FINAL

ENVIRONMENTAL IMPACT REPORT

SCH # 2023050241

NORMANDIE CROSSING SPECIFIC PLAN PROJECT

LEAD AGENCY

CITY OF GARDENA

Greg Tsujiuchi - Community Development Director

Amanda Acuna – Senior Planner

Community Development Department

1700 West 162nd Street

Gardena, California 90247

310.217.9593

APPLICANT

SAIKO INVESTMENT CORP.

NEXTGEN APARTMENTS

CONSULTANT

KIMLEY-HORN AND ASSOCIATES, INC.

Rita Garcia – Project Manager

1100 W Town and Country Road, Suite 700

Orange, California 92868

714.786.6116

MARCH 2024

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APPENDICES

1.0 INTRODUCTION

1.1. PUBLIC REVIEW DRAFT ENVIRONMENTAL IMPACT REPORT

In accordance with State California Environmental Quality Act (CEQA) Guidelines §§ 15120 through 15132, the City of Gardena prepared a Draft EIR (DEIR) for the Normandie Crossing Specific Plan Project (SCH No. 2023050241). The DEIR was made available for review and comment to the public, responsible and trustee agencies, interested groups, and organizations for a 45-day period that occurred between December 4, 2023 and January 20, 2024. The DEIR was also made available directly to State agencies through the State Clearinghouse, Office of Planning and Research.

1.2. FINAL ENVIRONMENTAL IMPACT REPORT

Before approving a project, CEQA requires that the Lead Agency prepare and certify a Final Environmental Impact Report (FEIR). The contents of a FEIR are specified in State CEQA Guidelines § 15132, as follows:

(a) The draft EIR or a revision of the draft.

(b) Comments and recommendations received on the draft EIR either verbatim or in summary.

(c) A list of persons, organizations, and public agencies commenting on the draft EIR.

(d) The responses of the Lead Agency to significant environmental points raised in the review and consultation process.

(e) Any other information added by the Lead Agency.

The FEIR allows the public and Lead Agency an opportunity to review DEIR revisions, the comments and responses, and other EIR components, such as the Mitigation Monitoring and Reporting Program (MMRP) before Project approval. The FEIR serves as the environmental document to support a decision on the proposed Project. This FEIR document consists of the following components:

- **Section 1.0: Introduction**,
- **Section 2.0: Comment Letters and Responses**,
- **Section 3.0: Errata to the DEIR**, and
- **Section 4.0: Mitigation Monitoring and Reporting Program**.

It is noted, none of the corrections/clarifications identified in this FEIR constitute "significant new information" pursuant to State CEQA Guidelines § 15088.5. The new information added merely clarifies/amplifies and makes insignificant modifications to the DEIR. The corrections/

clarifications do not involve changes in the Project or significant new information. They do not result in a new impact or substantial increase in the severity of an environmental impact identified in the DEIR. No new or substantially different mitigation measures than those identified in the DEIR are required. Moreover, the new information does not affect the DEIR's overall conclusions. Therefore, recirculation of the DEIR is not warranted.

Pursuant to State CEQA Guidelines § 15090, prior to approving a project, the Lead Agency must certify that:

1. *The Final EIR has been completed in compliance with CEQA;*
2. *The Final EIR was presented to the decision-making body of the Lead Agency, and that the decision-making body reviewed and considered the information in the Final EIR prior to approving the Project; and*
3. *The Final EIR reflects the Lead Agency's independent judgment and analysis.*

These certifications, or "Findings of Fact," are included in a separate *Findings* document. Both the FEIR and the Findings will be submitted to the Lead Agency for consideration of the proposed Project.

2.0 COMMENT LETTERS AND RESPONSES

2.1 LISTS OF PUBLIC AGENCIES, PERSONS, AND ORGANIZATIONS COMMENTING ON THE DEIR

In accordance with State CEQA Guidelines § 15132, the public agencies, and persons and organizations commenting on the DEIR are listed below in **Table 2-1: List of Commenting Public Agencies and Persons and Organizations**. As indicated in **Table 2-1**, comments on the DEIR were received from three public agencies, one organization, and three residents.

Table 2-1: List of Commenting Public Agencies And Persons And Organizations

No.	Date	Author	Author Title	Agency/Organization
Public Agencies				
A1	01/04/24	Ronald M. Durbin	Chief, Forestry Division, Prevention Services Bureau	County of Los Angeles Fire Department
A2	01/17/24	Frances Duong	Acting LDR/CEQA Branch Chief	State of California Department of Transportation District 7
A3	01/23/24	Curtis M. Welty, PG	Associate Oil and Gas Engineer	State of California Department of Conservation Geologic Energy Management Division
Persons and Organizations				
A4	01/19/24	Stephanie Papayanis	Attorney	Western States Regional Council of Carpenters
A5	02/25/24	Tish McCauley	Resident	N/A
A6	02/18/24	Keren Hwang	Resident	N/A
A7	02/01/24	Kevin Collier	Resident	N/A

2.2 COMMENT LETTERS AND RESPONSES

In compliance with State CEQA Guidelines § 15132, this Section includes all comments received on the DEIR, along with the City of Gardena's responses to significant environmental points raised by those comments. The comments are grouped according to author (i.e., Public Agencies and Persons and Organizations). Each individual comment letter listed in **Table 2-1** is reproduced on the following pages. Each letter and the individual comments in each letter have been consecutively numbered for ease of reference. Following each comment letter, a response is

provided for each comment raising substantive environmental issues. The responses are numbered and correlated to the bracketed and identified portions of each comment letter.

Responses may include text revisions to clarify or amplify information in the DEIR, as a result of environmental points issues in the comments, or as requested by the Lead Agency. A response to a comment requiring DEIR revisions presents the relevant DEIR text in a box, with deleted text indicated by ~~strike through~~ and added text indicated by double underline, as follows:

~~Deleted DEIR text~~ Added DEIR text

DEIR text revisions are also presented in **FEIR Section 3.0: Errata to the Draft EIR**.

Letter A1 – County of Los Angeles Fire Department
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Comment Letter 1

COUNTY OF LOS ANGELES FIRE DEPARTMENT

1320 NORTH EASTERN AVENUE
LOS ANGELES, CALIFORNIA 90063-3294
(323) 881-2401
www.fire.lacounty.gov

ANTHONY C. MARRONE
FIRE CHIEF
FORESTER & FIRE WARDEN

"Proud Protectors of Life, the Environment, and Property"

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FIRST DISTRICT

HOLLY J. MITCHELL
SECOND DISTRICT

LINDSEY P. HORVATH
THIRD DISTRICT

KATHRYN BARGER
FIFTH DISTRICT

January 4, 2024

Amanda Acuna
1700 West 162nd Street Unit: 101
Gardena, CA 90247

Dear Ms. Acuna:

THE NOTICE OF PREPARATION, "THE NORMANDIE CROSSING SPECIFIC PLAN PROJECT", PROPOSES THE CONSTRUCTION AND OPERATION OF A RESIDENTIAL DEVELOPMENT COMPRISED OF 403 DWELLING UNITS. THE PROJECT CONSTRUCTS TWO SUBAREAS THAT INCLUDE AN APARTMENT PORTION AND A TOWNHOME PORTION CONNECTED BY INTERNAL STREETS, CITY OF GARDENA, FFER2023006487

The Environmental Impact Report reviewed by the Planning Division, Land Development Unit, Forestry Division, and Health Hazardous Materials Division of the County of Los Angeles Fire Department.

