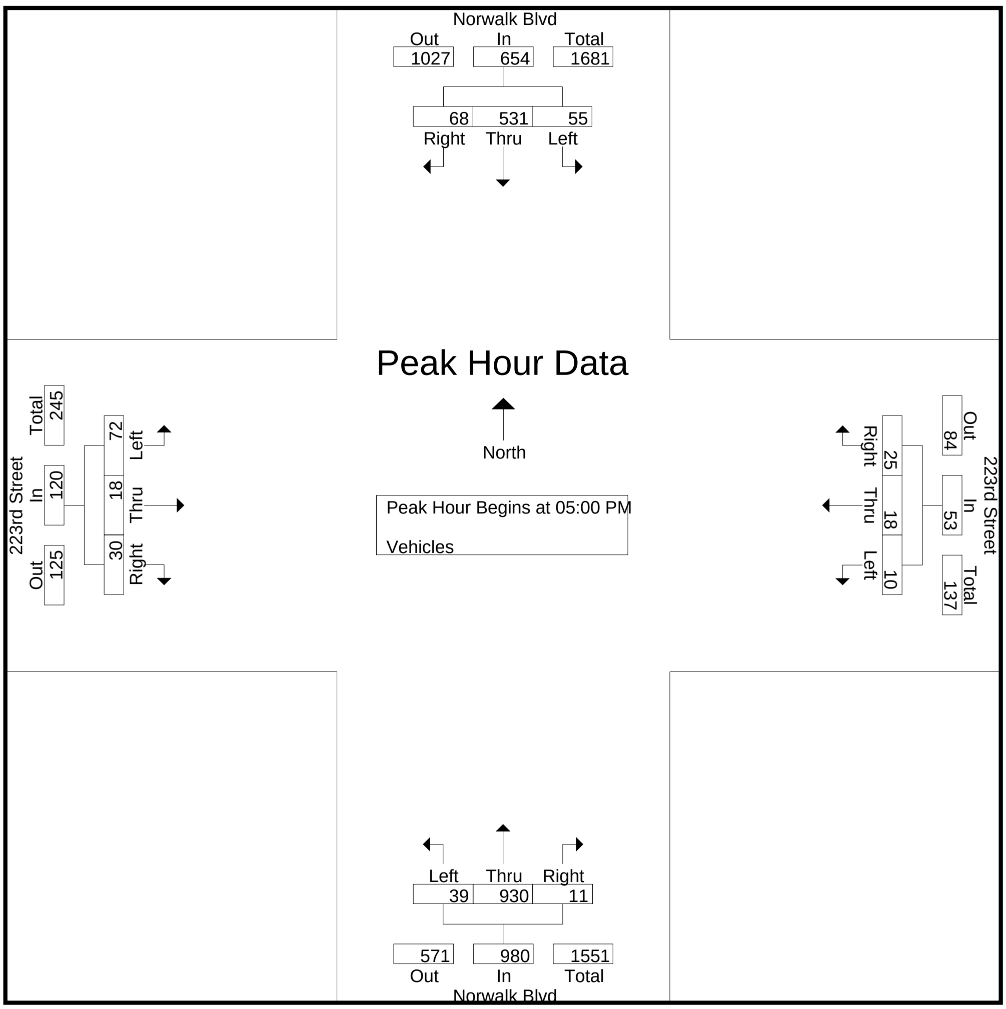
File Name : Norwalk_223rd
Site Code : 00000000
Start Date : 5/8/2019
Page No : 3

	Norwalk Blvd Southbound				223rd Street Westbound				Norwalk Blvd Northbound				223rd Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	16	116	13	145	2	2	**11**	**15**	6	230	**4**	240	16	5	7	28	428
05:15 PM	**19**	**142**	15	**176**	2	5	4	11	**17**	**278**	4	**299**	**19**	3	**14**	**36**	**522**
05:30 PM	11	135	**24**	170	**3**	**6**	4	13	9	221	2	232	19	**6**	3	28	443
05:45 PM	9	138	16	163	3	5	6	14	7	201	1	209	18	4	6	28	414
Total Volume	55	531	68	654	10	18	25	53	39	930	11	980	72	18	30	120	1807
% App. Total	8.4	81.2	10.4		18.9	34	47.2		4	94.9	1.1		60	15	25		
PHF	.724	.935	.708	.929	.833	.750	.568	.883	.574	.836	.688	.819	.947	.750	.536	.833	.865



Intersection of Norwalk Boulevard and 221st Street

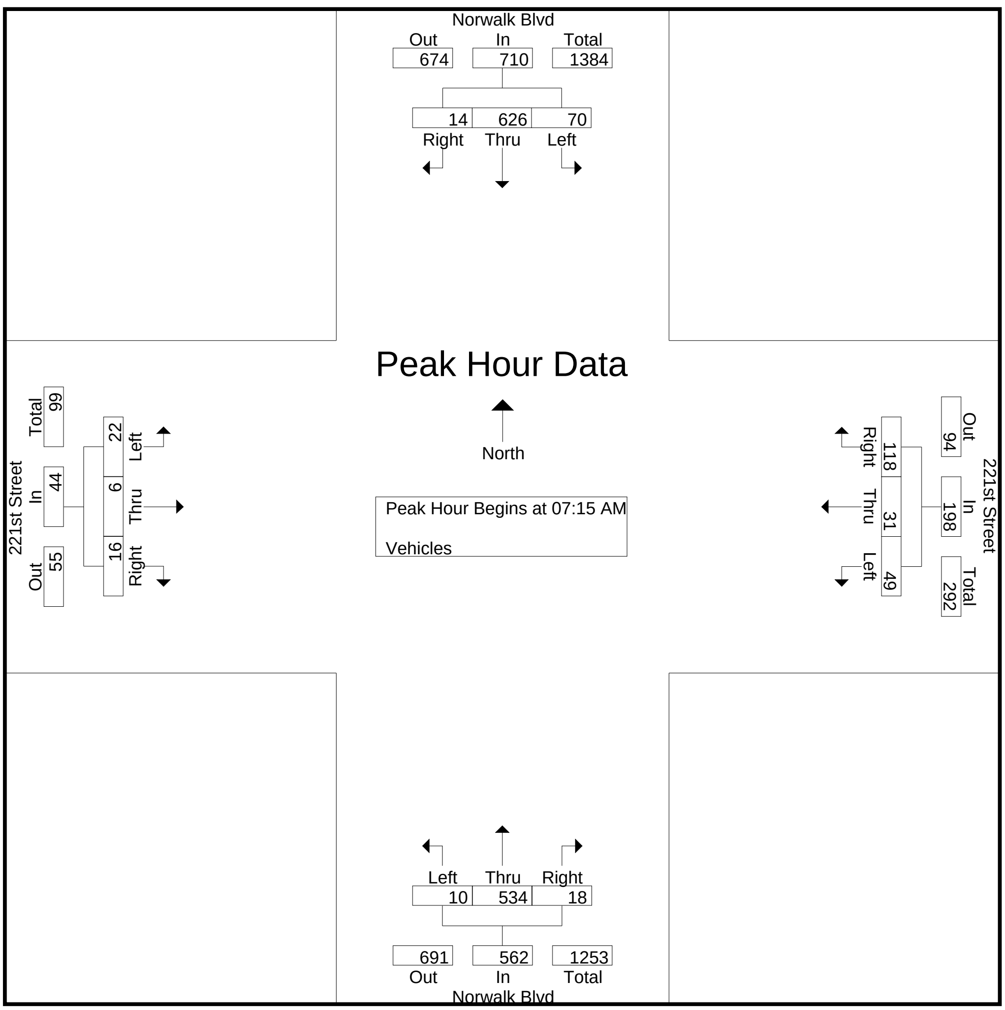
File Name : Norwalk_221st
Site Code : 00000000
Start Date : 5/8/2019
Page No : 1

Groups Printed- Vehicles

	Norwalk Blvd Southbound			221st Street Westbound			Norwalk Blvd Northbound			221st Street Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	4	96	1	3	4	11	1	110	2	6	4	1	243
07:15 AM	16	142	3	17	12	38	3	106	5	7	0	4	353
07:30 AM	24	172	5	16	7	32	3	162	3	6	1	6	437
07:45 AM	14	191	4	12	5	20	3	144	6	5	4	3	411
Total	58	601	13	48	28	101	10	522	16	24	9	14	1444
08:00 AM	16	121	2	4	7	28	1	122	4	4	1	3	313
08:15 AM	11	126	4	10	1	21	3	121	4	6	3	3	313
08:30 AM	12	109	4	7	9	16	4	122	3	6	1	2	295
08:45 AM	20	137	5	16	7	14	5	100	4	7	4	3	322
Total	59	493	15	37	24	79	13	465	15	23	9	11	1243
04:00 PM	24	153	5	8	6	17	4	191	13	3	3	1	428
04:15 PM	15	119	6	14	5	12	7	208	16	5	3	2	412
04:30 PM	25	156	4	11	10	13	5	179	11	5	2	7	428
04:45 PM	21	137	6	10	8	21	3	212	15	2	1	3	439
Total	85	565	21	43	29	63	19	790	55	15	9	13	1707
05:00 PM	23	157	2	10	3	17	7	226	15	3	4	2	469
05:15 PM	19	170	4	14	12	16	11	271	21	5	7	3	553
05:30 PM	35	149	3	9	5	26	10	212	11	4	2	1	467
05:45 PM	30	137	4	11	8	33	8	213	10	3	3	1	461
Total	107	613	13	44	28	92	36	922	57	15	16	7	1950
Grand Total	309	2272	62	172	109	335	78	2699	143	77	43	45	6344
Apprch %	11.7	86	2.3	27.9	17.7	54.4	2.7	92.4	4.9	46.7	26.1	27.3	
Total %	4.9	35.8	1	2.7	1.7	5.3	1.2	42.5	2.3	1.2	0.7	0.7	

File Name : Norwalk_221st
Site Code : 00000000
Start Date : 5/8/2019
Page No : 2

	Norwalk Blvd Southbound				221st Street Westbound				Norwalk Blvd Northbound				221st Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	16	142	3	161	**17**	**12**	**38**	**67**	**3**	106	5	114	**7**	0	4	11	353
07:30 AM	**24**	172	**5**	201	16	7	32	55	3	**162**	3	**168**	6	1	**6**	**13**	**437**
07:45 AM	14	**191**	4	**209**	12	5	20	37	3	144	**6**	153	5	**4**	3	12	411
08:00 AM	16	121	2	139	4	7	28	39	1	122	4	127	4	1	3	8	313
Total Volume	70	626	14	710	49	31	118	198	10	534	18	562	22	6	16	44	1514
% App. Total	9.9	88.2	2		24.7	15.7	59.6		1.8	95	3.2		50	13.6	36.4		
PHF	.729	.819	.700	.849	.721	.646	.776	.739	.833	.824	.750	.836	.786	.375	.667	.846	.866



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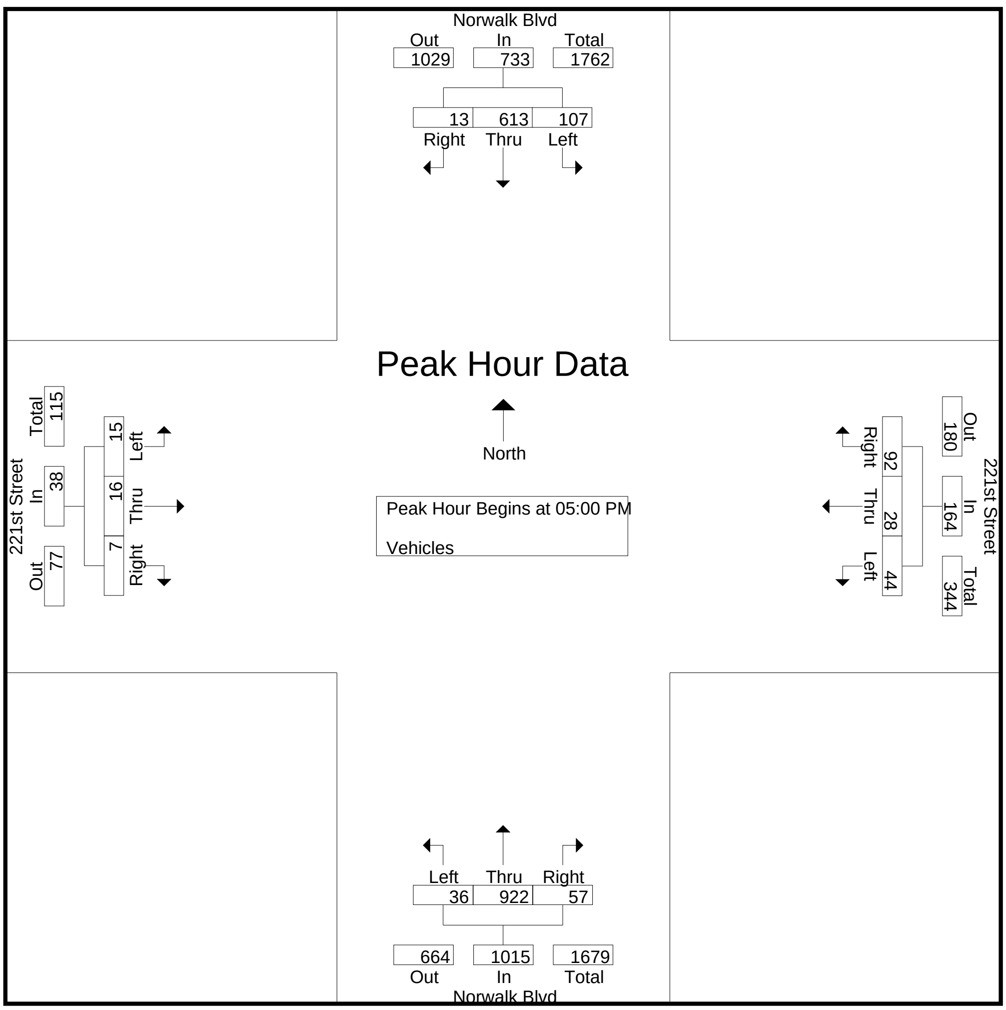
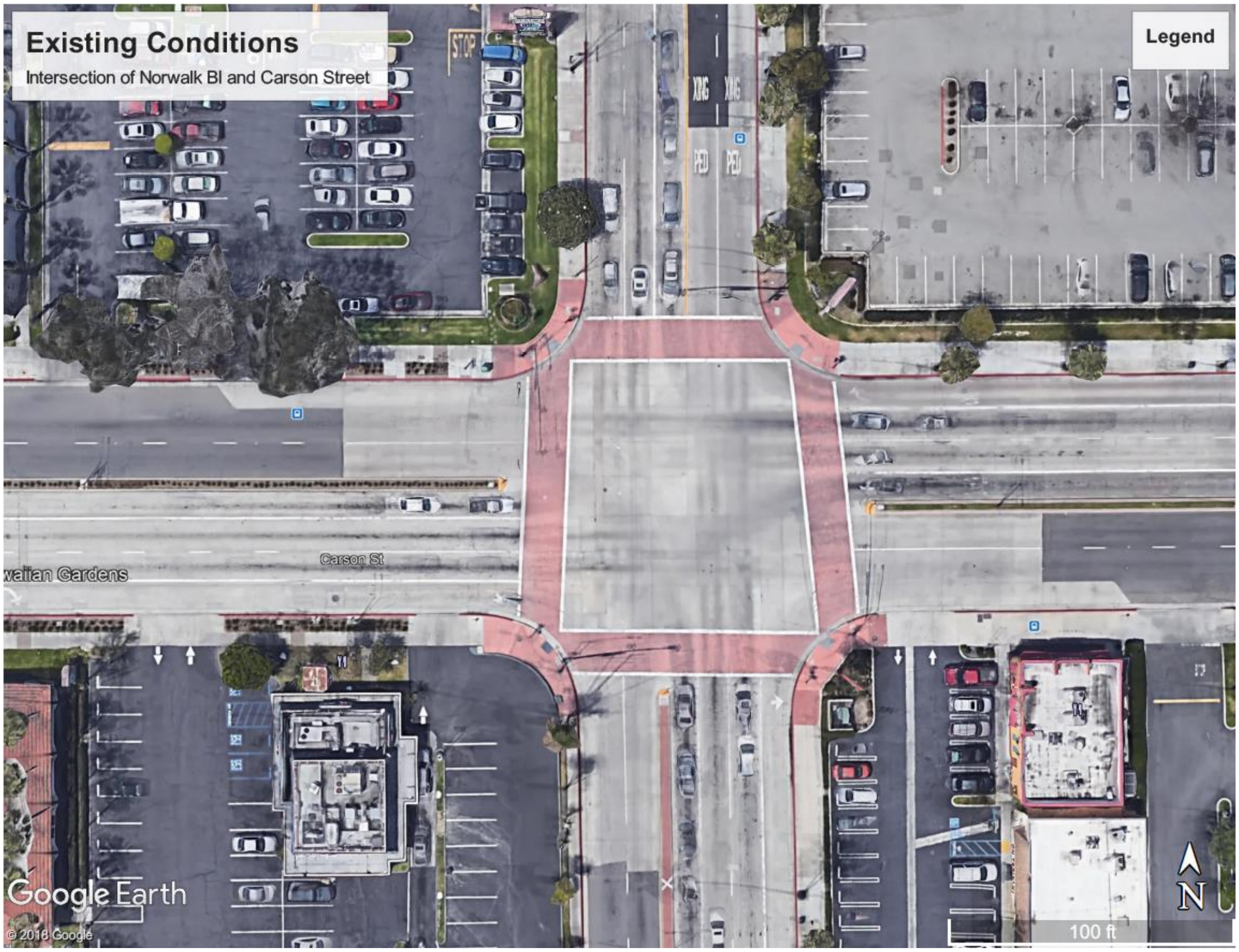
File Name : Norwalk_221st
Site Code : 00000000
Start Date : 5/8/2019
Page No : 3