The following are their comments:

PLANNING DIVISION:

Fire protection serving the area appears to be adequate for the existing development/land use; however, each additional development creates greater demands on existing resources. A1-1

For any questions regarding this response, please contact Kien Chin, at (323) 881-2404 or Kien.Chin@fire.lacounty.gov.

LAND DEVELOPMENT UNIT:

The proposed development was submitted for review and approval to the County of Los Angeles Fire Department Fire Prevention Division Land Development Unit for review and approval of Vesting Tentative Tract Map 83922 (FLDU2023003466). At this time, there are outstanding corrections that shall be addressed prior to clearance of the Vesting Tentative Map. A submittal for a REQUEST FOR MODIFICATIONS OR ALTERNATIVE MATERIALS AND A1-2

SERVING THE UNINCORPORATED AREAS OF LOS ANGELES COUNTY AND THE CITIES OF:

AGOURA HILLS, ARTESIA, AZUSA, BALDWIN PARK, BELL, BELL GARDENS, BELLFLOWER, BRADBURY, CALABASAS, CARSON, CERRITOS, CLAREMONT, COMMERCE, COVINA, CUDAHY, DIAMOND BAR, DUARTE, EL MONTE, GARDENA, GLENDORA, HAWAIIAN GARDENS, HAWTHORNE, HERMOSA BEACH, HIDDEN HILLS, HUNTINGTON PARK, INDUSTRY, INGLEWOOD, IRWINDALE, LA CANADA-FLINTRIDGE, LA HABRA, LA MIRADA, LA PUENTE, LAKEWOOD, LANCASTER, LAWNDALE, LOMITA, LYNWOOD, MALIBU, MAYWOOD, NORWALK, PALMDALE, PALOS VERDES ESTATES, PARAMOUNT, PICO RIVERA, POMONA, RANCHO PALOS VERDES, ROLLING HILLS, ROLLING HILLS ESTATES, ROSEMEAD, SAN DIMAS, SANTA CLARITA, SIGNAL HILL, SOUTH EL MONTE, SOUTH GATE, TEMPLE CITY, VERNON, WALNUT, WEST HOLLYWOOD, WESTLAKE VILLAGE, WHITTIER

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January 4, 2024
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METHODS REVIEW, was provided the the Land Development Unit Supervising FPEA on September 29, 2023. The proposed access widths as indicated in the Initial Study, Notice of Preparation and Normandie Crossing Specific Plan do not comply with the access requirements as noted in the County of Los Angeles Fire Code Chapter 5.

The development of this project must comply with all applicable code and ordinance requirements for construction, access, water mains, fire flows and fire hydrants.

When involved with subdivision in a city contracting fire protection with the County of Los Angeles Fire Department, Fire Department requirements for access, fire flows and hydrants are addressed during the subdivision tentative map stage.

Every building constructed shall be accessible to Fire Department apparatus by way of access roadways, with an all-weather surface of not less than 28 feet in width. The roadway shall be extended to within 150 feet of all portions of the exterior walls when measured by an unobstructed route around the exterior of the building. The roadway shall provide approved signs and/or stripping stating "NO PARKING - FIRE LANE" and shall be maintained in accordance with the County of Los Angeles Fire Code.
The proposed development shall comply with the following County of Los Angeles Fire Code Sections: 503.1, 503.1.1, 503.2.1, 503.2.1.2.2, 503.2.1.2.2.1, 503.2.1.2.2.2, 503.2.2.1, 503.2.4, 503.2.8, 503.2.9, 503.3, 503.4, 503.4.1, 503.6, 504.1, 503.3. Additional Fire Code requirements will apply at the County of Los Angeles Fire Department Fire Prevention Division Engineering Section Building Plan Check Unit review for building permit issuance

A1-2

Every building constructed shall provide an adequate water supply for fire protection purposes. The fire hydrant spacing shall be 300 feet with a fire flow requirement of 4,000 gpm at 20 psi residual pressure for 4 hours. An approved fire sprinkler system in the proposed building in compliance with applicable codes and regulations will qualify for a fire flow reduction as outlined Table B105.1 of the County of Los Angeles Fire Code.

Required fire flow for private on-site fire hydrants, 2,500 gpm @ 20 psi for 2 hours.

See Site Plan Mark Updated 08/04/2023 for specific information regarding the requirement for 1 new public fire hydrant and 4 new private on-site fire hydrant(s).

Specific fire and life safety requirements for the construction phase will be addressed at the Fire Department building plan check review. There may be additional fire and life safety requirements during this time.

The County of Los Angeles Fire Department, Land Development Unit appreciates the opportunity to comment on this project. Should any questions arise, please contact Nancy Rodeheffer at (323) 890-4243 or nancy.rodeheffer@fire.lacounty.gov.

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FORESTRY DIVISION – OTHER ENVIRONMENTAL CONCERNS:

The statutory responsibilities of the County of Los Angeles Fire Department, Forestry Division include erosion control, watershed management, rare and endangered species, brush clearance, vegetation management, fuel modification for Fire Hazard Severity Zones, archeological and cultural resources, and the County Oak Tree Ordinance. Potential impacts in these areas should be addressed

A1-3

For any questions regarding this response, please contact Forestry Assistant, Matthew Ermino at (818) 890-5719.

HEALTH HAZARDOUS MATERIALS DIVISION:

The Health Hazardous Materials Division (HHMD) of the Los Angeles County Fire Department has reviewed the draft EIR and associated environmental reports prepared by Partner Engineering and Science, Inc (Partner) and the associated Vapor Intrusion Risk Evaluation, dated August 11, 2023, prepared by Hillmann Consulting, LLC. In addition to the proposed mitigation measures included in the draft EIR, HHMD also recommends that a soil management plan (SMP) be implemented at the project site prior to site grading. The SMP should also address potential discoveries of underground storage tanks (USTs) and the associated role of the Los Angeles Regional Water Quality Control Board if contaminated soil and/or groundwater were to be associated with past UST releases. HHMD has no additional requirements or comments at this time.

A1-4

Please contact HHMD Hazardous Materials Specialist III, Jennifer Levenson at (323) 890-4114 or Jennifer.Levenson@fire.lacounty.gov if you have any questions.

Very truly yours,

RONALD M. DURBIN, CHIEF, FORESTRY DIVISION
PREVENTION SERVICES BUREAU

RMD:pg

RESPONSE TO COMMENT LETTER NO. A1

Ronald M. Durbin, Chief, Forestry Division, Prevention Services Bureau
County of Los Angeles Fire Department
January 4, 2024

A1-1 This comment from the Planning Division states that the fire protection for the area appears to be adequate for existing development. This comment also notes that each development (including this Project) would increase the demand on existing resources.

As noted in **DEIR Section 4.11: Public Services**, the Project would result in population growth that would incrementally increase the demand for fire protection in the area. However, as the Project site is currently served by fire protection services and is in a suburban setting where fire protection services and equipment/infrastructure are already in place, the Project does not propose and would not require new or physically altered fire protection facilities to maintain fire service objectives. Therefore, impacts concerning fire protection would be less than significant. No further discussion is necessary.

A1-2 This comment provides the Land Development Unit's comments on the DEIR. The comment states that the Project development must comply with all applicable code and ordinance requirements for construction, access, water mains, fire flows, and fire hydrants.

As stated in **DEIR Section 4.11**, the Project would be constructed with fire safety features in compliance with applicable provisions of the adopted Los Angeles County Fire Code, ordinances, and standard conditions regarding fire prevention and suppression measures related to water improvement plans, fire hydrants, fire access, and water availability (DEIR Page 4.11-6). The Los Angeles County Fire Department (LACFD) Fire Prevention Division has reviewed the Project, including the Site Plan, and provided requirements regarding firefighter and fire truck access, water system, fire flow, fire hydrant type/location, building address numbers, etc., which would enhance the Project's fire protection. The comment notes that the corrections and comments provided to the Applicant have not changed. The Applicant is required to continue to work with Fire Prevention Engineering to satisfy all requirements issued during the Fire Prevention Engineering Section's Building Plan Check Review. It is noted, LACFD also reviewed the Project's NOP and provided Conditions of Approval, which the Project would be required to comply with. The comment also provides contact information for further communication. This comment does not address the DEIR's adequacy or raise a significant environmental issue.

The Applicant had several meetings with LACFD to address its concerns and revised the Conceptual Site Plan. According to the Applicant, these plans have been reviewed and approved by the LACFD Fire Prevention Division. As such, no further response is necessary.

A1-3 This comment provides the Forestry Division's comments on the DEIR and details the Division's responsibilities within the LACFD. The comment requests that potential impacts within their responsibilities be addressed. Watershed management and erosion control are discussed in **DEIR Section 4.7: Hydrology and Water Quality** and archeological and cultural resources are discussed in **DEIR Section 4.2: Cultural Resources**. Impacts concerning these resources are addressed and, where a potential impact would occur, mitigation is incorporated. Therefore, with mitigation incorporated, impacts concerning issues would be less than significant. Regarding impacts to oak trees, fire hazards, and endangered species, as discussed in **DEIR Section 7.0: Effects Found Not to be Significant**, there are no trees, fire hazards, or endangered species on or adjacent to the Project site. No further discussion is necessary.

A1-4 This comment provides the Health Hazardous Materials Division's comments on the DEIR and recommends that a soil management plant (SMP) be implemented at the Project site prior to grading as an additional mitigation measure. As discussed in **DEIR Section 4.6: Hazards and Hazardous Materials**, MM HAZ-1 requires a Construction Management Plan to be prepared prior to issuance of demolition permits which would address potential undocumented contaminated soil. MM HAZ-1 sufficiently addresses the Health Hazardous Materials Division's request for a SMP. Thus, no modifications to MM HAZ-1 are required. No further discussion is necessary.

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Comment Letter 2

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY GAVIN NEWSOM, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 7
100 S. MAIN STREET, MS 16
LOS ANGELES, CA 90012
PHONE (213) 269-1124
FAX (213) 897-1337
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life

January 17, 2024

Amanda Acuna
City of Gardena
1700 West 162nd Street
Gardena, CA 90247

RE: Normandie Crossing Specific Plan Project
SCH # 2023050241
Vic. LA-405/PM 13.86, LA-110/PM 9.84, LA-91/PM 6.16
GTS # LA-2023-04396-DEIR

Dear Amanda Acuna:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above-referenced environmental document. The Project proposes to remove all existing onsite structures (approximately 115,424 square feet (SF) of industrial uses) and, in their place, construct up to 403 multi-family DU, including 328 apartment units in one building and 75 townhomes in nine buildings. The apartment building would provide approximately 39,098 SF of private/public open spaces, 399 vehicle parking spaces, and 173 bicycle parking spaces. The townhomes would provide approximately 11,395 SF of open space, and 160 vehicle parking spaces (150 resident spaces in two-car garages and 10 guest spaces). Additionally, the Project proposes two offsite improvements: 266 linear feet of sidewalk improvements along 169th Street and various railroad track and roadway improvements along South Normandie Avenue.

A2-1

Transit
The project site is situated within a quarter-mile of multiple bus stops and is accessible through transit service provided by the City of Gardena's Transit Service, Route 1X and Route 4 (GTrans).

A2-2

"Provide a safe and reliable transportation network that serves all people and respects the environment"

Letter A2 – State of California Department of Transportation District 7
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January 17, 2024
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Pedestrian and Bicycle Facilities
Existing sidewalks along the project frontage form part of a continuous pedestrian network, with a brief gap on the south side of 169th Street. Sidewalks are absent on Brighton Way, a public alley. Marked crosswalks and pedestrian facilities are available at signalized intersections along Normandie Avenue.

Currently, there are no separated or protected bicycle facilities along Normandie Avenue at the project site. The South Bay Bicycle Master Plan designates Normandie Avenue as a bike route (Class III) from 182nd Street to 170th Street, with adjacent streets also designated. A future Bicycle Friendly Street segment on 170th Street is proposed in the plan.

A2-3

VMT Screening
The City uses three screening criteria to determine if a VMT analysis would be required for this project. 1) The project's proposed 403 residential units are expected to generate approximately 1,715 average daily trips (ADT), which would be more than 110 ADT threshold. Also, the Project is not 100 percent affordable. The Project is not screened out from VMT analysis based on project type screening criterion. 2) The Project is in a TAZ estimated to generate 11.01 VMT per capita, which is 23.3 percent below the 2020 SCAG regional baseline VMT of 14.35. When compared to the 2040 SCAG regional baseline VMT of 12.97, the Project's VMT per capita is 15 percent below the 2040 SCAG regional baseline VMT. Therefore, the Project is in an area with low residential VMT, which means the Project can be presumed to have a less than significant VMT impact and can be screened out from further VMT analysis based on low VMT area screening. 3) The Project has more than 25 percent of its area farther from Gardena's High-Quality Transit Areas. Therefore, the Project is not screened out from VMT analysis under the Transit Proximity screening criterion.

A2-4

Based on the City's transportation guidelines and impact thresholds, the Project can be screened out from a full VMT analysis and is presumed to result in a less than significant transportation impact concerning VMT under the low VMT screening criteria. However, the DEIR does not show why the other criteria are not considered. For this sizable development of 403 multi-family units, we recommend a conservative approach by including a Vehicle Miles Traveled (VMT) analysis. This will help preempt any potential environmental challenges from third parties, ensuring a thorough evaluation of transportation impacts.

TDM
Because of the size of the project, we encourage the City to evaluate the potential of Transportation Demand Management (TDM) strategies and Intelligent Transportation System (ITS) applications in order to better manage the transportation network, as well as transit service and bicycle or pedestrian connectivity improvements. For additional TDM options, please refer to the Federal Highway Administration's *Integrating Demand*

A2-5

"Provide a safe and reliable transportation network that serves all people and respects the environment"

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Management into the Transportation Planning Process: A Desk Reference (Chapter 8). This reference is available online at:

http://ops.fhwa.dot.gov/publications/fhwahop12035/fhwahop12035.pdf

Post VMT Analysis
After this development is completed, a post-development VMT analysis to validate and justify Project VMT and future VMT threshold setting should be considered and prepared. Additional mitigation measures should be implemented when the post-development VMT analysis discloses any traffic significant impact. This analysis, which may include interviews with and surveys of project occupants, will provide new traffic data to help validate the City's VMT traffic model results.

A2-6

The collected data can include, among other things, where the trips are coming from, when the trips are taking place, what transportation mode is used, and why those transportation modes were selected. This survey data would be useful 1) to validate existing VMT threshold, 2) to assist in setting future VMT threshold, and 3) to identify suitable TDM to apply as minimization or mitigation measures for the future. These measures could be implemented in the event the post-development VMT analysis discloses any significant traffic impacts.