	Norwalk Blvd Southbound				221st Street Westbound				Norwalk Blvd Northbound				221st Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	23	157	2	182	10	3	17	30	7	226	15	248	3	4	2	9	469
05:15 PM	19	**170**	**4**	**193**	**14**	**12**	16	42	**11**	**271**	**21**	**303**	**5**	**7**	**3**	**15**	**553**
05:30 PM	**35**	149	3	187	9	5	26	40	10	212	11	233	4	2	1	7	467
05:45 PM	30	137	4	171	11	8	**33**	**52**	8	213	10	231	3	3	1	7	461
Total Volume	107	613	13	733	44	28	92	164	36	922	57	1015	15	16	7	38	1950
% App. Total	14.6	83.6	1.8		26.8	17.1	56.1		3.5	90.8	5.6		39.5	42.1	18.4		
PHF	.764	.901	.813	.949	.786	.583	.697	.788	.818	.851	.679	.837	.750	.571	.583	.633	.882



Intersection of Norwalk Boulevard and Carson Street



CITY TRAFFIC COUNTERS
WWW.CTCOUNTERS.COM

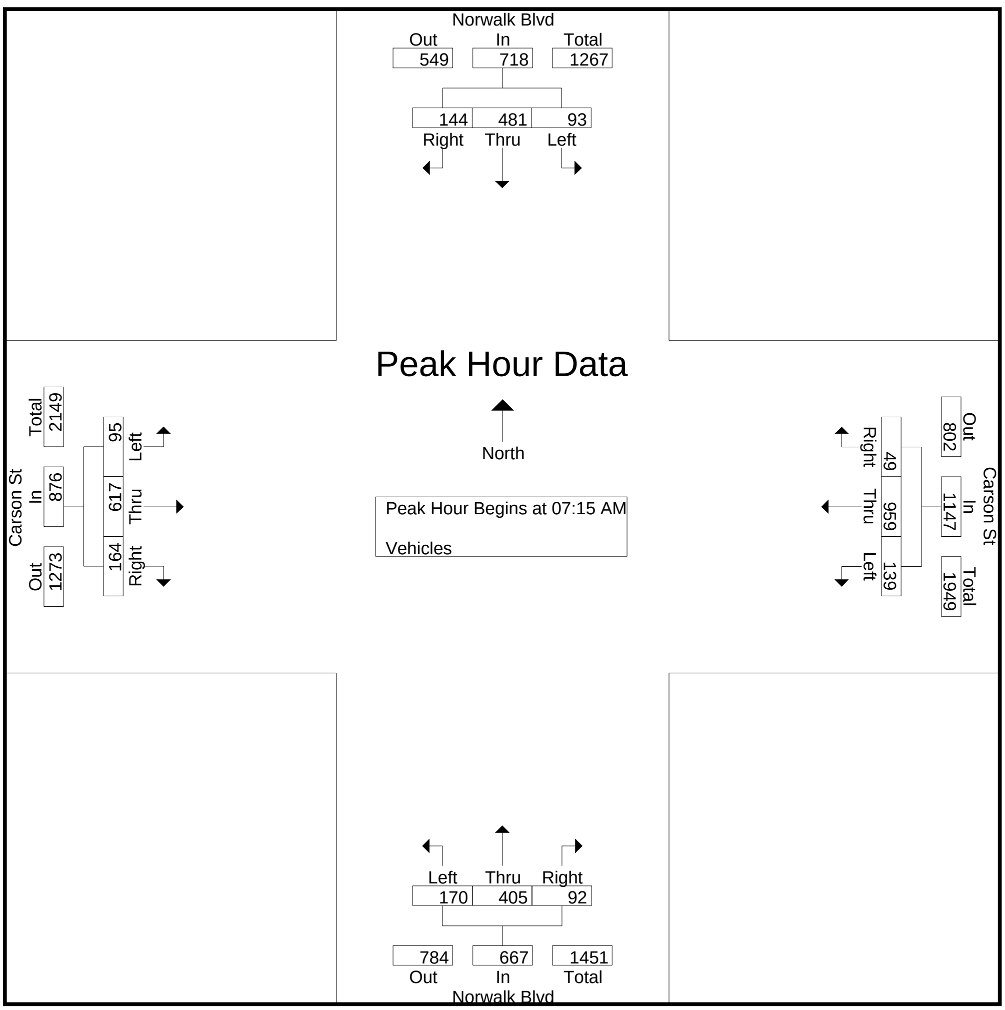
File Name : Norwalk_Carson
Site Code : 00000000
Start Date : 5/8/2019
Page No : 1

Groups Printed- Vehicles

	Norwalk Blvd Southbound			Carson St Westbound			Norwalk Blvd Northbound			Carson St Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	16	72	34	23	229	10	44	72	17	11	110	23	661
07:15 AM	20	105	40	33	248	8	36	101	27	22	126	37	803
07:30 AM	34	154	36	34	224	15	50	120	21	18	192	51	949
07:45 AM	24	124	44	36	268	9	44	93	21	23	156	43	885
Total	94	455	154	126	969	42	174	386	86	74	584	154	3298
08:00 AM	15	98	24	36	219	17	40	91	23	32	143	33	771
08:15 AM	27	88	17	45	217	14	36	102	22	32	115	22	737
08:30 AM	22	90	36	30	183	8	47	93	20	17	129	25	700
08:45 AM	28	117	34	21	175	17	28	79	23	27	165	23	737
Total	92	393	111	132	794	56	151	365	88	108	552	103	2945
04:00 PM	25	99	29	41	139	25	54	118	26	49	222	46	873
04:15 PM	36	101	35	42	149	11	60	142	39	44	168	28	855
04:30 PM	35	111	20	46	191	18	56	115	33	53	200	39	917
04:45 PM	45	114	28	43	161	23	44	144	29	45	220	43	939
Total	141	425	112	172	640	77	214	519	127	191	810	156	3584
05:00 PM	46	108	25	47	199	29	56	159	30	54	214	39	1006
05:15 PM	34	117	29	53	163	24	53	187	43	54	233	37	1027
05:30 PM	35	105	29	38	168	25	53	148	39	50	246	50	986
05:45 PM	32	139	28	38	173	25	62	171	30	57	225	38	1018
Total	147	469	111	176	703	103	224	665	142	215	918	164	4037
Grand Total	474	1742	488	606	3106	278	763	1935	443	588	2864	577	13864
Apprch %	17.5	64.4	18	15.2	77.8	7	24.3	61.6	14.1	14.6	71.1	14.3	
Total %	3.4	12.6	3.5	4.4	22.4	2	5.5	14	3.2	4.2	20.7	4.2	

File Name : Norwalk_Carson
Site Code : 00000000
Start Date : 5/8/2019
Page No : 2

	Norwalk Blvd Southbound				Carson St Westbound				Norwalk Blvd Northbound				Carson St Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	20	105	40	165	33	248	8	289	36	101	**27**	164	22	126	37	185	803
07:30 AM	**34**	**154**	36	**224**	34	224	15	273	**50**	**120**	21	**191**	18	**192**	**51**	**261**	**949**
07:45 AM	24	124	**44**	192	**36**	**268**	9	**313**	44	93	21	158	23	156	43	222	885
08:00 AM	15	98	24	137	36	219	**17**	272	40	91	23	154	**32**	143	33	208	771
Total Volume	93	481	144	718	139	959	49	1147	170	405	92	667	95	617	164	876	3408
% App. Total	13	67	20.1		12.1	83.6	4.3		25.5	60.7	13.8		10.8	70.4	18.7		
PHF	.684	.781	.818	.801	.965	.895	.721	.916	.850	.844	.852	.873	.742	.803	.804	.839	.898



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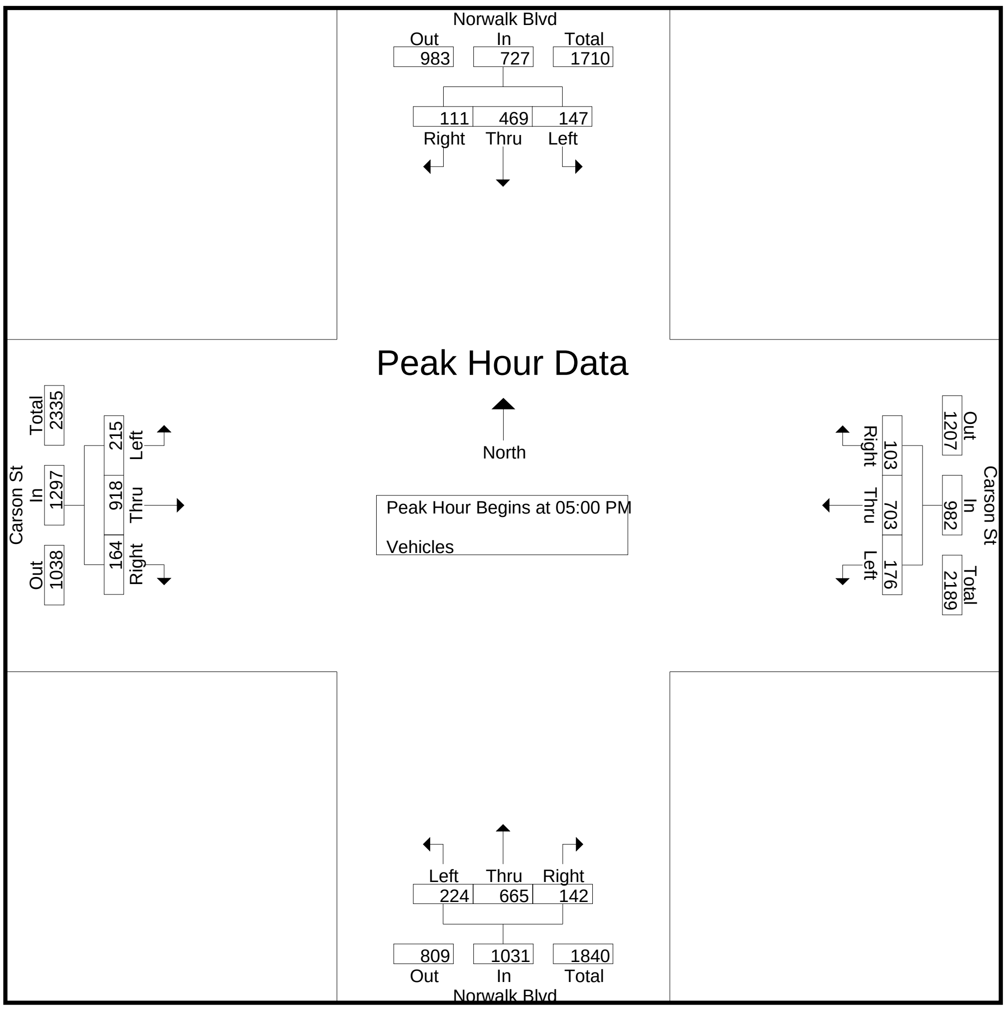
File Name : Norwalk_Carson
Site Code : 00000000
Start Date : 5/8/2019
Page No : 3

	Norwalk Blvd Southbound				**Carson St Westbound**				**Norwalk Blvd Northbound**				**Carson St Eastbound**				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**46**	108	25	179	47	**199**	**29**	**275**	56	159	30	245	54	214	39	307	1006
05:15 PM	34	117	**29**	180	**53**	163	24	240	53	**187**	**43**	**283**	54	233	37	324	**1027**
05:30 PM	35	105	29	169	38	168	25	231	53	148	39	240	50	**246**	**50**	**346**	986
05:45 PM	32	**139**	28	**199**	38	173	25	236	**62**	171	30	263	**57**	225	38	320	1018
Total Volume	147	469	111	727	176	703	103	982	224	665	142	1031	215	918	164	1297	4037
% App. Total	20.2	64.5	15.3		17.9	71.6	10.5		21.7	64.5	13.8		16.6	70.8	12.6		
PHF	.799	.844	.957	.913	.830	.883	.888	.893	.903	.889	.826	.911	.943	.933	.820	.937	.983



Level of Service
HCM (Synchro) Calculation Sheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	60		0	60		0
Storage Lanes	0		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.932			0.927			0.994			0.998	
Flt Protected		0.990			0.984		0.950			0.950		
Satd. Flow (prot)	0	1538	0	0	1520	0	1490	3148	0	1490	3160	0
Flt Permitted		0.936			0.885		0.361			0.420		
Satd. Flow (perm)	0	1454	0	0	1367	0	566	3148	0	659	3160	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			62			5			2	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		1936			1632			736			1008	
Travel Time (s)		52.8			44.5			12.5			17.2	
Volume (vph)	17	25	42	41	17	69	13	388	16	48	482	7
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	21	31	52	51	21	85	16	479	20	59	595	9
Lane Group Flow (vph)	0	104	0	0	157	0	16	499	0	59	604	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	56.0	56.0	0.0	56.0	56.0	0.0	64.0	64.0	0.0	64.0	64.0	0.0
Total Split (%)	46.7%	46.7%	0.0%	46.7%	46.7%	0.0%	53.3%	53.3%	0.0%	53.3%	53.3%	0.0%
Maximum Green (s)	52.0	52.0		52.0	52.0		60.0	60.0		60.0	60.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		12.7			12.7		99.2	99.2		99.2	99.2	
Actuated g/C Ratio		0.11			0.11		0.83	0.83		0.83	0.83	
v/c Ratio		0.52			0.78		0.03	0.19		0.11	0.23	
Uniform Delay, d1		24.9			31.3		1.8	2.1		2.0	2.2	
Control Delay		26.2			31.5		2.9	2.6		3.2	3.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		26.2			31.5		2.9	2.6		3.2	3.1	
LOS		C			C		A	A		A	A	
Approach Delay		26.2			31.5			2.7			3.1	
Approach LOS		C			C			A			A	
90th %ile Green (s)	19.8	19.8		19.8	19.8		92.2	92.2		92.2	92.2	
90th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
70th %ile Green (s)	15.5	15.5		15.5	15.5		96.5	96.5		96.5	96.5	
70th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
50th %ile Green (s)	12.6	12.6		12.6	12.6		99.4	99.4		99.4	99.4	
50th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
30th %ile Green (s)	9.8	9.8		9.8	9.8		102.2	102.2		102.2	102.2	
30th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
10th %ile Green (s)	6.0	6.0		6.0	6.0		106.0	106.0		106.0	106.0	
10th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
Stops (vph)		42			74		2	75		11	117	
Fuel Used(gal)		2			3		0	3		0	5	
CO Emissions (g/hr)		139			200		6	208		33	336	
NOx Emissions (g/hr)		27			39		1	40		6	65	
VOC Emissions (g/hr)		32			46		1	48		8	78	
Dilemma Vehicles (#)		0			0		0	17		0	23	
Queue Length 50th (ft)		38			73		2	31		11	64	
Queue Length 95th (ft)		76			119		7	54		10	38	
Internal Link Dist (ft)		1856			1552			656			928	
Turn Bay Length (ft)							60			60		
Base Capacity (vph)		660			628		468	2605		545	2614	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.16			0.25		0.03	0.19		0.11	0.23	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