Traffic Safety Analysis
On Caltrans' June 7, 2023 letter (see attached), we asked for a safety analysis for Caltrans off-ramps. Traffic safety is a CEQA matter and should be considered by the City. We are not able to identify the safety analysis in Appendix 4.13-1: CEQA Transportation Study nor Appendix 4.13-2: Local Transportation Assessment.

A2-7

Others
As a reminder to address Caltrans concerns in preparing VMT and safety analysis, Caltrans has published the VMT-focused Transportation Impact Study Guide (TISG), dated May 20, 2020, and the Caltrans Interim Land Development and Intergovernmental Review (LD-IGR) Safety Review Practitioners Guidance, prepared on December 18, 2020. You can review those documents at the following link:

https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-05-20-approved-vmt-focused-tisg-a11y.pdf

A2-8

https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-12-22-updated-interim-ldigr-safety-review-guidance-a11y.pdf

Any transportation of heavy construction equipment and/or materials that require the use of oversized transport vehicles on State highways will need a Caltrans transportation permit. Any large-size truck trips be limited to off-peak commute periods.

Letter A2 – State of California Department of Transportation District 7
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If you have any questions, please feel free to contact Mr. Alan Lin the project coordinator at (213) 269-1124 and refer to GTS # LA-2023-04396-DEIR.

Sincerely,

Frances Duong

FRANCES DUONG
Acting LDR/CEQA Branch Chief

email: State Clearinghouse

"Provide a safe and reliable transportation network that serves all people and respects the environment"

RESPONSE TO COMMENT LETTER NO. A2
Frances Duong, Acting LDR/CEQA Branch Chief
State of California Department of Transportation, District 7
January 17, 2024

A2-1 This comment introduces the California Department of Transportation (Caltrans) response and summarizes the Project. This comment does not address DEIR's adequacy or raise a significant environmental issue. As such, no further response is necessary.

A2-2 This comment provides the Project's environmental setting within the context of transit services. This comment does not address the DEIR's adequacy or raise a significant environmental issue. As such, no further response is necessary.

A2-3 This comment provides the Project's environmental setting within the context of pedestrian and bicycle facilities. This comment does not address the DEIR's adequacy or raise a significant environmental issue. As such, no further response is necessary.

A2-4 This comment summarizes vehicle miles travelled (VMT) screening criteria under Senate Bill (SB) 743 and notes that the Project can be screened out from a full VMT analysis based on the City's transportation guidelines and impact thresholds. The commenter further notes the DEIR does not show why other criteria are not considered (specifically, Criteria 1 and 3). Therefore, the comment recommends a VMT analysis be performed to "preempt any potential environmental challenges from third parties, ensuring a thorough evaluation of transportation impacts."

City VMT guidelines do not require a project to meet multiple criteria to screen out from a VMT analysis. The Project meets a criterion in the City guidelines and therefore would have a less than significant impact concerning VMT. However, **DEIR Appendix 4.13-1: CEQA Transportation Study**, specifically states that Criterion 1 does not apply because the Project would generate more than 110 daily trips based on the 11th Edition ITE Trip Generation Manual. Additionally, **DEIR Appendix 4.13-1** specifies that Criterion 3 does not apply because the Project is not located in proximity to high quality transit. Therefore, additional analysis concerning VMT is not required or warranted. No further response is necessary.

A2-5 This comment encourages the City to evaluate transportation demand management (TDM) strategies and intelligent transportation system (ITS) applications to better manage its transportation network. The Project implements TDM strategies and ITS applications via features such as unbundled parking, additional bicycle parking, and a

one-month free transit pass to help renters become acquainted with public transit and pre-leasing for area employees. No further response is necessary.

A2-6 This comment recommends a mitigation measure concerning VMT which would require a VMT analysis to be done after development is completed to help validate the City's VMT traffic model results. CEQA's purpose is to inform government decisionmakers and the public of the potential environmental effects and to prevent significant, avoidable environmental damage. CEQA does not require a project to "look back" or "prove itself" after approval. Additionally, the Project would result in a less than significant impact concerning VMT, therefore, no mitigation is required; see **DEIR Impact 4.13-2**. Therefore, no mitigation measures are required under CEQA. No further response is necessary.

A2-7 The comment expresses concern concerning the DEIR's adequacy in addressing a previous comment requesting a safety analysis for highway off-ramps near the Project as neither transportation appendices (i.e., **DEIR Appendix 4.13-1** or **DEIR Appendix 4.13-2: Local Transportation Study**) appear to address their previous comment. The comment reminds the Applicant that traffic safety is a CEQA matter and therefore should be considered in the analysis.

Additional discussion has been added to the Local Transportation Assessment (**DEIR Appendix 4.13-2**); see below. The Project would not result in safety impacts to Caltrans facilities due to the small number of trips to these facilities and distance to these facilities.

DEIR Appendix 4.13-2: Local Transportation Assessment

DEIR Page 9

3.3.1 Freeway Ramp & Intersection Queueing at State Facilities

As detailed below in section 3.7, based on the Project's estimates, trip generation and distribution, few trips are expected at the I-405 off-ramps to Normandie/190th or the I-110 off-ramps to Redondo Beach Boulevard (<25 peak hour trips at each location). Therefore, the Project is not expected to add two or more car lengths to these off-ramp queues during peak hours, exacerbate potentially unsafe ramp conditions at these locations (if such conditions exist or are projected to occur in the opening year of the Project), and analysis is not needed. At the intersection of SR-91 and Vermont Avenue, Project traffic is expected to primarily be eastbound and westbound through movements since primary Project access is from Normandie Avenue, where most turning movements would

occur. As such, the Project is not expected to add substantial traffic to any left or right-turning movements at the intersection of SR-91 and Vermont Avenue, and the Project is not expected to materially affect the utilization of turn pocket storage that would lead to an impedance of through traffic. Therefore, no further analysis is needed related to queueing at these locations.

3.3.2 Pedestrian & Bicycle Volumes at State Facilities

As detailed below in section 3.7, 5% of the Project's net new trips are expected to be walking or biking in nature, which may also include a subsequent trip on transit. This amounts to less than 10 trips during either peak hour in total. Most of these non-transit biking and walking trips are expected to be local in nature, accessing nearby schools and businesses within 0.5 miles of the Project Site. Substantial bicycle and pedestrian trips generated by the Project are not expected to occur at the SR-91 and Vermont Avenue, I-405 off-ramps at Normandie/190th, or I-110 off-ramps at Redondo Beach Boulevard intersections given how far away they are from the Project Site. SR-91 and Vermont Avenue is located 0.8 miles from the Project Site, while the other two intersections are located over one mile from the Project Site. Because these locations are outside of the Project Study Area, Multi-Modal Conflict Analyses and/or Complete Street Access considerations should not be necessary.

A2-8 This comment provides resources for guidance on performing VMT safety analysis and notes that use of oversized transport vehicles on State highways would require a Caltrans permit. This comment does not address the adequacy or raise a significant environmental issue. As such, no further response is necessary.