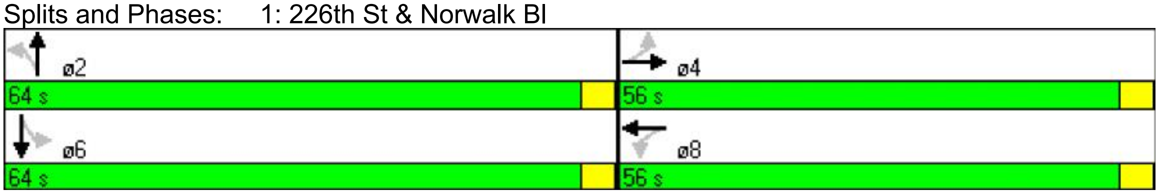
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 7.7	Intersection LOS: A
Intersection Capacity Utilization 41.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: 226th St & Norwalk Bl



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	12	0	28	0	460	6	47	604	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	15	0	34	0	561	7	57	737	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1008			1280	
pX, platoon unblocked												
vC, conflicting volume	1166	1420	368	1048	1416	284	737			568		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1166	1420	368	1048	1416	284	737			568		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	92	100	95	100			94		
cM capacity (veh/h)	136	128	629	174	128	713	865			1000		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	49	0	374	194	57	491	246
Volume Left	0	15	0	0	0	57	0	0
Volume Right	0	34	0	0	7	0	0	0
cSH	1700	370	1700	1700	1700	1000	1700	1700
Volume to Capacity	0.00	0.13	0.00	0.22	0.11	0.06	0.29	0.14
Queue Length (ft)	0	11	0	0	0	5	0	0
Control Delay (s)	0.0	16.2	0.0	0.0	0.0	8.8	0.0	0.0
Lane LOS	A	C				A		
Approach Delay (s)	0.0	16.2	0.0			0.6		
Approach LOS	A	C						

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	60		0	60		0	60		0	60		0
Storage Lanes	1		0	1		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.867			0.908			0.999			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1490	1445	0	1490	1513	0	1490	3164	0	1490	3135	0
Flt Permitted	0.737			0.728			0.295			0.418		
Satd. Flow (perm)	1156	1445	0	1142	1513	0	463	3164	0	656	3135	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			19			1			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		1376			1248			1280			1552	
Travel Time (s)		37.5			34.0			21.8			26.5	
Volume (vph)	66	4	34	27	10	16	25	444	4	27	616	45
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	78	5	40	32	12	19	29	522	5	32	725	53
Lane Group Flow (vph)	78	45	0	32	31	0	29	527	0	32	778	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	49.0	49.0	0.0	49.0	49.0	0.0	71.0	71.0	0.0	71.0	71.0	0.0
Total Split (%)	40.8%	40.8%	0.0%	40.8%	40.8%	0.0%	59.2%	59.2%	0.0%	59.2%	59.2%	0.0%
Maximum Green (s)	45.0	45.0		45.0	45.0		67.0	67.0		67.0	67.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	12.3	12.3		12.1	12.1		102.6	102.6		102.6	102.6	
Actuated g/C Ratio	0.10	0.10		0.10	0.10		0.86	0.86		0.86	0.86	
v/c Ratio	0.66	0.24		0.28	0.18		0.07	0.19		0.06	0.29	
Uniform Delay, d1	53.1	5.5		50.9	19.3		1.6	1.8		1.6	2.0	
Control Delay	51.8	16.6		48.3	25.9		2.6	2.1		1.3	1.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.8	16.6		48.3	25.9		2.6	2.1		1.3	1.6	
LOS	D	B		D	C		A	A		A	A	
Approach Delay		38.9			37.2			2.1			1.6	
Approach LOS		D			D			A			A	
90th %ile Green (s)	18.1	18.1		18.1	18.1		93.9	93.9		93.9	93.9	
90th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
70th %ile Green (s)	14.6	14.6		14.6	14.6		97.4	97.4		97.4	97.4	
70th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
50th %ile Green (s)	12.3	12.3		12.3	12.3		99.7	99.7		99.7	99.7	
50th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
30th %ile Green (s)	10.0	10.0		10.0	10.0		102.0	102.0		102.0	102.0	
30th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		116.0	116.0		116.0	116.0	
10th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
Stops (vph)	62	12		26	13		4	66		3	92	
Fuel Used(gal)	2	1		1	0		0	5		0	8	
CO Emissions (g/hr)	119	43		46	32		19	331		22	565	
NOx Emissions (g/hr)	23	8		9	6		4	64		4	110	
VOC Emissions (g/hr)	28	10		11	8		4	77		5	131	
Dilemma Vehicles (#)	0	0		0	0		0	14		0	11	
Queue Length 50th (ft)	59	4		23	9		3	29		1	62	
Queue Length 95th (ft)	101	34		50	34		9	48		4	26	
Internal Link Dist (ft)		1296			1168			1200			1472	
Turn Bay Length (ft)	60			60			60			60		
Base Capacity (vph)	434	567		428	579		396	2705		561	2682	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	20		0	8		0	0		0	0	
Reduced v/c Ratio	0.18	0.08		0.07	0.05		0.07	0.19		0.06	0.29	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 40

Control Type: Actuated-Coordinated

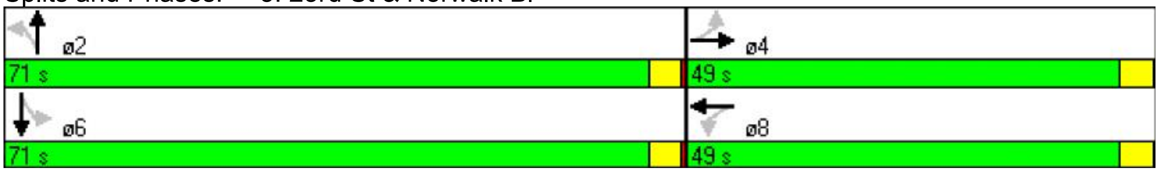
Maximum v/c Ratio: 0.66

Intersection Signal Delay: 6.2 Intersection LOS: A

Intersection Capacity Utilization 44.3% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: 23rd St & Norwalk Bl



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	60		0	60		0
Storage Lanes	0		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.951			0.919			0.995			0.997	
Flt Protected		0.976			0.988		0.950			0.950		
Satd. Flow (prot)	0	1547	0	0	1513	0	1490	3151	0	1490	3157	0
Flt Permitted		0.833			0.921		0.295			0.345		
Satd. Flow (perm)	0	1320	0	0	1411	0	463	3151	0	541	3157	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			78			4			3	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		1904			1120			1552			1024	
Travel Time (s)		51.9			30.5			26.5			17.5	
Volume (vph)	22	6	16	49	31	118	10	534	18	70	626	14
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	25	7	18	56	36	136	11	614	21	80	720	16
Lane Group Flow (vph)	0	50	0	0	228	0	11	635	0	80	736	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	56.0	56.0	0.0	56.0	56.0	0.0	64.0	64.0	0.0	64.0	64.0	0.0
Total Split (%)	46.7%	46.7%	0.0%	46.7%	46.7%	0.0%	53.3%	53.3%	0.0%	53.3%	53.3%	0.0%
Maximum Green (s)	52.0	52.0		52.0	52.0		60.0	60.0		60.0	60.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		17.0			17.0		95.0	95.0		95.0	95.0	
Actuated g/C Ratio		0.14			0.14		0.79	0.79		0.79	0.79	
v/c Ratio		0.25			0.86		0.03	0.25		0.19	0.29	
Uniform Delay, d1		29.0			32.8		2.6	3.2		3.0	3.4	
Control Delay		30.3			33.4		3.9	3.4		5.1	3.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		30.3			33.4		3.9	3.4		5.1	3.9	
LOS		C			C		A	A		A	A	
Approach Delay		30.3			33.4			3.4			4.0	
Approach LOS		C			C			A			A	
90th %ile Green (s)	25.7	25.7		25.7	25.7		86.3	86.3		86.3	86.3	
90th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
70th %ile Green (s)	20.3	20.3		20.3	20.3		91.7	91.7		91.7	91.7	
70th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
50th %ile Green (s)	16.8	16.8		16.8	16.8		95.2	95.2		95.2	95.2	
50th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
30th %ile Green (s)	13.4	13.4		13.4	13.4		98.6	98.6		98.6	98.6	
30th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
10th %ile Green (s)	8.6	8.6		8.6	8.6		103.4	103.4		103.4	103.4	
10th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
Stops (vph)		26			128		3	107		15	136	
Fuel Used(gal)		1			4		0	7		1	6	
CO Emissions (g/hr)		76			261		10	506		49	440	
NOx Emissions (g/hr)		15			51		2	98		10	86	
VOC Emissions (g/hr)		18			60		2	117		11	102	
Dilemma Vehicles (#)		0			0		0	40		0	30	
Queue Length 50th (ft)		22			117		1	40		9	46	
Queue Length 95th (ft)		53			185		7	82		38	122	
Internal Link Dist (ft)		1824			1040			1472			944	
Turn Bay Length (ft)							60			60		
Base Capacity (vph)		582			656		367	2497		428	2501	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.09			0.35		0.03	0.25		0.19	0.29	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 40

Control Type: Actuated-Coordinated

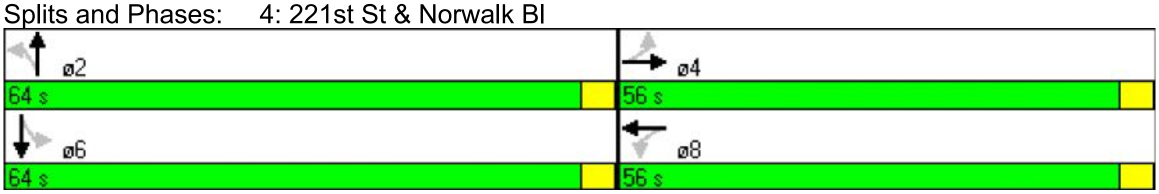
Maximum v/c Ratio: 0.86

Intersection Signal Delay: 8.4 Intersection LOS: A

Intersection Capacity Utilization 46.9% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: 221st St & Norwalk Bl



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.965	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1490	3167	1333	1490	3167	1333	1490	3167	1333	1490	3056	0
Flt Permitted	0.205			0.349			0.222			0.388		
Satd. Flow (perm)	322	3167	1333	547	3167	1333	348	3167	1333	609	3056	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			125			54			102		35	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		1632			1664			1024			560	
Travel Time (s)		27.8			28.4			17.5			9.5	
Volume (vph)	95	617	164	139	959	49	170	405	92	93	481	144
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	106	686	182	154	1066	54	189	450	102	103	534	160
Lane Group Flow (vph)	106	686	182	154	1066	54	189	450	102	103	694	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phases	4	4	4	8	8	8	2	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	77.0	77.0	77.0	77.0	77.0	77.0	43.0	43.0	43.0	43.0	43.0	0.0
Total Split (%)	64.2%	64.2%	64.2%	64.2%	64.2%	64.2%	35.8%	35.8%	35.8%	35.8%	35.8%	0.0%
Maximum Green (s)	73.0	73.0	73.0	73.0	73.0	73.0	39.0	39.0	39.0	39.0	39.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	48.7	48.7	48.7	48.7	48.7	48.7	63.3	63.3	63.3	63.3	63.3	
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41	0.41	0.53	0.53	0.53	0.53	0.53	
v/c Ratio	0.81	0.53	0.30	0.69	0.83	0.09	1.03	0.27	0.14	0.32	0.43	
Uniform Delay, d1	31.5	27.0	7.0	29.5	31.9	0.0	28.4	15.6	0.0	16.1	16.3	
Control Delay	40.1	26.6	6.6	31.8	32.2	3.6	108.3	20.1	7.2	25.0	20.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	40.1	26.6	6.6	31.8	32.2	3.6	108.3	20.1	7.2	25.0	20.0	
LOS	D	C	A	C	C	A	F	C	A	C	C	
Approach Delay		24.3			31.0			40.9			20.7	
Approach LOS		C			C			D			C	
90th %ile Green (s)	70.6	70.6	70.6	70.6	70.6	70.6	41.4	41.4	41.4	41.4	41.4	
90th %ile Term Code	Gap	Gap	Gap	Hold	Hold	Hold	Coord	Coord	Coord	Coord	Coord	
70th %ile Green (s)	55.0	55.0	55.0	55.0	55.0	55.0	57.0	57.0	57.0	57.0	57.0	
70th %ile Term Code	Gap	Gap	Gap	Hold	Hold	Hold	Coord	Coord	Coord	Coord	Coord	
50th %ile Green (s)	44.3	44.3	44.3	44.3	44.3	44.3	67.7	67.7	67.7	67.7	67.7	
50th %ile Term Code	Hold	Hold	Hold	Gap	Gap	Gap	Coord	Coord	Coord	Coord	Coord	
30th %ile Green (s)	39.8	39.8	39.8	39.8	39.8	39.8	72.2	72.2	72.2	72.2	72.2	
30th %ile Term Code	Hold	Hold	Hold	Gap	Gap	Gap	Coord	Coord	Coord	Coord	Coord	
10th %ile Green (s)	33.8	33.8	33.8	33.8	33.8	33.8	78.2	78.2	78.2	78.2	78.2	
10th %ile Term Code	Hold	Hold	Hold	Gap	Gap	Gap	Coord	Coord	Coord	Coord	Coord	
Stops (vph)	82	434	31	107	803	5	114	238	34	60	367	
Fuel Used(gal)	3	14	2	4	25	1	6	7	1	1	9	
CO Emissions (g/hr)	184	1009	164	246	1748	45	423	476	77	99	596	
NOx Emissions (g/hr)	36	196	32	48	340	9	82	93	15	19	116	
VOC Emissions (g/hr)	43	234	38	57	405	10	98	110	18	23	138	
Dilemma Vehicles (#)	0	23	0	0	37	0	0	13	0	0	26	
Queue Length 50th (ft)	77	223	29	104	409	0	143	103	6	40	143	
Queue Length 95th (ft)	122	178	51	128	316	17	#361	190	45	124	292	
Internal Link Dist (ft)		1552			1584			944			480	
Turn Bay Length (ft)												
Base Capacity (vph)	196	1927	860	333	1927	832	183	1671	751	321	1629	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.54	0.36	0.21	0.46	0.55	0.06	1.03	0.27	0.14	0.32	0.43	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 29.0 Intersection LOS: C

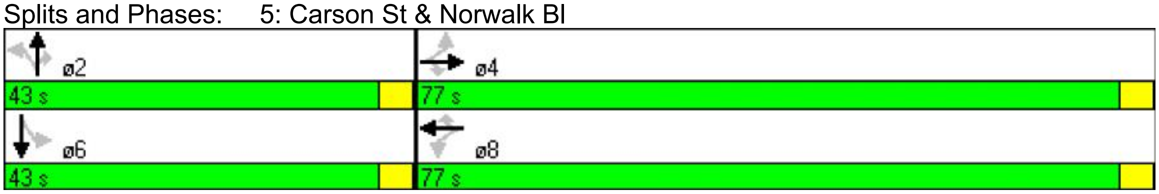
Intersection Capacity Utilization 80.4% ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Carson St & Norwalk Bl



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	60		0	110		0
Storage Lanes	0		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.962			0.944			0.995			0.992	
Flt Protected		0.979			0.984		0.950			0.950		
Satd. Flow (prot)	0	1570	0	0	1548	0	1490	3151	0	1490	3141	0
Flt Permitted		0.899			0.926		0.447			0.212		
Satd. Flow (perm)	0	1441	0	0	1457	0	701	3151	0	333	3141	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			23			5			9	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		1936			1632			736			1008	
Travel Time (s)		52.8			44.5			12.5			17.2	
Volume (vph)	21	15	14	17	13	21	59	926	33	62	429	24
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	23	16	15	18	14	23	64	1007	36	67	466	26
Lane Group Flow (vph)	0	54	0	0	55	0	64	1043	0	67	492	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	43.0	43.0	0.0	43.0	43.0	0.0	77.0	77.0	0.0	77.0	77.0	0.0
Total Split (%)	35.8%	35.8%	0.0%	35.8%	35.8%	0.0%	64.2%	64.2%	0.0%	64.2%	64.2%	0.0%
Maximum Green (s)	39.0	39.0		39.0	39.0		73.0	73.0		73.0	73.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		8.5			8.5		106.3	106.3		106.3	106.3	
Actuated g/C Ratio		0.07			0.07		0.89	0.89		0.89	0.89	
v/c Ratio		0.47			0.44		0.10	0.37		0.23	0.18	
Uniform Delay, d1		39.2			31.4		1.1	1.5		1.2	1.1	
Control Delay		41.0			34.7		1.9	2.1		4.5	1.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		41.0			34.7		1.9	2.1		4.5	1.6	
LOS		D			C		A	A		A	A	
Approach Delay		41.0			34.7			2.1			1.9	
Approach LOS		D			C			A			A	
90th %ile Green (s)	12.1	12.1		12.1	12.1		99.9	99.9		99.9	99.9	
90th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
70th %ile Green (s)	9.8	9.8		9.8	9.8		102.2	102.2		102.2	102.2	
70th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
50th %ile Green (s)	8.2	8.2		8.2	8.2		103.8	103.8		103.8	103.8	
50th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
30th %ile Green (s)	6.7	6.7		6.7	6.7		105.3	105.3		105.3	105.3	
30th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		116.0	116.0		116.0	116.0	
10th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
Stops (vph)		35			32		8	153		20	84	
Fuel Used(gal)		1			1		0	7		1	4	
CO Emissions (g/hr)		96			83		28	468		47	284	
NOx Emissions (g/hr)		19			16		5	91		9	55	
VOC Emissions (g/hr)		22			19		6	109		11	66	
Dilemma Vehicles (#)		0			0		0	34		0	10	
Queue Length 50th (ft)		29			24		5	57		5	15	
Queue Length 95th (ft)		71			66		15	100		45	46	
Internal Link Dist (ft)		1856			1552			656			928	
Turn Bay Length (ft)							60			110		
Base Capacity (vph)		478			489		621	2790		295	2782	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.11			0.11		0.10	0.37		0.23	0.18	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

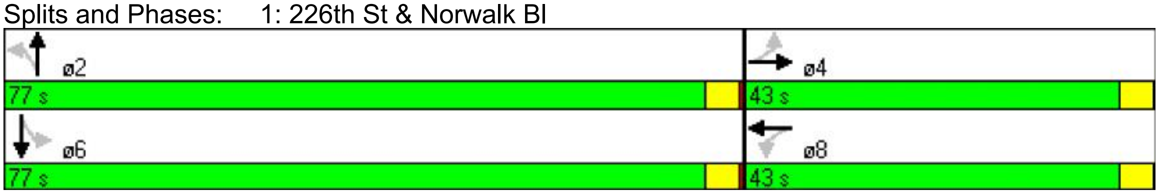
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.47
Intersection Signal Delay: 4.2 | Intersection LOS: A
Intersection Capacity Utilization 48.4% | ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: 226th St & Norwalk Bl



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	6	0	19	0	957	12	40	528	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	0	0	7	0	22	0	1113	14	47	614	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1008			1280	
pX, platoon unblocked												
vC, conflicting volume	1285	1834	307	1520	1827	563	614			1127		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1285	1834	307	1520	1827	563	614			1127		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	91	100	95	100			92		
cM capacity (veh/h)	109	70	689	77	70	469	961			616		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	29	0	742	385	47	409	205
Volume Left	0	7	0	0	0	47	0	0
Volume Right	0	22	0	0	14	0	0	0
cSH	1700	211	1700	1700	1700	616	1700	1700
Volume to Capacity	0.00	0.14	0.00	0.44	0.23	0.08	0.24	0.12
Queue Length (ft)	0	12	0	0	0	6	0	0
Control Delay (s)	0.0	24.8	0.0	0.0	0.0	11.3	0.0	0.0
Lane LOS	A	C				B		
Approach Delay (s)	0.0	24.8	0.0			0.8		
Approach LOS	A	C						

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	60		0	60		0	60		0	60		0
Storage Lanes	1		0	1		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.906			0.913			0.998			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1490	1510	0	1490	1522	0	1490	3160	0	1490	3113	0
Flt Permitted	0.724			0.720			0.345			0.196		
Satd. Flow (perm)	1136	1510	0	1129	1522	0	541	3160	0	307	3113	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			29			2			21	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		1376			1248			1280			1552	
Travel Time (s)		37.5			34.0			21.8			26.5	
Volume (vph)	72	18	30	10	18	25	39	930	11	55	531	68
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	84	21	35	12	21	29	45	1081	13	64	617	79
Lane Group Flow (vph)	84	56	0	12	50	0	45	1094	0	64	696	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	43.0	43.0	0.0	43.0	43.0	0.0	77.0	77.0	0.0	77.0	77.0	0.0
Total Split (%)	35.8%	35.8%	0.0%	35.8%	35.8%	0.0%	64.2%	64.2%	0.0%	64.2%	64.2%	0.0%
Maximum Green (s)	39.0	39.0		39.0	39.0		73.0	73.0		73.0	73.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	13.2	13.2		12.9	12.9		101.8	101.8		101.8	101.8	
Actuated g/C Ratio	0.11	0.11		0.11	0.11		0.85	0.85		0.85	0.85	
v/c Ratio	0.67	0.28		0.10	0.26		0.10	0.41		0.25	0.26	
Uniform Delay, d1	52.7	18.6		49.2	20.8		1.8	2.5		2.1	2.0	
Control Delay	51.7	22.9		45.4	24.8		3.2	3.4		4.1	1.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.7	22.9		45.4	24.8		3.2	3.4		4.1	1.6	
LOS	D	C		D	C		A	A		A	A	
Approach Delay		40.2			28.8			3.4			1.8	
Approach LOS		D			C			A			A	
90th %ile Green (s)	19.5	19.5		19.5	19.5		92.5	92.5		92.5	92.5	
90th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
70th %ile Green (s)	15.7	15.7		15.7	15.7		96.3	96.3		96.3	96.3	
70th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
50th %ile Green (s)	13.2	13.2		13.2	13.2		98.8	98.8		98.8	98.8	
50th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
30th %ile Green (s)	10.7	10.7		10.7	10.7		101.3	101.3		101.3	101.3	
30th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		116.0	116.0		116.0	116.0	
10th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
Stops (vph)	69	21		10	20		7	199		9	62	
Fuel Used(gal)	2	1		0	1		0	11		1	7	
CO Emissions (g/hr)	130	61		17	52		30	753		50	497	
NOx Emissions (g/hr)	25	12		3	10		6	146		10	97	
VOC Emissions (g/hr)	30	14		4	12		7	174		12	115	
Dilemma Vehicles (#)	0	0		0	0		0	32		0	13	
Queue Length 50th (ft)	64	15		8	15		5	89		5	27	
Queue Length 95th (ft)	108	49		25	47		16	143		14	36	
Internal Link Dist (ft)		1296			1168			1200			1472	
Turn Bay Length (ft)	60			60			60			60		
Base Capacity (vph)	369	514		367	514		459	2680		260	2643	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	25		0	0		0	0		0	0	
Reduced v/c Ratio	0.23	0.11		0.03	0.10		0.10	0.41		0.25	0.26	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 6.0	Intersection LOS: A
Intersection Capacity Utilization 54.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: 23rd St & Norwalk Bl

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	60		0	60		0
Storage Lanes	0		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.975			0.924			0.991			0.997	
Flt Protected		0.981			0.987		0.950			0.950		
Satd. Flow (prot)	0	1594	0	0	1520	0	1490	3138	0	1490	3157	0
Flt Permitted		0.877			0.913		0.353			0.211		
Satd. Flow (perm)	0	1425	0	0	1406	0	554	3138	0	331	3157	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			51			12			4	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		1904			1120			1552			1024	
Travel Time (s)		51.9			30.5			26.5			17.5	
Volume (vph)	15	16	7	44	28	92	36	922	57	107	613	13
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	17	18	8	50	32	105	41	1048	65	122	697	15
Lane Group Flow (vph)	0	43	0	0	187	0	41	1113	0	122	712	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	34.0	34.0	0.0	34.0	34.0	0.0	86.0	86.0	0.0	86.0	86.0	0.0
Total Split (%)	28.3%	28.3%	0.0%	28.3%	28.3%	0.0%	71.7%	71.7%	0.0%	71.7%	71.7%	0.0%
Maximum Green (s)	30.0	30.0		30.0	30.0		82.0	82.0		82.0	82.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		16.7			16.7		95.3	95.3		95.3	95.3	
Actuated g/C Ratio		0.14			0.14		0.79	0.79		0.79	0.79	
v/c Ratio		0.21			0.78		0.09	0.45		0.46	0.28	
Uniform Delay, d1		37.1			35.9		2.7	3.9		4.0	3.3	
Control Delay		37.0			39.1		3.5	3.7		9.4	2.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		37.0			39.1		3.5	3.7		9.4	2.6	
LOS		D			D		A	A		A	A	
Approach Delay		37.0			39.1			3.7			3.6	
Approach LOS		D			D			A			A	
90th %ile Green (s)	25.1	25.1		25.1	25.1		86.9	86.9		86.9	86.9	
90th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
70th %ile Green (s)	20.0	20.0		20.0	20.0		92.0	92.0		92.0	92.0	
70th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
50th %ile Green (s)	16.6	16.6		16.6	16.6		95.4	95.4		95.4	95.4	
50th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
30th %ile Green (s)	13.3	13.3		13.3	13.3		98.7	98.7		98.7	98.7	
30th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
10th %ile Green (s)	8.6	8.6		8.6	8.6		103.4	103.4		103.4	103.4	
10th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
Stops (vph)		27			114		6	223		32	97	
Fuel Used(gal)		1			3		0	13		1	6	
CO Emissions (g/hr)		70			233		32	925		88	394	
NOx Emissions (g/hr)		14			45		6	180		17	77	
VOC Emissions (g/hr)		16			54		8	214		20	91	
Dilemma Vehicles (#)		0			0		0	37		0	21	
Queue Length 50th (ft)		24			104		5	85		14	36	
Queue Length 95th (ft)		54			167		14	115		m34	m61	
Internal Link Dist (ft)		1824			1040			1472			944	
Turn Bay Length (ft)							60			60		
Base Capacity (vph)		362			390		440	2494		263	2507	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.12			0.48		0.09	0.45		0.46	0.28	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

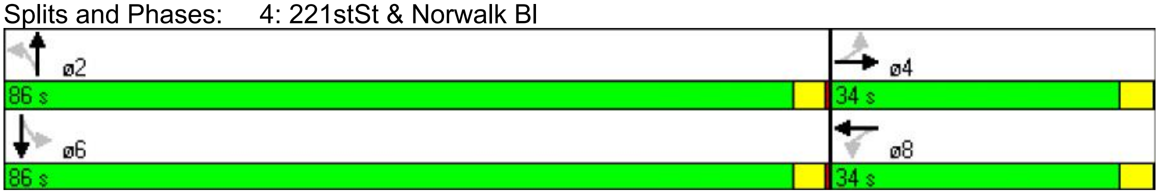
Intersection Signal Delay: 7.3 — Intersection LOS: A

Intersection Capacity Utilization 59.9% — ICU Level of Service B

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: 221stSt & Norwalk Bl



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	60		60	60		60	60		60	60		0
Storage Lanes	1		1	1		1	1		1	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1490	3167	1333	1490	3167	1333	1490	3167	1333	1490	3075	0
Flt Permitted	0.309			0.217			0.337			0.289		
Satd. Flow (perm)	485	3167	1333	340	3167	1333	529	3167	1333	453	3075	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			71			59			71		29	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		1632			1664			1024			560	
Travel Time (s)		27.8			28.4			17.5			9.5	
Volume (vph)	215	918	164	176	703	103	224	665	142	147	469	111
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	219	937	167	180	717	105	229	679	145	150	479	113
Lane Group Flow (vph)	219	937	167	180	717	105	229	679	145	150	592	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phases	4	4	4	8	8	8	2	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	66.0	66.0	66.0	66.0	66.0	66.0	54.0	54.0	54.0	54.0	54.0	0.0
Total Split (%)	55.0%	55.0%	55.0%	55.0%	55.0%	55.0%	45.0%	45.0%	45.0%	45.0%	45.0%	0.0%
Maximum Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
Actuated g/C Ratio	0.52	0.52	0.52	0.52	0.52	0.52	0.42	0.42	0.42	0.42	0.42	
v/c Ratio	0.87	0.57	0.23	1.02	0.44	0.15	1.04	0.51	0.24	0.79	0.46	
Uniform Delay, d1	25.5	19.9	8.7	29.1	18.1	6.4	34.9	26.0	11.1	30.5	23.8	
Control Delay	60.1	21.7	9.8	105.4	19.2	7.8	104.9	26.5	13.3	61.5	25.3	
Queue Delay	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.2	
Total Delay	60.1	21.9	9.8	105.4	19.4	7.8	104.9	26.7	13.3	61.5	25.5	
LOS	E	C	A	F	B	A	F	C	B	E	C	
Approach Delay		26.7			33.6			41.9			32.8	
Approach LOS		C			C			D			C	
90th %ile Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Coord	Coord	Coord	Coord	Coord	
70th %ile Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
70th %ile Term Code	Max	Max	Max	Max	Max	Max	Coord	Coord	Coord	Coord	Coord	
50th %ile Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
50th %ile Term Code	Max	Max	Max	Max	Max	Max	Coord	Coord	Coord	Coord	Coord	
30th %ile Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
30th %ile Term Code	Hold	Hold	Hold	Max	Max	Max	Coord	Coord	Coord	Coord	Coord	
10th %ile Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
10th %ile Term Code	Hold	Hold	Hold	Max	Max	Max	Coord	Coord	Coord	Coord	Coord	
Stops (vph)	172	607	50	137	422	25	189	437	69	121	386	
Fuel Used(gal)	7	20	3	7	15	2	8	13	2	4	9	
CO Emissions (g/hr)	468	1410	184	497	1037	110	573	874	143	251	628	
NOx Emissions (g/hr)	91	274	36	97	202	21	111	170	28	49	122	
VOC Emissions (g/hr)	109	327	43	115	240	25	133	203	33	58	145	
Dilemma Vehicles (#)	0	37	0	0	29	0	0	14	0	0	24	
Queue Length 50th (ft)	144	253	37	~149	176	17	~198	193	29	100	162	
Queue Length 95th (ft)	#309	317	78	#295	225	47	#363	184	61	#225	214	
Internal Link Dist (ft)		1552			1584			944			480	
Turn Bay Length (ft)	60		60	60		60	60		60	60		
Base Capacity (vph)	251	1636	723	176	1636	717	220	1320	597	189	1298	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	182	0	0	266	0	0	170	0	0	190	
Reduced v/c Ratio	0.87	0.64	0.23	1.02	0.52	0.15	1.04	0.59	0.24	0.79	0.53	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 33.3 Intersection LOS: C

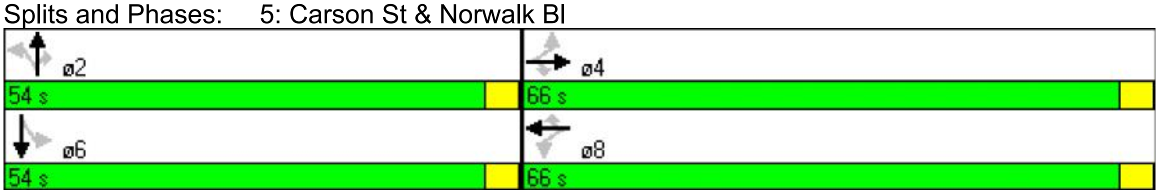
Intersection Capacity Utilization 86.5% ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Carson St & Norwalk Bl



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	60		0	60		0
Storage Lanes	0		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.932			0.927			0.994			0.998	
Flt Protected		0.990			0.984		0.950			0.950		
Satd. Flow (prot)	0	1538	0	0	1520	0	1490	3148	0	1490	3160	0
Flt Permitted		0.936			0.881		0.352			0.402		
Satd. Flow (perm)	0	1454	0	0	1361	0	552	3148	0	631	3160	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		53			62			5			2	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		1936			1632			736			1008	
Travel Time (s)		52.8			44.5			12.5			17.2	
Volume (vph)	17	26	43	43	17	70	13	412	17	49	496	7
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	21	32	53	53	21	86	16	509	21	60	612	9
Lane Group Flow (vph)	0	106	0	0	160	0	16	530	0	60	621	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	56.0	56.0	0.0	56.0	56.0	0.0	64.0	64.0	0.0	64.0	64.0	0.0
Total Split (%)	46.7%	46.7%	0.0%	46.7%	46.7%	0.0%	53.3%	53.3%	0.0%	53.3%	53.3%	0.0%
Maximum Green (s)	52.0	52.0		52.0	52.0		60.0	60.0		60.0	60.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