Letter A3 – State of California Department of Conservation Geologic Energy Management Division

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Comment Letter 3

California
Department of Conservation
Geologic Energy Management Division

Gavin Newsom, Governor
David Shabazian, Director

January 23, 2024

VIA EMAIL

Amanda Acuna, Senior Planner
City of Gardena
1700 West 162nd Street
Gardena, CA 90247
Email: AAcuna@cityofgardena.org

Dear Ms. Acuna:

NORMANDIE CROSSING SPECIFIC PLAN PROJECT
DRAFT EIR
CITY OF GARDENA
SCH: NO. 2023050241

The Department of Conservation's Geologic Energy Management Division (Division) has reviewed the above-referenced project for impacts with Division jurisdictional authority. The Division supervises the drilling, maintenance, and plugging and abandonment of oil, gas, and geothermal wells in California. The Division offers the following comments for your consideration. A3-1

The project area is in Los Angeles County and lies outside any administrative oil field. On Page 4.6-9 of the Draft EIR, the author states, "*According to California Division of Oil, Gas and Geothermal Resources (CalGEM), no oil or gas wells are located on or immediately adjacent to the site. The closest well was identified to be located approximately 480 feet south of the site and is reported as "abandoned."* In fact, Division mapping shows an abandoned "wildcat" well, the "Gardena E.H." 1 well shown on our "Well Finder" online app as along Brighton Way between 169th and 170th. Upon our review of the 1967 well abandonment documents for this "dry hole," it appears that this well was more precisely located, "From the intersection of 170th Street and Brighton Way, 121' north and 55' east." This would place this well in the parking area behind the southernmost building currently shown on the project property. Division information can be found at: www.conservation.ca.gov. Individual well records are also available on the Division's web site, or by emailing CalGEMSouthern@conservation.ca.gov. A3-2

The scope and content of information that is germane to the Division's responsibility are contained in Section 3000 et seq. of the Public Resources Code, and administrative

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January 23, 2024
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regulations under Title 14, Division 2, Chapters 2, 3 and 4 of the California Code of Regulations. A3-2

If any wells, including any plugged, abandoned, or unrecorded wells, are damaged or uncovered during excavation, grading or other project operations, remedial plugging operations may be required. If such damage or discovery occurs, the Division's district office must be contacted to obtain information on the requirements and approval to perform remedial operations. A3-3

The possibility for future problems from oil and gas wells that have been plugged and abandoned, or reabandoned, to the Division's current specifications are remote. However, the Division recommends that a diligent effort be made to avoid building over any plugged and abandoned well.

Questions regarding the Division's Construction Site Well Review Program can be addressed to the local Division's office in Long Beach by emailing CalGEMSouthern@conservation.ca.gov or by calling (562) 637-4400.

Sincerely,

Curtis M. Welty, PG
Associate Oil and Gas Engineer

cc: Governor's Office of Planning and Research, State Clearinghouse Unit
Email: state.clearinghouse@opr.ca.gov

Office of Legislative and Regulatory Affairs
Email: OLRA@conservation.ca.gov

Jan Perez, CalGEM CEQA Unit
Email: Jan.Perez@conservation.ca.gov

Environmental CEQA File

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RESPONSE TO COMMENT LETTER NO. A3
Curtis M. Welty PG, Associate Oil and Gas Engineer
State of California Department of Conservation Geologic Energy Management Division
January 23, 2024

A3-1 This comment introduces the California Department of Conservation – Geologic Energy Management Division (CalGEM) and summarizes the department's jurisdictional authority. This comment does not address the DEIR's adequacy or raise a significant environmental issue. As such, no further response is necessary.

A3-2 This comment provides a revision to the DEIR's existing setting concerning nearby existing wells and notes the adjacent plugged well (an abandoned "wildcat" well identified as "Gardena E.H.") mapped outside the Project is within the Project site (approximately 121 feet north, 55 feet east). This comment is noted, and a minor revision to the existing setting and impact analysis in **DEIR Section 4.6: Hazards and Hazardous Materials** is included as shown below.

DEIR Section 4.6: Hazards and Hazardous Materials

DEIR Page 4.6-9

According to California Division of Oil, Gas and Geothermal Resources (CalGEM), ~~no oil or gas wells are located on~~ one abandoned "dry hole" "wildcat" well, identified as "Gardena E.H," exists 121 feet north and 55 feet east from the intersection of 170th Street and Brighton Way thereby placing the well within the parking area east of the southernmost building. There are no oil or gas wells located ~~or~~ immediately adjacent to the site. ~~The closest well was identified to be located approximately 480 feet south of the site and is reported as "abandoned".~~

DEIR Page 4.6-21

As previously addressed, the Phase I ESAs identified various onsite RECs associated with past uses of the Project site. As discussed in **Section 4.6.1: Existing Setting**, there is an existing abandoned well within the Project site where townhomes are proposed. This well is already abandoned and would be capped during Project construction in coordination with CALGEM.

A3-3 This comment reiterates the requirement to contact the Division's district office to obtain information on the requirements and approval of remedial operations if any well is damaged or uncovered during Project operations. Further, the comment recommends that "a diligent effort be made to avoid building over any plugged and

abandoned well." This comment does not address the DEIR's adequacy or raise a significant environmental issue. As such, no further response is necessary.

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Comment Letter 4

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Law Firm

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Pasadena, California 91101

VIA E-MAIL

January 19, 2024

Amanda Acuna, Senior Planner
City of Gardena
1700 West 162nd Street
Gardena, CA 90247
Em: aacuna@cityofgardena.org

RE: City of Gardena, Normandie Crossing Specific Plan Project

Dear Amanda Acuna,

On behalf of the Western States Regional Council of Carpenters ("**Western Carpenters**" or "**WSRCC**"), my Office is submitting these comments for the City of Gardena's ("**City**") Draft Environmental Impact Report ("**DEIR**" or "**Draft EIR**") for the Normandie Crossing Specific Plan ("**SP**") Project ("Project"), SCH No. 2023050241.

According to the DEIR,

> The Project proposes to establish a maximum allowable development within the approximately 5.25-acre [Normandie Crossing Specific Plan ("NCSP")] area of up to 403 DU. Because the City does not have any zone which would accommodate the proposed development, the Applicant is proposing the NCSP, which would establish the site-specific zoning regulations and development standards for this area. The NCSP includes the statutorily required elements, including a land use plan, a circulation plan, a description of existing and proposed utilities and infrastructure, design guidelines, development standards, and administrative provisions. In addition to requiring a Specific Plan, the Project requires various other approvals, including a Development Agreement

(DEIR, p. 2-11.)

The Western Carpenters is a labor union representing almost 90,000 union carpenters in 12 states, including California, and has a strong interest in well-ordered land use planning and in addressing the environmental impacts of development projects.

A4-1

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Individual members of the Western Carpenters live, work, and recreate in the City and surrounding communities and would be directly affected by the SP's environmental impacts. A4-1

The Western Carpenters expressly reserves the right to supplement these comments at or prior to hearings on the SP, and at any later hearing and proceeding related to this SP. Gov. Code, § 65009, subd. (b); Pub. Res. Code, § 21177, subd. (a); see *Bakersfield Citizens for Local Control v. Bakersfield* (2004) 124 Cal.App.4th 1184, 1199-1203; see also *Galante Vineyards v. Monterey Water Dist.* (1997) 60 Cal.App.4th 1109, 1121. A4-2

The Western Carpenters incorporates by reference all comments raising issues regarding the Environmental Impact Report (EIR) submitted prior to certification of the EIR for the SP. See *Citizens for Clean Energy v City of Woodland* (2014) 225 Cal.App.4th 173, 191 (finding that any party who has objected to the project's environmental documentation may assert any issue timely raised by other parties).