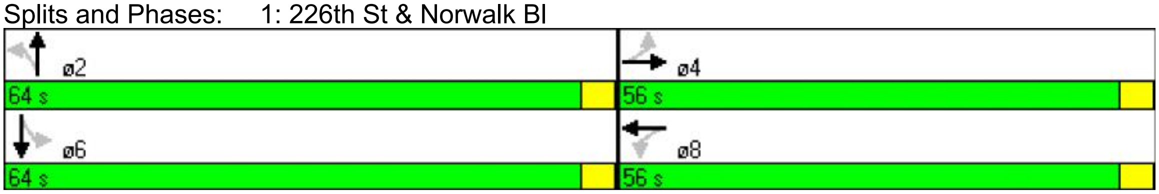
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		13.0			13.0		99.0	99.0		99.0	99.0	
Actuated g/C Ratio		0.11			0.11		0.83	0.83		0.83	0.83	
v/c Ratio		0.52			0.79		0.04	0.20		0.12	0.24	
Uniform Delay, d1		24.8			31.6		1.9	2.2		2.0	2.3	
Control Delay		26.0			31.8		3.0	2.8		3.1	3.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		26.0			31.8		3.0	2.8		3.1	3.1	
LOS		C			C		A	A		A	A	
Approach Delay		26.0			31.8			2.8			3.1	
Approach LOS		C			C			A			A	
90th %ile Green (s)	20.2	20.2		20.2	20.2		91.8	91.8		91.8	91.8	
90th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
70th %ile Green (s)	15.8	15.8		15.8	15.8		96.2	96.2		96.2	96.2	
70th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
50th %ile Green (s)	12.9	12.9		12.9	12.9		99.1	99.1		99.1	99.1	
50th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
30th %ile Green (s)	10.1	10.1		10.1	10.1		101.9	101.9		101.9	101.9	
30th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
10th %ile Green (s)	6.1	6.1		6.1	6.1		105.9	105.9		105.9	105.9	
10th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
Stops (vph)		42			78		2	83		11	121	
Fuel Used(gal)		2			3		0	3		0	5	
CO Emissions (g/hr)		142			206		6	224		33	345	
NOx Emissions (g/hr)		28			40		1	43		6	67	
VOC Emissions (g/hr)		33			48		1	52		8	80	
Dilemma Vehicles (#)		0			0		0	18		0	26	
Queue Length 50th (ft)		39			75		2	34		13	76	
Queue Length 95th (ft)		77			122		7	58		7	28	
Internal Link Dist (ft)		1856			1552			656			928	
Turn Bay Length (ft)							60			60		
Base Capacity (vph)		660			625		455	2598		521	2607	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.16			0.26		0.04	0.20		0.12	0.24	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79
Intersection Signal Delay: 7.7 Intersection LOS: A
Intersection Capacity Utilization 43.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: 226th St & Norwalk Bl



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	12	0	29	0	485	6	48	620	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	15	0	35	0	591	7	59	756	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1008			1280	
pX, platoon unblocked												
vC, conflicting volume	1204	1472	378	1090	1468	299	756			599		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1204	1472	378	1090	1468	299	756			599		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	91	100	95	100			94		
cM capacity (veh/h)	127	118	620	162	119	697	850			974		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	50	0	394	204	59	504	252
Volume Left	0	15	0	0	0	59	0	0
Volume Right	0	35	0	0	7	0	0	0
cSH	1700	354	1700	1700	1700	974	1700	1700
Volume to Capacity	0.00	0.14	0.00	0.23	0.12	0.06	0.30	0.15
Queue Length (ft)	0	12	0	0	0	5	0	0
Control Delay (s)	0.0	16.8	0.0	0.0	0.0	8.9	0.0	0.0
Lane LOS	A	C				A		
Approach Delay (s)	0.0	16.8	0.0			0.6		
Approach LOS	A	C						

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	60		0	60		0	60		0	60		0
Storage Lanes	1		0	1		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.867			0.908			0.999			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1490	1445	0	1490	1513	0	1490	3164	0	1490	3135	0
Flt Permitted	0.737			0.728			0.287			0.402		
Satd. Flow (perm)	1156	1445	0	1142	1513	0	450	3164	0	631	3135	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			19			1			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		1376			1248			1280			1552	
Travel Time (s)		37.5			34.0			21.8			26.5	
Volume (vph)	67	4	34	28	10	16	26	469	4	28	632	46
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	79	5	40	33	12	19	31	552	5	33	744	54
Lane Group Flow (vph)	79	45	0	33	31	0	31	557	0	33	798	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	49.0	49.0	0.0	49.0	49.0	0.0	71.0	71.0	0.0	71.0	71.0	0.0
Total Split (%)	40.8%	40.8%	0.0%	40.8%	40.8%	0.0%	59.2%	59.2%	0.0%	59.2%	59.2%	0.0%
Maximum Green (s)	45.0	45.0		45.0	45.0		67.0	67.0		67.0	67.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	12.4	12.4		12.2	12.2		102.5	102.5		102.5	102.5	
Actuated g/C Ratio	0.10	0.10		0.10	0.10		0.85	0.85		0.85	0.85	
v/c Ratio	0.66	0.24		0.28	0.18		0.08	0.21		0.06	0.30	
Uniform Delay, d1	53.0	5.5		50.9	19.3		1.6	1.8		1.6	2.0	
Control Delay	51.7	16.6		48.2	25.8		2.7	2.1		1.2	1.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.7	16.6		48.2	25.8		2.7	2.1		1.2	1.5	
LOS	D	B		D	C		A	A		A	A	
Approach Delay		39.0			37.4			2.2			1.5	
Approach LOS		D			D			A			A	
90th %ile Green (s)	18.2	18.2		18.2	18.2		93.8	93.8		93.8	93.8	
90th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
70th %ile Green (s)	14.8	14.8		14.8	14.8		97.2	97.2		97.2	97.2	
70th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
50th %ile Green (s)	12.4	12.4		12.4	12.4		99.6	99.6		99.6	99.6	
50th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
30th %ile Green (s)	10.0	10.0		10.0	10.0		102.0	102.0		102.0	102.0	
30th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		116.0	116.0		116.0	116.0	
10th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
Stops (vph)	63	12		26	13		5	70		3	84	
Fuel Used(gal)	2	1		1	0		0	5		0	8	
CO Emissions (g/hr)	121	43		47	32		20	350		23	571	
NOx Emissions (g/hr)	24	8		9	6		4	68		5	111	
VOC Emissions (g/hr)	28	10		11	7		5	81		5	132	
Dilemma Vehicles (#)	0	0		0	0		0	15		0	15	
Queue Length 50th (ft)	60	4		24	9		3	31		1	12	
Queue Length 95th (ft)	102	34		51	34		10	52		4	25	
Internal Link Dist (ft)		1296			1168			1200			1472	
Turn Bay Length (ft)	60			60			60			60		
Base Capacity (vph)	434	567		428	579		385	2703		539	2680	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	20		0	8		0	0		0	0	
Reduced v/c Ratio	0.18	0.08		0.08	0.05		0.08	0.21		0.06	0.30	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 6.2 Intersection LOS: A

Intersection Capacity Utilization 45.4% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: 23rd St & Norwalk Bl

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	60		0	60		0
Storage Lanes	0		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.951			0.920			0.995			0.997	
Flt Protected		0.976			0.988		0.950			0.950		
Satd. Flow (prot)	0	1547	0	0	1515	0	1490	3151	0	1490	3157	0
Flt Permitted		0.832			0.920		0.286			0.329		
Satd. Flow (perm)	0	1319	0	0	1411	0	449	3151	0	516	3157	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			78			4			3	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		1904			1120			1552			1024	
Travel Time (s)		51.9			30.5			26.5			17.5	
Volume (vph)	22	6	16	50	32	120	10	561	18	71	643	14
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	25	7	18	57	37	138	11	645	21	82	739	16
Lane Group Flow (vph)	0	50	0	0	232	0	11	666	0	82	755	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	56.0	56.0	0.0	56.0	56.0	0.0	64.0	64.0	0.0	64.0	64.0	0.0
Total Split (%)	46.7%	46.7%	0.0%	46.7%	46.7%	0.0%	53.3%	53.3%	0.0%	53.3%	53.3%	0.0%
Maximum Green (s)	52.0	52.0		52.0	52.0		60.0	60.0		60.0	60.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

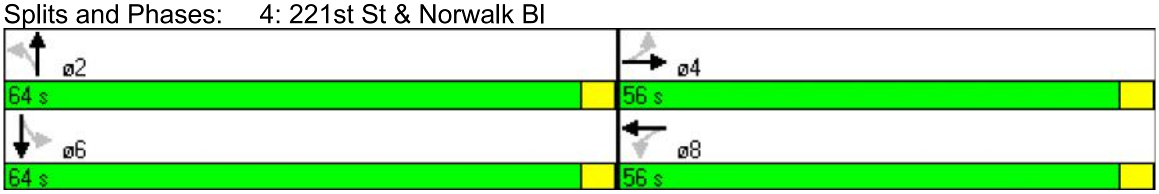
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		17.3			17.3		94.7	94.7		94.7	94.7	
Actuated g/C Ratio		0.14			0.14		0.79	0.79		0.79	0.79	
v/c Ratio		0.24			0.86		0.03	0.27		0.20	0.30	
Uniform Delay, d1		28.8			33.0		2.7	3.4		3.2	3.5	
Control Delay		30.1			33.6		3.7	3.4		5.7	4.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		30.1			33.6		3.7	3.4		5.7	4.2	
LOS		C			C		A	A		A	A	
Approach Delay		30.1			33.6			3.4			4.4	
Approach LOS		C			C			A			A	
90th %ile Green (s)	26.2	26.2		26.2	26.2		85.8	85.8		85.8	85.8	
90th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
70th %ile Green (s)	20.7	20.7		20.7	20.7		91.3	91.3		91.3	91.3	
70th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
50th %ile Green (s)	17.1	17.1		17.1	17.1		94.9	94.9		94.9	94.9	
50th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
30th %ile Green (s)	13.6	13.6		13.6	13.6		98.4	98.4		98.4	98.4	
30th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
10th %ile Green (s)	8.8	8.8		8.8	8.8		103.2	103.2		103.2	103.2	
10th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
Stops (vph)		26			131		3	112		16	144	
Fuel Used(gal)		1			4		0	8		1	7	
CO Emissions (g/hr)		76			267		10	531		51	458	
NOx Emissions (g/hr)		15			52		2	103		10	89	
VOC Emissions (g/hr)		18			62		2	123		12	106	
Dilemma Vehicles (#)		0			0		0	37		0	31	
Queue Length 50th (ft)		22			120		1	44		9	47	
Queue Length 95th (ft)		53			188		6	83		43	136	
Internal Link Dist (ft)		1824			1040			1472			944	
Turn Bay Length (ft)							60			60		
Base Capacity (vph)		582			656		354	2488		407	2492	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.09			0.35		0.03	0.27		0.20	0.30	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86
Intersection Signal Delay: 8.5 | Intersection LOS: A
Intersection Capacity Utilization 47.7% | ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 4: 221st St & Norwalk Bl



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.966	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1490	3167	1333	1490	3167	1333	1490	3167	1333	1490	3059	0
Flt Permitted	0.196			0.341			0.220			0.384		
Satd. Flow (perm)	307	3167	1333	535	3167	1333	345	3167	1333	602	3059	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			125			56			110		35	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		1632			1664			1024			560	
Travel Time (s)		27.8			28.4			17.5			9.5	
Volume (vph)	97	629	169	143	978	50	182	415	99	95	492	147
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	108	699	188	159	1087	56	202	461	110	106	547	163
Lane Group Flow (vph)	108	699	188	159	1087	56	202	461	110	106	710	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phases	4	4	4	8	8	8	2	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	76.0	76.0	76.0	76.0	76.0	76.0	44.0	44.0	44.0	44.0	44.0	0.0
Total Split (%)	63.3%	63.3%	63.3%	63.3%	63.3%	63.3%	36.7%	36.7%	36.7%	36.7%	36.7%	0.0%
Maximum Green (s)	72.0	72.0	72.0	72.0	72.0	72.0	40.0	40.0	40.0	40.0	40.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	50.3	50.3	50.3	50.3	50.3	50.3	61.7	61.7	61.7	61.7	61.7	
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.42	0.42	0.51	0.51	0.51	0.51	0.51	
v/c Ratio	0.84	0.53	0.30	0.71	0.82	0.09	1.13	0.28	0.15	0.34	0.45	
Uniform Delay, d1	31.2	26.0	7.2	28.8	30.8	0.0	29.1	16.6	0.0	17.2	17.3	
Control Delay	42.5	25.6	6.6	31.9	31.2	3.3	141.7	21.6	7.6	26.9	21.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	42.5	25.6	6.6	31.9	31.2	3.3	141.7	21.6	7.6	26.9	21.4	
LOS	D	C	A	C	C	A	F	C	A	C	C	
Approach Delay		23.9			30.1			51.0			22.1	
Approach LOS		C			C			D			C	
90th %ile Green (s)	72.0	72.0	72.0	72.0	72.0	72.0	40.0	40.0	40.0	40.0	40.0	
90th %ile Term Code	Max	Max	Max	Hold	Hold	Hold	Coord	Coord	Coord	Coord	Coord	
70th %ile Green (s)	58.8	58.8	58.8	58.8	58.8	58.8	53.2	53.2	53.2	53.2	53.2	
70th %ile Term Code	Gap	Gap	Gap	Hold	Hold	Hold	Coord	Coord	Coord	Coord	Coord	
50th %ile Green (s)	45.3	45.3	45.3	45.3	45.3	45.3	66.7	66.7	66.7	66.7	66.7	
50th %ile Term Code	Hold	Hold	Hold	Gap	Gap	Gap	Coord	Coord	Coord	Coord	Coord	
30th %ile Green (s)	40.7	40.7	40.7	40.7	40.7	40.7	71.3	71.3	71.3	71.3	71.3	
30th %ile Term Code	Hold	Hold	Hold	Gap	Gap	Gap	Coord	Coord	Coord	Coord	Coord	
10th %ile Green (s)	34.6	34.6	34.6	34.6	34.6	34.6	77.4	77.4	77.4	77.4	77.4	
10th %ile Term Code	Hold	Hold	Hold	Gap	Gap	Gap	Coord	Coord	Coord	Coord	Coord	
Stops (vph)	86	434	32	111	807	5	122	248	40	64	391	
Fuel Used(gal)	3	15	2	4	25	1	8	7	1	2	9	
CO Emissions (g/hr)	193	1014	169	254	1761	45	539	499	86	105	633	
NOx Emissions (g/hr)	38	197	33	49	343	9	105	97	17	21	123	
VOC Emissions (g/hr)	45	235	39	59	408	10	125	116	20	24	147	
Dilemma Vehicles (#)	0	25	0	0	38	0	0	13	0	0	27	
Queue Length 50th (ft)	80	225	32	108	415	0	~176	108	6	42	151	
Queue Length 95th (ft)	131	176	52	133	315	17	#394	195	48	131	306	
Internal Link Dist (ft)		1552			1584			944			480	
Turn Bay Length (ft)												
Base Capacity (vph)	184	1900	850	321	1900	822	178	1629	739	310	1590	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.59	0.37	0.22	0.50	0.57	0.07	1.13	0.28	0.15	0.34	0.45	

Intersection Summary

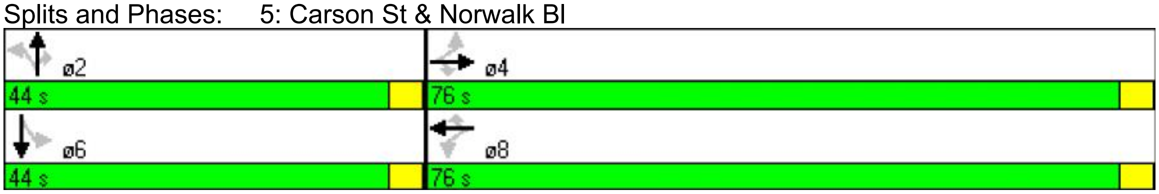
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.13
Intersection Signal Delay: 31.0 | Intersection LOS: C
Intersection Capacity Utilization 82.4% | ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Carson St & Norwalk Bl



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	60		0	110		0
Storage Lanes	0		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.962			0.947			0.995			0.992	
Flt Protected		0.979			0.982		0.950			0.950		
Satd. Flow (prot)	0	1570	0	0	1550	0	1490	3151	0	1490	3141	0
Flt Permitted		0.895			0.912		0.417			0.187		
Satd. Flow (perm)	0	1435	0	0	1439	0	654	3151	0	293	3141	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			24			6			9	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		1936			1632			736			1008	
Travel Time (s)		52.8			44.5			12.5			17.2	
Volume (vph)	21	15	14	19	13	21	60	955	35	63	455	24
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	17	16	22	15	24	70	1110	41	73	529	28
Lane Group Flow (vph)	0	57	0	0	61	0	70	1151	0	73	557	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	40.0	40.0	0.0	40.0	40.0	0.0	80.0	80.0	0.0	80.0	80.0	0.0
Total Split (%)	33.3%	33.3%	0.0%	33.3%	33.3%	0.0%	66.7%	66.7%	0.0%	66.7%	66.7%	0.0%
Maximum Green (s)	36.0	36.0		36.0	36.0		76.0	76.0		76.0	76.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		8.7			8.7		106.0	106.0		106.0	106.0	
Actuated g/C Ratio		0.07			0.07		0.88	0.88		0.88	0.88	
v/c Ratio		0.48			0.48		0.12	0.41		0.28	0.20	
Uniform Delay, d1		39.0			32.8		1.1	1.6		1.3	1.2	
Control Delay		40.6			35.4		2.0	2.3		7.3	2.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		40.6			35.4		2.0	2.3		7.3	2.5	
LOS		D			D		A	A		A	A	
Approach Delay		40.6			35.4			2.3			3.1	
Approach LOS		D			D			A			A	
90th %ile Green (s)	12.5	12.5		12.5	12.5		99.5	99.5		99.5	99.5	
90th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
70th %ile Green (s)	10.1	10.1		10.1	10.1		101.9	101.9		101.9	101.9	
70th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
50th %ile Green (s)	8.4	8.4		8.4	8.4		103.6	103.6		103.6	103.6	
50th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
30th %ile Green (s)	6.8	6.8		6.8	6.8		105.2	105.2		105.2	105.2	
30th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		116.0	116.0		116.0	116.0	
10th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
Stops (vph)		36			32		9	168		28	137	
Fuel Used(gal)		1			1		0	7		1	5	
CO Emissions (g/hr)		94			85		29	493		56	340	
NOx Emissions (g/hr)		18			17		6	96		11	66	
VOC Emissions (g/hr)		22			20		7	114		13	79	
Dilemma Vehicles (#)		0			0		0	35		0	10	
Queue Length 50th (ft)		31			28		6	68		18	46	
Queue Length 95th (ft)		69			67		16	109		49	76	
Internal Link Dist (ft)		1856			1552			656			928	
Turn Bay Length (ft)							60			110		
Base Capacity (vph)		442			449		578	2785		259	2777	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.13			0.14		0.12	0.41		0.28	0.20	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

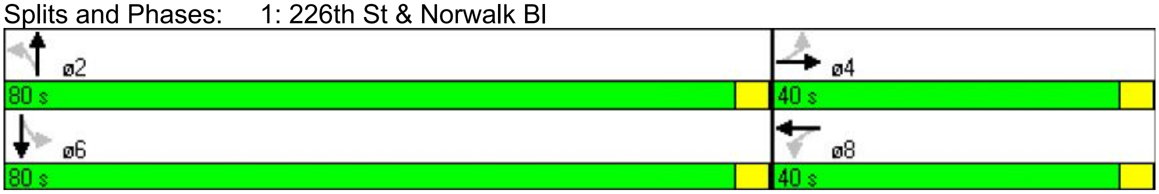
Maximum v/c Ratio: 0.48

Intersection Signal Delay: 4.7 Intersection LOS: A

Intersection Capacity Utilization 49.3% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: 226th St & Norwalk Bl



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	6	0	19	0	986	12	41	556	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	0	0	7	0	22	0	1147	14	48	647	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1008			1280	
pX, platoon unblocked												
vC, conflicting volume	1337	1902	323	1572	1895	580	647			1160		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1337	1902	323	1572	1895	580	647			1160		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	90	100	95	100			92		
cM capacity (veh/h)	100	63	672	70	63	458	935			598		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	29	0	764	396	48	431	216
Volume Left	0	7	0	0	0	48	0	0
Volume Right	0	22	0	0	14	0	0	0
cSH	1700	196	1700	1700	1700	598	1700	1700
Volume to Capacity	0.00	0.15	0.00	0.45	0.23	0.08	0.25	0.13
Queue Length (ft)	0	13	0	0	0	6	0	0
Control Delay (s)	0.0	26.5	0.0	0.0	0.0	11.5	0.0	0.0
Lane LOS	A	D				B		
Approach Delay (s)	0.0	26.5	0.0			0.8		
Approach LOS	A	D						

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	60		0	60		0	60		0	60		0
Storage Lanes	1		0	1		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.905			0.912			0.998			0.984	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1490	1508	0	1490	1520	0	1490	3160	0	1490	3116	0
Flt Permitted	0.724			0.720			0.331			0.189		
Satd. Flow (perm)	1136	1508	0	1129	1520	0	519	3160	0	296	3116	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			30			2			21	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		1376			1248			1280			1552	
Travel Time (s)		37.5			34.0			21.8			26.5	
Volume (vph)	73	18	31	10	18	26	40	959	11	56	559	69
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	85	21	36	12	21	30	47	1115	13	65	650	80
Lane Group Flow (vph)	85	57	0	12	51	0	47	1128	0	65	730	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	42.0	42.0	0.0	42.0	42.0	0.0	78.0	78.0	0.0	78.0	78.0	0.0
Total Split (%)	35.0%	35.0%	0.0%	35.0%	35.0%	0.0%	65.0%	65.0%	0.0%	65.0%	65.0%	0.0%
Maximum Green (s)	38.0	38.0		38.0	38.0		74.0	74.0		74.0	74.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	13.3	13.3		13.1	13.1		101.6	101.6		101.6	101.6	
Actuated g/C Ratio	0.11	0.11		0.11	0.11		0.85	0.85		0.85	0.85	
v/c Ratio	0.67	0.28		0.10	0.27		0.11	0.42		0.26	0.28	
Uniform Delay, d1	52.5	18.2		49.1	20.3		1.8	2.6		2.1	2.1	
Control Delay	51.7	22.4		45.2	24.2		3.3	3.5		4.4	1.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.7	22.5		45.2	24.2		3.3	3.5		4.4	1.6	
LOS	D	C		D	C		A	A		A	A	
Approach Delay		39.9			28.2			3.5			1.9	
Approach LOS		D			C			A			A	
90th %ile Green (s)	19.8	19.8		19.8	19.8		92.2	92.2		92.2	92.2	
90th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
70th %ile Green (s)	16.0	16.0		16.0	16.0		96.0	96.0		96.0	96.0	
70th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
50th %ile Green (s)	13.3	13.3		13.3	13.3		98.7	98.7		98.7	98.7	
50th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
30th %ile Green (s)	10.7	10.7		10.7	10.7		101.3	101.3		101.3	101.3	
30th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		116.0	116.0		116.0	116.0	
10th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
Stops (vph)	69	21		10	20		9	212		9	67	
Fuel Used(gal)	2	1		0	1		0	11		1	7	
CO Emissions (g/hr)	132	61		17	53		32	782		51	523	
NOx Emissions (g/hr)	26	12		3	10		6	152		10	102	
VOC Emissions (g/hr)	31	14		4	12		7	181		12	121	
Dilemma Vehicles (#)	0	0		0	0		0	33		0	13	
Queue Length 50th (ft)	64	15		8	15		5	94		3	17	
Queue Length 95th (ft)	108	50		25	47		17	152		18	50	
Internal Link Dist (ft)		1296			1168			1200			1472	
Turn Bay Length (ft)	60			60			60			60		
Base Capacity (vph)	360	502		358	502		440	2677		251	2643	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	25		0	0		0	0		0	0	
Reduced v/c Ratio	0.24	0.12		0.03	0.10		0.11	0.42		0.26	0.28	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67
Intersection Signal Delay: 6.0 Intersection LOS: A
Intersection Capacity Utilization 55.2% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: 23rd St & Norwalk Bl

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	60		0	60		0
Storage Lanes	0		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.975			0.924			0.991			0.997	
Flt Protected		0.981			0.987		0.950			0.950		
Satd. Flow (prot)	0	1594	0	0	1520	0	1490	3138	0	1490	3157	0
Flt Permitted		0.874			0.911		0.342			0.206		
Satd. Flow (perm)	0	1420	0	0	1403	0	536	3138	0	323	3157	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			50			12			4	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		1904			1120			1552			1024	
Travel Time (s)		51.9			30.5			26.5			17.5	
Volume (vph)	15	16	7	45	29	94	37	951	58	109	642	13
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	17	18	8	51	33	107	42	1081	66	124	730	15
Lane Group Flow (vph)	0	43	0	0	191	0	42	1147	0	124	745	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	32.0	32.0	0.0	32.0	32.0	0.0	88.0	88.0	0.0	88.0	88.0	0.0
Total Split (%)	26.7%	26.7%	0.0%	26.7%	26.7%	0.0%	73.3%	73.3%	0.0%	73.3%	73.3%	0.0%
Maximum Green (s)	28.0	28.0		28.0	28.0		84.0	84.0		84.0	84.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

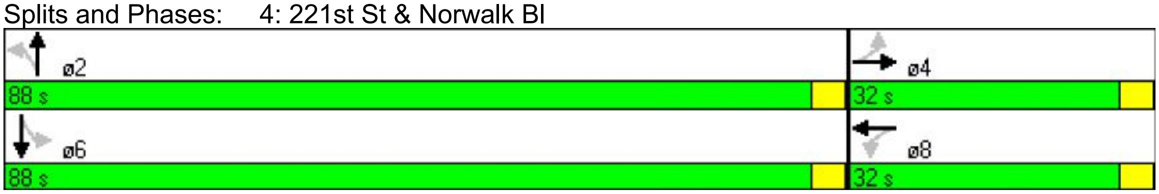
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		17.2			17.2		94.8	94.8		94.8	94.8	
Actuated g/C Ratio		0.14			0.14		0.79	0.79		0.79	0.79	
v/c Ratio		0.20			0.78		0.10	0.46		0.49	0.30	
Uniform Delay, d1		36.7			36.3		2.9	4.1		4.3	3.4	
Control Delay		36.7			40.5		3.9	4.4		10.5	2.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		36.7			40.5		3.9	4.4		10.5	2.8	
LOS		D			D		A	A		B	A	
Approach Delay		36.7			40.5			4.4			3.9	
Approach LOS		D			D			A			A	
90th %ile Green (s)	25.6	25.6		25.6	25.6		86.4	86.4		86.4	86.4	
90th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
70th %ile Green (s)	20.7	20.7		20.7	20.7		91.3	91.3		91.3	91.3	
70th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
50th %ile Green (s)	17.1	17.1		17.1	17.1		94.9	94.9		94.9	94.9	
50th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
30th %ile Green (s)	13.7	13.7		13.7	13.7		98.3	98.3		98.3	98.3	
30th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
10th %ile Green (s)	9.0	9.0		9.0	9.0		103.0	103.0		103.0	103.0	
10th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
Stops (vph)		27			118		9	235		37	107	
Fuel Used(gal)		1			3		1	14		1	6	
CO Emissions (g/hr)		70			241		35	967		95	418	
NOx Emissions (g/hr)		14			47		7	188		18	81	
VOC Emissions (g/hr)		16			56		8	224		22	97	
Dilemma Vehicles (#)		0			0		0	55		0	20	
Queue Length 50th (ft)		24			108		6	106		16	44	
Queue Length 95th (ft)		53			172		14	121		m36	m66	
Internal Link Dist (ft)		1824			1040			1472			944	
Turn Bay Length (ft)							60			60		
Base Capacity (vph)		337			366		423	2481		255	2494	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.13			0.52		0.10	0.46		0.49	0.30	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78
Intersection Signal Delay: 7.8 Intersection LOS: A
Intersection Capacity Utilization 61.3% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: 221st St & Norwalk Bl



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1490	3167	1333	1490	3167	1333	1490	3167	1333	1490	3075	0
Flt Permitted	0.302			0.210			0.330			0.281		
Satd. Flow (perm)	474	3167	1333	329	3167	1333	518	3167	1333	441	3075	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			181			107			94		29	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		1632			1664			1024			560	
Travel Time (s)		27.8			28.4			17.5			9.5	
Volume (vph)	219	936	177	185	717	105	235	679	148	150	480	113
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	223	955	181	189	732	107	240	693	151	153	490	115
Lane Group Flow (vph)	223	955	181	189	732	107	240	693	151	153	605	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phases	4	4	4	8	8	8	2	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	66.0	66.0	66.0	66.0	66.0	66.0	54.0	54.0	54.0	54.0	54.0	0.0
Total Split (%)	55.0%	55.0%	55.0%	55.0%	55.0%	55.0%	45.0%	45.0%	45.0%	45.0%	45.0%	0.0%
Maximum Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
Actuated g/C Ratio	0.52	0.52	0.52	0.52	0.52	0.52	0.42	0.42	0.42	0.42	0.42	
v/c Ratio	0.91	0.58	0.23	1.11	0.45	0.14	1.11	0.53	0.25	0.83	0.47	
Uniform Delay, d1	26.5	20.1	0.0	29.0	18.2	0.0	35.0	26.1	8.1	31.2	24.0	
Control Delay	67.5	21.9	2.9	132.6	19.3	3.2	125.5	26.5	11.1	67.7	25.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	67.5	21.9	2.9	132.6	19.3	3.2	125.5	26.5	11.1	67.7	25.5	
LOS	E	C	A	F	B	A	F	C	B	E	C	
Approach Delay		26.9			38.5			46.3			34.0	
Approach LOS		C			D			D			C	
90th %ile Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Coord	Coord	Coord	Coord	Coord	
70th %ile Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
70th %ile Term Code	Max	Max	Max	Max	Max	Max	Coord	Coord	Coord	Coord	Coord	
50th %ile Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
50th %ile Term Code	Max	Max	Max	Max	Max	Max	Coord	Coord	Coord	Coord	Coord	
30th %ile Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
30th %ile Term Code	Max	Max	Max	Max	Max	Max	Coord	Coord	Coord	Coord	Coord	
10th %ile Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
10th %ile Term Code	Hold	Hold	Hold	Max	Max	Max	Coord	Coord	Coord	Coord	Coord	
Stops (vph)	174	625	14	137	433	10	190	446	73	123	396	
Fuel Used(gal)	7	21	2	8	15	1	10	13	2	4	9	
CO Emissions (g/hr)	499	1445	154	589	1060	95	664	892	145	269	644	
NOx Emissions (g/hr)	97	281	30	115	206	18	129	174	28	52	125	
VOC Emissions (g/hr)	116	335	36	137	246	22	154	207	34	62	149	
Dilemma Vehicles (#)	0	39	0	0	30	0	0	7	0	0	25	
Queue Length 50th (ft)	152	260	0	~168	181	0	~221	210	36	104	167	
Queue Length 95th (ft)	#322	324	35	#318	231	28	#385	183	54	#236	220	
Internal Link Dist (ft)		1552			1584			944			480	
Turn Bay Length (ft)												
Base Capacity (vph)	245	1636	776	170	1636	740	216	1320	610	184	1298	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.91	0.58	0.23	1.11	0.45	0.14	1.11	0.53	0.25	0.83	0.47	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.11

Intersection Signal Delay: 35.9 Intersection LOS: D

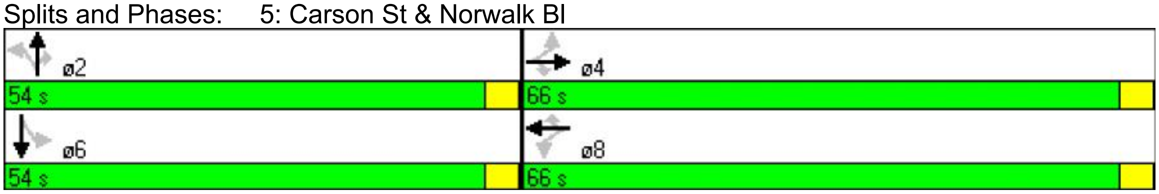
Intersection Capacity Utilization 88.7% ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Carson St & Norwalk Bl