Moreover, the Western Carpenters requests that the City provide notice for all notices referring or related to the SP issued under the California Environmental Quality Act (**CEQA**) (Pub. Res. Code, § 21000 *et seq.*), and the California Planning and Zoning Law ("**Planning and Zoning Law**") (Gov. Code, §§ 65000–65010). California Public Resources Code Sections 21092.2, and 21167(f) and California Government Code Section 65092 require agencies to mail such notices to any person who has filed a written request for them with the clerk of the agency's governing body. A4-3

I. THE CITY SHOULD INCORPORATE LANGUAGE THAT REQUIRE THE USE OF A LOCAL WORKFORCE TO BENEFIT THE COMMUNITY'S ECONOMIC DEVELOPMENT AND ENVIRONMENT

The City should incorporate language into the proposed SP requiring residential, commercial and mixed-use developments within the SP area to be built using local workers who have graduated from a Joint Labor-Management Apprenticeship Program approved by the State of California, have at least as many hours of on-the-job experience in the applicable craft which would be required to graduate from such a state-approved apprenticeship training program, or who are registered apprentices in a state-approved apprenticeship training program. A4-4

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Community benefits such as local hire can also be helpful to reduce environmental impacts and improve the positive economic impact of the SP. Local hire provisions requiring that a certain percentage of workers reside within 10 miles or less of projects within the SP area can reduce the length of vendor trips, reduce greenhouse gas emissions, and provide localized economic benefits. As environmental consultants Matt Hagemann and Paul E. Rosenfeld note:

> [A]ny local hire requirement that results in a decreased worker trip length from the default value has the potential to result in a reduction of construction-related GHG emissions, though the significance of the reduction would vary based on the location and urbanization level of the project site.

A4-5

March 8, 2021 SWAPE Letter to Mitchell M. Tsai re Local Hire Requirements and Considerations for Greenhouse Gas Modeling.

Workforce requirements promote the development of skilled trades that yield sustainable economic development. As the California Workforce Development Board and the University of California, Berkeley Center for Labor Research and Education concluded:

> [L]abor should be considered an investment rather than a cost and investments in growing, diversifying, and upskilling California's workforce can positively affect returns on climate mitigation efforts. In other words, well-trained workers are key to delivering emissions reductions and moving California closer to its climate targets.[1]

A4-6

Furthermore, workforce policies have significant environmental benefits given that they improve an area's jobs-housing balance, decreasing the amount and length of job commutes and the associated greenhouse gas (GHG) emissions. In fact, on May 7, 2021, the South Coast Air Quality Management District found that that the "[u]se of a local state-certified apprenticeship program" can result in air pollutant reductions.[2]

A4-7

[1] California Workforce Development Board (2020) Putting California on the High Road: A Jobs and Climate Action Plan for 2030 at p. ii, *available at* https://laborcenter.berkeley.edu/wp-content/uploads/2020/09/Putting-California-on-the-High-Road.pdf.

[2] South Coast Air Quality Management District (May 7, 2021) Certify Final Environmental Assessment and Adopt Proposed Rule 2305 – Warehouse Indirect Source Rule – Warehouse Actions and Investments to Reduce Emissions Program, and Proposed Rule 316 – Fees for Rule 2305, Submit Rule 2305 for Inclusion Into the SIP, and Approve

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Locating jobs closer to residential areas can have significant environmental benefits. As the California Planning Roundtable noted in 2008:

> People who live and work in the same jurisdiction would be more likely to take transit, walk, or bicycle to work than residents of less balanced communities and their vehicle trips would be shorter. Benefits would include potential reductions in both vehicle miles traveled and vehicle hours traveled.[3]

A4-7

Moreover, local hire mandates and skill-training are critical facets of a strategy to reduce vehicle miles traveled (VMT). As planning experts Robert Cervero and Michael Duncan have noted, simply placing jobs near housing stock is insufficient to achieve VMT reductions given that the skill requirements of available local jobs must match those held by local residents.[4] Some municipalities have even tied local hire and other workforce policies to local development permits to address transportation issues. Cervero and Duncan note that:

> In nearly built-out Berkeley, CA, the approach to balancing jobs and housing is to create local jobs rather than to develop new housing. The city's First Source program encourages businesses to hire local residents, especially for entry- and intermediate-level jobs, and sponsors vocational training to ensure residents are employment-ready. While the program is voluntary, some 300 businesses have used it to date, placing more than 3,000 city residents in local jobs since it was launched in 1986. When needed, these carrots are matched by sticks, since the city is not shy about negotiating corporate participation in First Source as a condition of approval for development permits.

A4-8

Recently, the State of California verified its commitment towards workforce development through the Affordable Housing and High Road Jobs Act of 2022,

A4-9

Supporting Budget Actions, *available at* http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2021/2021-May7-027.pdf?sfvrsn=10.

[3] California Planning Roundtable (2008) Deconstructing Jobs-Housing Balance at p. 6, *available at* https://cproundtable.org/static/media/uploads/publications/cpr-jobs-housing.pdf

[4] Cervero, Robert and Duncan, Michael (2006) Which Reduces Vehicle Travel More: Jobs-Housing Balance or Retail-Housing Mixing? Journal of the American Planning Association 72 (4), 475-490, 482, *available at* http://reconnectingamerica.org/assets/Uploads/UTCT-825.pdf.

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otherwise known as Assembly Bill No. 2011 ("**AB2011**"). AB2011 amended the Planning and Zoning Law to allow ministerial, by-right approval for projects being built alongside commercial corridors that meet affordability and labor requirements.

The City should consider utilizing local workforce policies and requirements to benefit the local area economically and to mitigate greenhouse gas, improve air quality, and reduce transportation impacts.

A4-9

II. THE CITY SHOULD INCORPORATE LANGUAGE IMPOSING TRAINING REQUIREMENTS FOR CONSTRUCTION ACTIVITIES TO PREVENT COMMUNITY SPREAD OF COVID-19 AND OTHER INFECTIOUS DISEASES INTO THE GP.

Construction work has been defined as a Lower to High-risk activity for COVID-19 spread by the Occupations Safety and Health Administration. Recently, several construction sites have been identified as sources of community spread of COVID-19.[5]

Western Carpenters recommend that the City adopt additional requirements to mitigate public health risks from various residential, commercial and mixed-use development construction activities. Western Carpenters requests that the City require safe on-site construction work practices as well as training and certification for any construction workers on residential, commercial and mixed-use developments within the SP area.

A4-10

In particular, based upon Western Carpenters' experience with safe construction site work practices, Western Carpenters recommends that the City require that while construction activities are being conducted within the SP area ("**Project Site**"):

Construction Site Design:

- The Project Site will be limited to two controlled entry points.
- Entry points will have temperature screening technicians taking temperature readings when the entry point is open.

[5] Santa Clara County Public Health (June 12, 2020) COVID-19 CASES AT CONSTRUCTION SITES HIGHLIGHT NEED FOR CONTINUED VIGILANCE IN SECTORS THAT HAVE REOPENED, *available at* https://www.sccgov.org/sites/covid19/Pages/press-release-06-12-2020-cases-at-construction-sites.aspx.

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- The Temperature Screening Site Plan shows details regarding access to the Project Site and Project Site logistics for conducting temperature screening.
- A 48-hour advance notice will be provided to all trades prior to the first day of temperature screening.
- The perimeter fence directly adjacent to the entry points will be clearly marked indicating the appropriate 6-foot social distancing position for when you approach the screening area. Please reference the Apex temperature screening site map for additional details.
- There will be clear signage posted at the project site directing you through temperature screening.
- Provide hand washing stations throughout the construction site.

Testing Procedures:

A4-10

- The temperature screening being used are non-contact devices.
- Temperature readings will not be recorded.
- Personnel will be screened upon entering the testing center and should only take 1-2 seconds per individual.
- Hard hats, head coverings, sweat, dirt, sunscreen or any other cosmetics must be removed on the forehead before temperature screening.
- Anyone who refuses to submit to a temperature screening or does not answer the health screening questions will be refused access to the Project Site.
- Screening will be performed at both entrances from 5:30 am to 7:30 am.; main gate [ZONE 1] and personnel gate [ZONE 2]
- After 7:30 am only the main gate entrance [ZONE 1] will continue to be used for temperature testing for anybody gaining entry to the project site such as returning personnel, deliveries, and visitors.

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- If the digital thermometer displays a temperature reading above 100.0 degrees Fahrenheit, a second reading will be taken to verify an accurate reading.
- If the second reading confirms an elevated temperature, DHS will instruct the individual that he/she will not be allowed to enter the Project Site. DHS will also instruct the individual to promptly notify his/her supervisor and his/her human resources (HR) representative and provide them with a copy of Annex A.

Planning

- Require the development of an Infectious Disease Preparedness and Response Plan that will include basic infection prevention measures (requiring the use of personal protection equipment), policies and procedures for prompt identification and isolation of sick individuals, social distancing (prohibiting gatherings of no more than 10 people including all-hands meetings and all-hands lunches) communication and training and workplace controls that meet standards that may be promulgated by the Center for Disease Control, Occupational Safety and Health Administration, Cal/OSHA, California Department of Public Health or applicable local public health agencies.[6]

A4-10

The United Brotherhood of Carpenters and Carpenters International Training Fund has developed COVID-19 Training and Certification to ensure that Carpenter union members and apprentices conduct safe work practices. The City should require that all construction workers undergo COVID-19 Training and Certification before being allowed to conduct construction activities at the Project Site.

Western Carpenters has also developed a rigorous Infection Control Risk Assessment ("**ICRA**") training program to ensure it delivers a workforce that understands how to identify and control infection risks by implementing protocols to protect themselves

[6] *See also* The Center for Construction Research and Training, North America's Building Trades Unions (April 27 2020) NABTU and CPWR COVIC-19 Standards for U.S Constructions Sites, *available at* https://www.cpwr.com/sites/default/files/NABTU_CPWR_Standards_COVID-19.pdf; Los Angeles County Department of Public Works (2020) Guidelines for Construction Sites During COVID-19 Pandemic, *available at* https://dpw.lacounty.gov/building-and-safety/docs/pw_guidelines-construction-sites.pdf.

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and all others during renovation and construction projects in healthcare environments.[7]

ICRA protocols are intended to contain pathogens, control airflow, and protect patients during the construction, maintenance and renovation of healthcare facilities. ICRA protocols prevent cross contamination, minimizing the risk of secondary infections in patients at hospital facilities.

A4-10

The City should incorporate language requiring the residential developments related to the SP be built using a workforce trained in ICRA protocols.

III. THE PROJECT WOULD BE APPROVED IN VIOLATION OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

A. Background Concerning the California Environmental Quality Act

The California Environmental Quality Act is a California statute designed to inform decision-makers and the public about the potential significant environmental effects of a project. 14 California Code of Regulations ("**CEQA Guidelines**"), § 15002, subd. (a)(1).[8] At its core, its purpose is to "inform the public and its responsible officials of the environmental consequences of their decisions *before* they are made." *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564.

1. Background Concerning Environmental Impact Reports

A4-11

CEQA directs public agencies to avoid or reduce environmental damage, when possible, by requiring alternatives or mitigation measures. CEQA Guidelines, § 15002, subds. (a)(2)-(3); see also *Berkeley Keep Jets Over the Bay Committee v. Board of Port Comes* (2001) 91 Cal.App.4th 1344, 1354; *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553; *Laurel Heights Improvement Assn.*, 47 Cal.3d at p. 400. The EIR serves to provide public agencies and the public in general with information about the effect that a proposed project is likely to have on the environment and to "identify ways that environmental damage can be avoided or significantly reduced." CEQA Guidelines, § 15002, subd. (a)(2). If the project has a significant effect on the

[7] For details concerning Western Carpenters' ICRA training program, *see* https://icrahealthcare.com/.

[8] The CEQA Guidelines, codified in Title 14 of the California Code of Regulations, section 15000 et seq., are regulatory guidelines promulgated by the state Natural Resources Agency for the implementation of CEQA. Cal. Pub. Res. Code, § 21083. The CEQA Guidelines are given "great weight in interpreting CEQA except when . . . clearly unauthorized or erroneous." *Center for Biological Diversity v. Dept. of Fish & Wildlife* (2015) 62 Cal.4th 204, 217.

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environment, the agency may approve the project only upon finding that it has "eliminated or substantially lessened all significant effects on the environment where feasible" and that any unavoidable significant effects on the environment are "acceptable due to overriding concerns" specified in Public Resources Code section 21081. See CEQA Guidelines, § 15092, subds. (b)(2)(A)-(B).

While the courts review an EIR using an 'abuse of discretion' standard, the reviewing court is not to *uncritically* rely on every study or analysis presented by a project proponent in support of its position. *Berkeley Jets*, 91 Cal.App.4th at p. 1355 (quoting *Laurel Heights Improvement Assn.*, 47 Cal.3d at pp. 391, 409 fn. 12) (internal quotations omitted). A clearly inadequate or unsupported study is entitled to no judicial deference. *Id.* Drawing this line and determining whether the EIR complies with CEQA's information disclosure requirements presents a question of law subject to independent review by the courts. *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 515; *Madera Oversight Coalition, Inc. v. County of Madera* (2011) 199 Cal.App.4th 48, 102, 131. As the court stated in *Berkeley Jets*, prejudicial abuse of discretion occurs if the failure to include relevant information precludes informed decision-making and informed public participation, thereby thwarting the statutory goals of the EIR process. 91 Cal.App.4th at p. 1355 (internal quotations omitted).

The preparation and circulation of an EIR is more than a set of technical hurdles for agencies and developers to overcome. *Communities for a Better Environment v. Richmond* (2010) 184 Cal.App.4th 70, 80 (quoting *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 449-450). The EIR's function is to ensure that government officials who decide to build or approve a project do so with a full understanding of the environmental consequences and, equally important, that the public is assured those consequences have been considered. *Id.* For the EIR to serve these goals it must present information so that the foreseeable impacts of pursuing the project can be understood and weighed, and the public must be given an adequate opportunity to comment on that presentation before the decision to go forward is made. *Id.*

A4-11

A strong presumption in favor of requiring preparation of an EIR is built into CEQA. This presumption is reflected in what is known as the "fair argument" standard under which an EIR must be prepared whenever substantial evidence in the record supports a fair argument that a project may have a significant effect on the environment. *Quail*

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Botanical Gardens Found., Inc. v. City of Encinitas (1994) 29 Cal.App.4th 1597, 1602; *Friends of "B" St.* v. *City of Hayward* (1980) 106 Cal.3d 988, 1002.