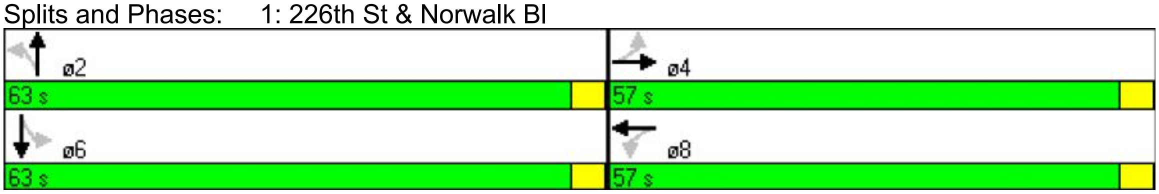
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	60		0	110		0
Storage Lanes	0		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.932			0.930			0.994			0.998	
Flt Protected		0.990			0.983		0.950			0.950		
Satd. Flow (prot)	0	1538	0	0	1524	0	1490	3148	0	1490	3160	0
Flt Permitted		0.936			0.872		0.349			0.396		
Satd. Flow (perm)	0	1454	0	0	1352	0	547	3148	0	621	3160	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		53			58			5			2	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		1936			1632			736			1008	
Travel Time (s)		52.8			44.5			12.5			17.2	
Volume (vph)	17	26	43	47	17	70	13	417	17	63	496	7
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	21	32	53	58	21	86	16	515	21	78	612	9
Lane Group Flow (vph)	0	106	0	0	165	0	16	536	0	78	621	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	57.0	57.0	0.0	57.0	57.0	0.0	63.0	63.0	0.0	63.0	63.0	0.0
Total Split (%)	47.5%	47.5%	0.0%	47.5%	47.5%	0.0%	52.5%	52.5%	0.0%	52.5%	52.5%	0.0%
Maximum Green (s)	53.0	53.0		53.0	53.0		59.0	59.0		59.0	59.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		13.7			13.7		98.3	98.3		98.3	98.3	
Actuated g/C Ratio		0.11			0.11		0.82	0.82		0.82	0.82	
v/c Ratio		0.50			0.80		0.04	0.21		0.15	0.24	
Uniform Delay, d1		24.5			33.3		2.0	2.3		2.2	2.4	
Control Delay		25.6			33.5		3.2	2.9		3.3	3.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		25.6			33.5		3.2	2.9		3.3	3.1	
LOS		C			C		A	A		A	A	
Approach Delay		25.6			33.5			3.0			3.2	
Approach LOS		C			C			A			A	
90th %ile Green (s)	21.1	21.1		21.1	21.1		90.9	90.9		90.9	90.9	
90th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
70th %ile Green (s)	16.6	16.6		16.6	16.6		95.4	95.4		95.4	95.4	
70th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
50th %ile Green (s)	13.6	13.6		13.6	13.6		98.4	98.4		98.4	98.4	
50th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
30th %ile Green (s)	10.7	10.7		10.7	10.7		101.3	101.3		101.3	101.3	
30th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
10th %ile Green (s)	6.7	6.7		6.7	6.7		105.3	105.3		105.3	105.3	
10th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
Stops (vph)		41			84		3	87		14	121	
Fuel Used(gal)		2			3		0	3		1	5	
CO Emissions (g/hr)		141			217		7	229		43	346	
NOx Emissions (g/hr)		28			42		1	45		8	67	
VOC Emissions (g/hr)		33			50		2	53		10	80	
Dilemma Vehicles (#)		0			0		0	18		0	20	
Queue Length 50th (ft)		38			82		2	36		21	94	
Queue Length 95th (ft)		76			129		7	62		10	29	
Internal Link Dist (ft)		1856			1552			656			928	
Turn Bay Length (ft)							60			110		
Base Capacity (vph)		672			630		448	2579		508	2588	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.16			0.26		0.04	0.21		0.15	0.24	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.80
Intersection Signal Delay: 7.9 Intersection LOS: A
Intersection Capacity Utilization 43.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: 226th St & Norwalk Bl



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	12	0	29	0	495	16	48	634	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	15	0	35	0	604	20	59	773	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1008			1280	
pX, platoon unblocked												
vC, conflicting volume	1227	1513	387	1117	1504	312	773			623		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1227	1513	387	1117	1504	312	773			623		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	91	100	95	100			94		
cM capacity (veh/h)	121	111	612	154	113	684	838			954		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	50	0	402	221	59	515	258
Volume Left	0	15	0	0	0	59	0	0
Volume Right	0	35	0	0	20	0	0	0
cSH	1700	341	1700	1700	1700	954	1700	1700
Volume to Capacity	0.00	0.15	0.00	0.24	0.13	0.06	0.30	0.15
Queue Length (ft)	0	13	0	0	0	5	0	0
Control Delay (s)	0.0	17.3	0.0	0.0	0.0	9.0	0.0	0.0
Lane LOS	A	C				A		
Approach Delay (s)	0.0	17.3	0.0			0.6		
Approach LOS	A	C						

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	60		0	60		0	60		0	60		0
Storage Lanes	1		0	1		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.867			0.908			0.999			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1490	1445	0	1490	1513	0	1490	3164	0	1490	3135	0
Flt Permitted	0.737			0.728			0.280			0.395		
Satd. Flow (perm)	1156	1445	0	1142	1513	0	439	3164	0	620	3135	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			19			1			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		1376			1248			1280			1552	
Travel Time (s)		37.5			34.0			21.8			26.5	
Volume (vph)	67	4	34	28	10	16	26	479	4	28	646	46
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	79	5	40	33	12	19	31	564	5	33	760	54
Lane Group Flow (vph)	79	45	0	33	31	0	31	569	0	33	814	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	49.0	49.0	0.0	49.0	49.0	0.0	71.0	71.0	0.0	71.0	71.0	0.0
Total Split (%)	40.8%	40.8%	0.0%	40.8%	40.8%	0.0%	59.2%	59.2%	0.0%	59.2%	59.2%	0.0%
Maximum Green (s)	45.0	45.0		45.0	45.0		67.0	67.0		67.0	67.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	12.4	12.4		12.2	12.2		102.5	102.5		102.5	102.5	
Actuated g/C Ratio	0.10	0.10		0.10	0.10		0.85	0.85		0.85	0.85	
v/c Ratio	0.66	0.24		0.28	0.18		0.08	0.21		0.06	0.30	
Uniform Delay, d1	53.0	5.5		50.9	19.3		1.6	1.8		1.6	2.0	
Control Delay	51.7	16.6		48.2	25.8		2.7	2.1		1.4	1.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.7	16.6		48.2	25.8		2.7	2.1		1.4	1.5	
LOS	D	B		D	C		A	A		A	A	
Approach Delay		39.0			37.4			2.2			1.5	
Approach LOS		D			D			A			A	
90th %ile Green (s)	18.2	18.2		18.2	18.2		93.8	93.8		93.8	93.8	
90th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
70th %ile Green (s)	14.8	14.8		14.8	14.8		97.2	97.2		97.2	97.2	
70th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
50th %ile Green (s)	12.4	12.4		12.4	12.4		99.6	99.6		99.6	99.6	
50th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
30th %ile Green (s)	10.0	10.0		10.0	10.0		102.0	102.0		102.0	102.0	
30th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		116.0	116.0		116.0	116.0	
10th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
Stops (vph)	63	12		26	13		5	73		3	81	
Fuel Used(gal)	2	1		1	0		0	5		0	8	
CO Emissions (g/hr)	121	43		47	32		20	359		23	580	
NOx Emissions (g/hr)	24	8		9	6		4	70		5	113	
VOC Emissions (g/hr)	28	10		11	7		5	83		5	134	
Dilemma Vehicles (#)	0	0		0	0		0	15		0	16	
Queue Length 50th (ft)	60	4		24	9		3	32		1	13	
Queue Length 95th (ft)	102	34		51	34		10	52		4	29	
Internal Link Dist (ft)		1296			1168			1200			1472	
Turn Bay Length (ft)	60			60			60			60		
Base Capacity (vph)	434	567		428	579		375	2703		530	2680	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	20		0	8		0	0		0	0	
Reduced v/c Ratio	0.18	0.08		0.08	0.05		0.08	0.21		0.06	0.30	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66
Intersection Signal Delay: 6.2 Intersection LOS: A
Intersection Capacity Utilization 45.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: 23rd St & Norwalk Bl

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	60		0	60		0
Storage Lanes	0		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.951			0.920			0.995			0.997	
Flt Protected		0.976			0.988		0.950			0.950		
Satd. Flow (prot)	0	1547	0	0	1515	0	1490	3151	0	1490	3157	0
Flt Permitted		0.832			0.920		0.279			0.323		
Satd. Flow (perm)	0	1319	0	0	1411	0	438	3151	0	507	3157	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			78			4			2	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		1904			1120			1552			1024	
Travel Time (s)		51.9			30.5			26.5			17.5	
Volume (vph)	22	6	16	50	32	120	10	571	18	71	657	14
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	25	7	18	57	37	138	11	656	21	82	755	16
Lane Group Flow (vph)	0	50	0	0	232	0	11	677	0	82	771	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	56.0	56.0	0.0	56.0	56.0	0.0	64.0	64.0	0.0	64.0	64.0	0.0
Total Split (%)	46.7%	46.7%	0.0%	46.7%	46.7%	0.0%	53.3%	53.3%	0.0%	53.3%	53.3%	0.0%
Maximum Green (s)	52.0	52.0		52.0	52.0		60.0	60.0		60.0	60.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		17.3			17.3		94.7	94.7		94.7	94.7	
Actuated g/C Ratio		0.14			0.14		0.79	0.79		0.79	0.79	
v/c Ratio		0.24			0.86		0.03	0.27		0.20	0.31	
Uniform Delay, d1		28.8			33.0		2.7	3.4		3.2	3.5	
Control Delay		30.1			33.6		3.6	3.3		5.5	4.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		30.1			33.6		3.6	3.3		5.5	4.1	
LOS		C			C		A	A		A	A	
Approach Delay		30.1			33.6			3.3			4.2	
Approach LOS		C			C			A			A	
90th %ile Green (s)	26.2	26.2		26.2	26.2		85.8	85.8		85.8	85.8	
90th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
70th %ile Green (s)	20.7	20.7		20.7	20.7		91.3	91.3		91.3	91.3	
70th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
50th %ile Green (s)	17.1	17.1		17.1	17.1		94.9	94.9		94.9	94.9	
50th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
30th %ile Green (s)	13.6	13.6		13.6	13.6		98.4	98.4		98.4	98.4	
30th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
10th %ile Green (s)	8.8	8.8		8.8	8.8		103.2	103.2		103.2	103.2	
10th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
Stops (vph)		26			131		3	113		16	145	
Fuel Used(gal)		1			4		0	8		1	7	
CO Emissions (g/hr)		76			267		10	539		51	464	
NOx Emissions (g/hr)		15			52		2	105		10	90	
VOC Emissions (g/hr)		18			62		2	125		12	108	
Dilemma Vehicles (#)		0			0		0	31		0	31	
Queue Length 50th (ft)		22			120		1	45		10	50	
Queue Length 95th (ft)		53			188		6	81		40	131	
Internal Link Dist (ft)		1824			1040			1472			944	
Turn Bay Length (ft)							60			60		
Base Capacity (vph)		582			656		346	2488		400	2492	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.09			0.35		0.03	0.27		0.20	0.31	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

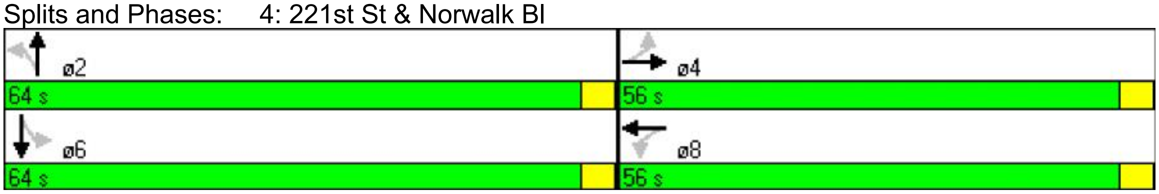
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86
Intersection Signal Delay: 8.6 Intersection LOS: A
Intersection Capacity Utilization 48.2% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 4: 221st St & Norwalk Bl



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.966	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1490	3167	1333	1490	3167	1333	1490	3167	1333	1490	3059	0
Flt Permitted	0.190			0.337			0.231			0.392		
Satd. Flow (perm)	298	3167	1333	529	3167	1333	362	3167	1333	615	3059	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138			56			113		35	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		1632			1664			1024			560	
Travel Time (s)		27.8			28.4			17.5			9.5	
Volume (vph)	97	629	177	147	978	50	188	416	102	95	494	147
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	108	699	197	163	1087	56	209	462	113	106	549	163
Lane Group Flow (vph)	108	699	197	163	1087	56	209	462	113	106	712	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phases	4	4	4	8	8	8	2	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	74.0	74.0	74.0	74.0	74.0	74.0	46.0	46.0	46.0	46.0	46.0	0.0
Total Split (%)	61.7%	61.7%	61.7%	61.7%	61.7%	61.7%	38.3%	38.3%	38.3%	38.3%	38.3%	0.0%
Maximum Green (s)	70.0	70.0	70.0	70.0	70.0	70.0	42.0	42.0	42.0	42.0	42.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	51.0	51.0	51.0	51.0	51.0	51.0	61.1	61.1	61.1	61.1	61.1	
Actuated g/C Ratio	0.43	0.43	0.43	0.43	0.43	0.43	0.51	0.51	0.51	0.51	0.51	
v/c Ratio	0.85	0.52	0.31	0.72	0.81	0.09	1.14	0.29	0.15	0.34	0.45	
Uniform Delay, d1	31.1	25.4	6.2	28.7	30.2	0.0	29.5	17.0	0.0	17.5	17.8	
Control Delay	45.3	25.1	6.0	32.9	30.8	3.4	140.5	22.5	8.0	26.8	21.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	45.3	25.1	6.0	32.9	30.8	3.4	140.5	22.5	8.0	26.8	21.7	
LOS	D	C	A	C	C	A	F	C	A	C	C	
Approach Delay		23.5			29.8			51.9			22.4	
Approach LOS		C			C			D			C	
90th %ile Green (s)	70.0	70.0	70.0	70.0	70.0	70.0	42.0	42.0	42.0	42.0	42.0	
90th %ile Term Code	Max	Max	Max	Hold	Hold	Hold	Coord	Coord	Coord	Coord	Coord	
70th %ile Green (s)	61.5	61.5	61.5	61.5	61.5	61.5	50.5	50.5	50.5	50.5	50.5	
70th %ile Term Code	Gap	Gap	Gap	Hold	Hold	Hold	Coord	Coord	Coord	Coord	Coord	
50th %ile Green (s)	47.4	47.4	47.4	47.4	47.4	47.4	64.6	64.6	64.6	64.6	64.6	
50th %ile Term Code	Gap	Gap	Gap	Hold	Hold	Hold	Coord	Coord	Coord	Coord	Coord	
30th %ile Green (s)	41.0	41.0	41.0	41.0	41.0	41.0	71.0	71.0	71.0	71.0	71.0	
30th %ile Term Code	Hold	Hold	Hold	Gap	Gap	Gap	Coord	Coord	Coord	Coord	Coord	
10th %ile Green (s)	34.9	34.9	34.9	34.9	34.9	34.9	77.1	77.1	77.1	77.1	77.1	
10th %ile Term Code	Hold	Hold	Hold	Gap	Gap	Gap	Coord	Coord	Coord	Coord	Coord	
Stops (vph)	86	429	31	115	799	5	125	254	42	63	395	
Fuel Used(gal)	3	14	2	4	25	1	8	7	1	1	9	
CO Emissions (g/hr)	197	1006	173	264	1748	45	553	509	90	105	640	
NOx Emissions (g/hr)	38	196	34	51	340	9	108	99	18	20	124	
VOC Emissions (g/hr)	46	233	40	61	405	10	128	118	21	24	148	
Dilemma Vehicles (#)	0	25	0	0	38	0	0	15	0	0	27	
Queue Length 50th (ft)	78	218	29	109	403	0	~184	113	6	44	158	
Queue Length 95th (ft)	#153	185	53	145	330	18	#396	193	49	126	299	
Internal Link Dist (ft)		1552			1584			944			480	
Turn Bay Length (ft)												
Base Capacity (vph)	174	1847	835	309	1847	801	184	1611	734	313	1573	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.62	0.38	0.24	0.53	0.59	0.07	1.14	0.29	0.15	0.34	0.45	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated

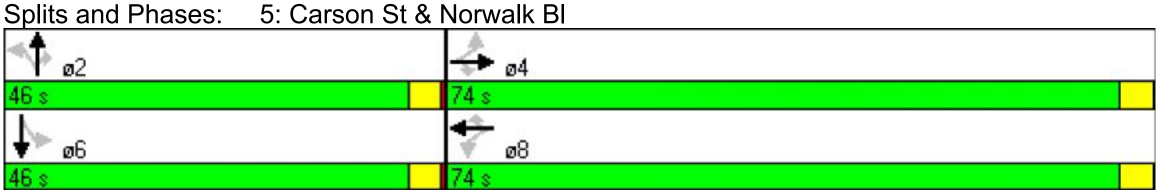
Maximum v/c Ratio: 1.14

Intersection Signal Delay: 31.1	Intersection LOS: C
Intersection Capacity Utilization 82.8%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Carson St & Norwalk Bl



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	60		0	110		0
Storage Lanes	0		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.962			0.952			0.995			0.992	
Flt Protected		0.979			0.980		0.950			0.950		
Satd. Flow (prot)	0	1570	0	0	1555	0	1490	3151	0	1490	3141	0
Flt Permitted		0.890			0.888		0.424			0.197		
Satd. Flow (perm)	0	1427	0	0	1409	0	665	3151	0	309	3141	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			23			7			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		1936			1632			736			1008	
Travel Time (s)		52.8			44.5			12.5			17.2	
Volume (vph)	21	15	14	24	13	21	60	960	35	78	455	24
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	17	16	28	15	24	70	1116	41	91	529	28
Lane Group Flow (vph)	0	57	0	0	67	0	70	1157	0	91	557	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	35.0	35.0	0.0	35.0	35.0	0.0	85.0	85.0	0.0	85.0	85.0	0.0
Total Split (%)	29.2%	29.2%	0.0%	29.2%	29.2%	0.0%	70.8%	70.8%	0.0%	70.8%	70.8%	0.0%
Maximum Green (s)	31.0	31.0		31.0	31.0		81.0	81.0		81.0	81.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

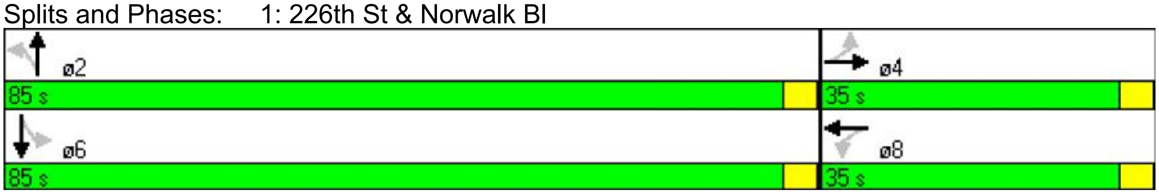
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		9.1			9.1		105.6	105.6		105.6	105.6	
Actuated g/C Ratio		0.08			0.08		0.88	0.88		0.88	0.88	
v/c Ratio		0.46			0.52		0.12	0.42		0.33	0.20	
Uniform Delay, d1		38.7			35.4		1.2	1.7		1.5	1.3	
Control Delay		40.3			37.2		2.1	2.4		10.2	4.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		40.3			37.2		2.1	2.4		10.2	4.0	
LOS		D			D		A	A		B	A	
Approach Delay		40.3			37.2			2.4			4.9	
Approach LOS		D			D			A			A	
90th %ile Green (s)	13.4	13.4		13.4	13.4		98.6	98.6		98.6	98.6	
90th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
70th %ile Green (s)	10.7	10.7		10.7	10.7		101.3	101.3		101.3	101.3	
70th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
50th %ile Green (s)	8.8	8.8		8.8	8.8		103.2	103.2		103.2	103.2	
50th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
30th %ile Green (s)	7.0	7.0		7.0	7.0		105.0	105.0		105.0	105.0	
30th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		116.0	116.0		116.0	116.0	
10th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
Stops (vph)		36			38		9	177		37	161	
Fuel Used(gal)		1			1		0	7		1	5	
CO Emissions (g/hr)		94			97		29	503		74	367	
NOx Emissions (g/hr)		18			19		6	98		14	71	
VOC Emissions (g/hr)		22			23		7	117		17	85	
Dilemma Vehicles (#)		0			0		0	35		0	12	
Queue Length 50th (ft)		31			33		6	71		31	89	
Queue Length 95th (ft)		69			74		17	117		54	113	
Internal Link Dist (ft)		1856			1552			656			928	
Turn Bay Length (ft)							60			110		
Base Capacity (vph)		381			381		585	2774		272	2766	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.15			0.18		0.12	0.42		0.33	0.20	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.52
Intersection Signal Delay: 5.5 Intersection LOS: A
Intersection Capacity Utilization 50.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: 226th St & Norwalk Bl



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	6	0	19	0	1001	12	41	571	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	0	0	7	0	22	0	1164	14	48	664	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								1008			1280	
pX, platoon unblocked												
vC, conflicting volume	1363	1937	332	1598	1930	589	664			1178		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1363	1937	332	1598	1930	589	664			1178		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	90	100	95	100			92		
cM capacity (veh/h)	95	60	664	67	60	452	921			589		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	29	0	776	402	48	443	221
Volume Left	0	7	0	0	0	48	0	0
Volume Right	0	22	0	0	14	0	0	0
cSH	1700	189	1700	1700	1700	589	1700	1700
Volume to Capacity	0.00	0.15	0.00	0.46	0.24	0.08	0.26	0.13
Queue Length (ft)	0	13	0	0	0	7	0	0
Control Delay (s)	0.0	27.4	0.0	0.0	0.0	11.7	0.0	0.0
Lane LOS	A	D				B		
Approach Delay (s)	0.0	27.4	0.0			0.8		
Approach LOS	A	D						

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	60		0	60		0	60		0	60		0
Storage Lanes	1		0	1		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.905			0.912			0.998			0.984	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1490	1508	0	1490	1520	0	1490	3160	0	1490	3116	0
Flt Permitted	0.724			0.720			0.324			0.184		
Satd. Flow (perm)	1136	1508	0	1129	1520	0	508	3160	0	289	3116	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			30			2			20	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		1376			1248			1280			1552	
Travel Time (s)		37.5			34.0			21.8			26.5	
Volume (vph)	73	18	31	10	18	26	40	974	11	56	574	69
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	85	21	36	12	21	30	47	1133	13	65	667	80
Lane Group Flow (vph)	85	57	0	12	51	0	47	1146	0	65	747	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	42.0	42.0	0.0	42.0	42.0	0.0	78.0	78.0	0.0	78.0	78.0	0.0
Total Split (%)	35.0%	35.0%	0.0%	35.0%	35.0%	0.0%	65.0%	65.0%	0.0%	65.0%	65.0%	0.0%
Maximum Green (s)	38.0	38.0		38.0	38.0		74.0	74.0		74.0	74.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	13.3	13.3		13.1	13.1		101.6	101.6		101.6	101.6	
Actuated g/C Ratio	0.11	0.11		0.11	0.11		0.85	0.85		0.85	0.85	
v/c Ratio	0.67	0.28		0.10	0.27		0.11	0.43		0.27	0.28	
Uniform Delay, d1	52.5	18.2		49.1	20.3		1.8	2.6		2.2	2.1	
Control Delay	51.7	22.4		45.2	24.2		3.3	3.5		4.6	1.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	51.7	22.5		45.2	24.2		3.3	3.5		4.6	1.7	
LOS	D	C		D	C		A	A		A	A	
Approach Delay		39.9			28.2			3.5			1.9	
Approach LOS		D			C			A			A	
90th %ile Green (s)	19.8	19.8		19.8	19.8		92.2	92.2		92.2	92.2	
90th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
70th %ile Green (s)	16.0	16.0		16.0	16.0		96.0	96.0		96.0	96.0	
70th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
50th %ile Green (s)	13.3	13.3		13.3	13.3		98.7	98.7		98.7	98.7	
50th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
30th %ile Green (s)	10.7	10.7		10.7	10.7		101.3	101.3		101.3	101.3	
30th %ile Term Code	Gap	Gap		Hold	Hold		Coord	Coord		Coord	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0		116.0	116.0		116.0	116.0	
10th %ile Term Code	Skip	Skip		Skip	Skip		Coord	Coord		Coord	Coord	
Stops (vph)	69	21		10	20		9	221		9	69	
Fuel Used(gal)	2	1		0	1		0	11		1	8	
CO Emissions (g/hr)	132	61		17	53		32	800		51	535	
NOx Emissions (g/hr)	26	12		3	10		6	156		10	104	
VOC Emissions (g/hr)	31	14		4	12		7	185		12	124	
Dilemma Vehicles (#)	0	0		0	0		0	34		0	15	
Queue Length 50th (ft)	64	15		8	15		5	96		3	20	
Queue Length 95th (ft)	108	50		25	47		17	155		18	52	
Internal Link Dist (ft)		1296			1168			1200			1472	
Turn Bay Length (ft)	60			60			60			60		
Base Capacity (vph)	360	502		358	502		430	2677		245	2642	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	25		0	0		0	0		0	0	
Reduced v/c Ratio	0.24	0.12		0.03	0.10		0.11	0.43		0.27	0.28	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

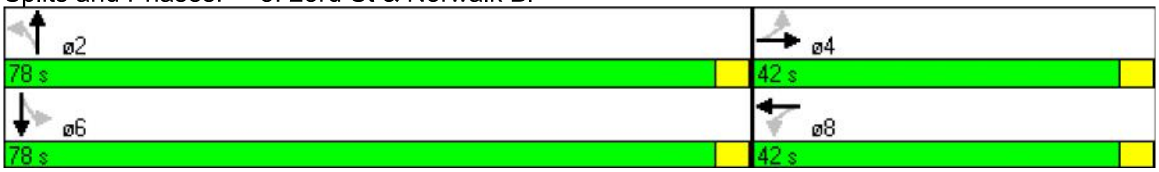
Maximum v/c Ratio: 0.67

Intersection Signal Delay: 6.0 | Intersection LOS: A

Intersection Capacity Utilization 55.6% | ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: 23rd St & Norwalk Bl



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	60		0	60		0
Storage Lanes	0		0	0		0	1		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.975			0.924			0.991			0.997	
Flt Protected		0.981			0.987		0.950			0.950		
Satd. Flow (prot)	0	1594	0	0	1520	0	1490	3138	0	1490	3157	0
Flt Permitted		0.874			0.911		0.335			0.201		
Satd. Flow (perm)	0	1420	0	0	1403	0	525	3138	0	315	3157	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			50			12			4	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		1904			1120			1552			1024	
Travel Time (s)		51.9			30.5			26.5			17.5	
Volume (vph)	15	16	7	45	29	94	37	966	58	109	657	13
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	17	18	8	51	33	107	42	1098	66	124	747	15
Lane Group Flow (vph)	0	43	0	0	191	0	42	1164	0	124	762	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phases	4	4		8	8		2	2		6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	32.0	32.0	0.0	32.0	32.0	0.0	88.0	88.0	0.0	88.0	88.0	0.0
Total Split (%)	26.7%	26.7%	0.0%	26.7%	26.7%	0.0%	73.3%	73.3%	0.0%	73.3%	73.3%	0.0%
Maximum Green (s)	28.0	28.0		28.0	28.0		84.0	84.0		84.0	84.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	

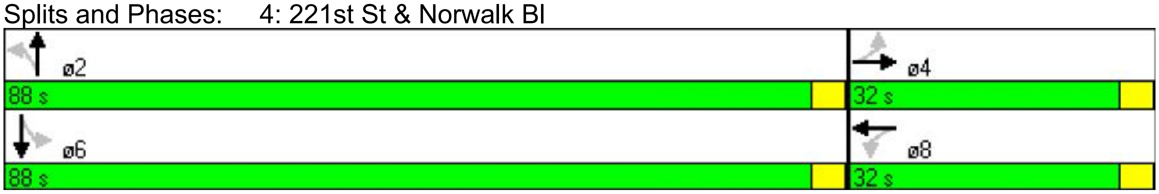
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		17.2			17.2		94.8	94.8		94.8	94.8	
Actuated g/C Ratio		0.14			0.14		0.79	0.79		0.79	0.79	
v/c Ratio		0.20			0.78		0.10	0.47		0.50	0.31	
Uniform Delay, d1		36.7			36.3		2.9	4.1		4.4	3.5	
Control Delay		36.7			40.5		4.2	5.0		11.3	2.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		36.7			40.5		4.2	5.0		11.3	2.8	
LOS		D			D		A	A		B	A	
Approach Delay		36.7			40.5			5.0			4.0	
Approach LOS		D			D			A			A	
90th %ile Green (s)	25.6	25.6		25.6	25.6		86.4	86.4		86.4	86.4	
90th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
70th %ile Green (s)	20.7	20.7		20.7	20.7		91.3	91.3		91.3	91.3	
70th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
50th %ile Green (s)	17.1	17.1		17.1	17.1		94.9	94.9		94.9	94.9	
50th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
30th %ile Green (s)	13.7	13.7		13.7	13.7		98.3	98.3		98.3	98.3	
30th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
10th %ile Green (s)	9.0	9.0		9.0	9.0		103.0	103.0		103.0	103.0	
10th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
Stops (vph)		27			118		9	264		47	111	
Fuel Used(gal)		1			3		1	14		1	6	
CO Emissions (g/hr)		70			241		36	1008		103	429	
NOx Emissions (g/hr)		14			47		7	196		20	83	
VOC Emissions (g/hr)		16			56		8	234		24	99	
Dilemma Vehicles (#)		0			0		0	59		0	21	
Queue Length 50th (ft)		24			108		7	142		16	43	
Queue Length 95th (ft)		53			172		14	117		m37	m68	
Internal Link Dist (ft)		1824			1040			1472			944	
Turn Bay Length (ft)							60			60		
Base Capacity (vph)		337			366		415	2481		249	2494	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	7	
Reduced v/c Ratio		0.13			0.52		0.10	0.47		0.50	0.31	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 8.1	Intersection LOS: A
Intersection Capacity Utilization 61.7%	ICU Level of Service B
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 4: 221st St & Norwalk Bl



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1700	1600	1600	1700	1600	1600	1700	1600	1600	1700	1600
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor												
Frt			0.850			0.850			0.850		0.972	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1490	3167	1333	1490	3167	1333	1490	3167	1333	1490	3078	0
Flt Permitted	0.302			0.210			0.328			0.280		
Satd. Flow (perm)	474	3167	1333	329	3167	1333	515	3167	1333	439	3078	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			190			107			94		29	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		1632			1664			1024			560	
Travel Time (s)		27.8			28.4			17.5			9.5	
Volume (vph)	219	936	186	189	717	105	244	681	152	150	482	113
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	223	955	190	193	732	107	249	695	155	153	492	115
Lane Group Flow (vph)	223	955	190	193	732	107	249	695	155	153	607	0
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phases	4	4	4	8	8	8	2	2	2	6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	66.0	66.0	66.0	66.0	66.0	66.0	54.0	54.0	54.0	54.0	54.0	0.0
Total Split (%)	55.0%	55.0%	55.0%	55.0%	55.0%	55.0%	45.0%	45.0%	45.0%	45.0%	45.0%	0.0%
Maximum Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
Actuated g/C Ratio	0.52	0.52	0.52	0.52	0.52	0.52	0.42	0.42	0.42	0.42	0.42	
v/c Ratio	0.91	0.58	0.24	1.14	0.45	0.14	1.16	0.53	0.25	0.84	0.47	
Uniform Delay, d1	26.5	20.1	0.0	29.0	18.2	0.0	35.0	26.1	8.4	31.3	24.0	
Control Delay	67.5	21.9	2.9	140.2	19.3	3.2	139.0	24.0	9.9	68.5	25.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	67.5	21.9	2.9	140.2	19.3	3.2	139.0	24.0	9.9	68.5	25.5	
LOS	E	C	A	F	B	A	F	C	A	E	C	
Approach Delay		26.7			40.3			48.1			34.1	
Approach LOS		C			D			D			C	
90th %ile Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Coord	Coord	Coord	Coord	Coord	
70th %ile Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
70th %ile Term Code	Max	Max	Max	Max	Max	Max	Coord	Coord	Coord	Coord	Coord	
50th %ile Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
50th %ile Term Code	Max	Max	Max	Max	Max	Max	Coord	Coord	Coord	Coord	Coord	
30th %ile Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
30th %ile Term Code	Max	Max	Max	Max	Max	Max	Coord	Coord	Coord	Coord	Coord	
10th %ile Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	50.0	50.0	50.0	50.0	50.0	
10th %ile Term Code	Hold	Hold	Hold	Max	Max	Max	Coord	Coord	Coord	Coord	Coord	
Stops (vph)	174	625	14	140	433	10	195	430	70	123	398	
Fuel Used(gal)	7	21	2	9	15	1	11	12	2	4	9	
CO Emissions (g/hr)	499	1445	161	622	1060	95	735	859	143	271	647	
NOx Emissions (g/hr)	97	281	31	121	206	18	143	167	28	53	126	
VOC Emissions (g/hr)	116	335	37	144	246	22	170	199	33	63	150	
Dilemma Vehicles (#)	0	39	0	0	30	0	0	17	0	0	25	
Queue Length 50th (ft)	152	260	0	~174	181	0	~234	203	37	104	167	
Queue Length 95th (ft)	#322	324	36	#324	231	28	#404	181	53	#236	220	
Internal Link Dist (ft)		1552			1584			944			480	
Turn Bay Length (ft)												
Base Capacity (vph)	245	1636	781	170	1636	740	215	1320	610	183	1299	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.91	0.58	0.24	1.14	0.45	0.14	1.16	0.53	0.25	0.84	0.47	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.16
Intersection Signal Delay: 36.8 Intersection LOS: D
Intersection Capacity Utilization 89.7% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Carson St & Norwalk Bl