The fair argument test stems from the statutory mandate that an EIR be prepared for any project that "may have a significant effect on the environment." PRC, § 21151; see *No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.App.3d 68, 75; accord *Jensen v. City of Santa Rosa* (2018) 23 Cal.App.5th 877, 884. Under this test, if a proposed project is not exempt and may cause a significant effect on the environment, the lead agency must prepare an EIR. PRC, §§ 21100 (a), 21151; CEQA Guidelines, § 15064 (a)(1), (f)(1). An EIR may be dispensed with only if the lead agency finds no substantial evidence in the initial study or elsewhere in the record that the project may have a significant effect on the environment. *Parker Shattuck Neighbors v. Berkeley City Council* (2013) 222 Cal.App.4th 768, 785. In such a situation, the agency must adopt a negative declaration. PRC, § 21080, subd. (c)(1); CEQA Guidelines, §§ 15063 (b)(2), 15064(f)(3).

"Significant effect upon the environment" is defined as "a substantial or potentially substantial adverse change in the environment." PRC, § 21068; CEQA Guidelines, § 15382. A project may have a significant effect on the environment if there is a reasonable probability that it will result in a significant impact. *No Oil, Inc.*, 13 Cal.3d at p. 83 fn. 16; see *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 309. If any aspect of the project may result in a significant impact on the environment, an EIR must be prepared even if the overall effect of the project is beneficial. CEQA Guidelines, § 15063(b)(1); see *County Sanitation Dist. No. 2 v. County of Kern* (2005) 127 Cal.App.4th 1544, 1580.

A4-11

This standard sets a "low threshold" for preparation of an EIR. *Consolidated Irrigation Dist. v. City of Selma* (2012) 204 Cal.App.4th 187, 207; *Nelson v. County of Kern* (2010) 190 Cal.App.4th 252; *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 928; *Bowman v. City of Berkeley* (2004) 122 Cal.App.4th 572, 580; *Citizen Action to Serve All Students v. Thornley* (1990) 222 Cal.App.3d 748, 754; *Sundstrom*, 202 Cal.App.3d at p. 310. If substantial evidence in the record supports a fair argument that the project may have a significant environmental effect, the lead agency must prepare an EIR even if other substantial evidence before it indicates the project will have no significant effect. See *Jensen*, 23 Cal.App.5th at p. 886; *Clews Land & Livestock v. City of San Diego* (2017) 19 Cal.App.5th 161, 183; *Stanislaus Audubon Society, Inc. v. County of Stanislaus* (1995) 33 Cal.App.4th 144, 150; *Brentwood Assn. for No Drilling, Inc. v. City of*

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Los Angeles (1982) 134 Cal.App.3d 491; *Friends of "B" St.*, 106 Cal.App.3d 988; CEQA Guidelines, § 15064(f)(1). A4-11

B. The Project May Have a Significant Hazards Impact

The Project may have a significant hazards impact. The DEIR provides two Phase I Environmental Site Assessments ("**ESA**" or "**Phase I ESA**") prepared by Partner Engineering and Science, Inc., with a January 7, 2021 ESA included in Appendix 4.6-2 concerning the Project Site's *southern* portion (APN 6106-030-017) ("**South Phase I ESA**"), and a July 13, 2021 ESA included in Appendix 4.6-1 concerning the Project Site's *northern* portion (APNs 6106-030-011, 6106-030-015, and 6106-030-016) ("**North Phase I ESA**"). (DEIR, 4.6-1.) However, the Phase I ESAs are outdated and manifestly incomplete.

1. *Background on Phase I, II, and III Environmental Site Assessments*

The preparation of a Phase I ESA is "to research the current and historical uses of a property as part of a commercial real estate transaction" and "to assess if current or historical property uses have impacted the soil or groundwater beneath the property and could pose a threat to the environment and/or human health."[9] A4-12

As explained by experts in the field of ESA:

> The primary difference between Phase I and Phase II site assessment lies in the scopes of work of the assessment. A Phase I primarily assesses the likelihood that a site is contaminated through visual observations, historical use reviews and regulatory records, while a Phase II assesses whether contamination is in fact present. Here are the components of each.
>
> **Phase I Environmental Site Assessment**
>
> Review of records, to discover whether the site has been used for potentially hazardous purposes in the past.
>
> Visual inspection of the property's current condition, with comparison to site plans.

[9] Jenny Redlin, REPA, Partner Engineering and Science, Inc., *What is a Phase I Environmental Site Assessment* (Apr. 9, 2018), *available at* https://www.partneresi.com/resources/articles/what-is-a-phase-i-environmental-site-assessment/#:~:text=A%20Phase%20I%20Environmental%20Site%20Assessment%2C%20commonly%20referred%20to%20as,a%20commercial%20real%20estate%20transaction. (accessed on Jan. 18, 2024).

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Visual inspection of adjoining properties.

Interviews with current property owners, operators, occupants, and local government officials.

Goal: Assess likelihood that property has been contaminated.

Phase II Environmental Site Assessment

Soil and water sampling for signs of contamination.

Comparison of lab results with local, state, and federal regulatory guidelines.

May include inspection of interior spaces for mold, radon, or lead paint.

May include identification of wetlands, ecological resources, or endangered species that may prevent certain land uses.

Goal: Assess actual presence of environmental contaminants.

Phase III Site Assessment

A Phase III Site Assessment is called for only when contamination has been identified. A Phase III Assessment determines the extent of the contamination, both horizontally and vertically, and forms the basis for preparing a remediation plan, and estimation of the cost for remediation. Buyers and lenders use the Phase III Assessment as a negotiating tool with the sellers to ensure the property they purchase yields the benefit they expect.[10]

A4-12

Standards for performing a Phase I ESA have been established by the US Environmental Protection Agency ("**EPA**") and the American Society for Testing and Materials Standards ("**ASTM**").[11]

2. The Phase I ESAs are Inadequate and Outdated

As a preliminary matter, the Phase I ESAs were prepared in January and July of 2021, approximately three (3) years ago. In addition, given that the conditions of the Project Site and its surrounding area may have changed since 2021, the ESAs are now outdated.

A4-13

[10] Robert B. Greene, Phase I versus Phase II Environmental Site Assessment *available at* https://www.gleassociates.com/phase-i-versus-phase-ii-environmental-site-assessments/ (accessed on Jan. 18. 2024.)
[11] *See*, https://www.astm.org/e1527-21.html (last updated on Dec. 21, 2021.)

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Even further, and as detailed further below, the ESAs were conducted in 2021, which was prior to the EPA's subsequent adoption of the newer ASTM E1527-21 ("**ASTM E1527-21**"), thereby replacing the older and less stringent ASTM E1527-13 ("**ASTM E1527-13**"). Accordingly, the Phase I ESAs rely upon E1527-13 (DEIR Appendix 4.6-1, p. 4, Appendix 4.6-2, p. 3). However, it is critical that the Phase I ESAs implement the newer ASTM E1527-13 standard for identifying Recognized Environmental Conditions ("**REC**"), as discussed further below.

Therefore, the DEIR must be revised and recirculated to include new Phase I ESAs and, moreover, a new Phase II ESA, that adequately evaluate the Project's potential hazards impact and that apply the more recent and more stringent E1527-21 standard.

3. The Phase I ESA Improperly Relies on ASTM 1527-13 While the EPA Recently Adopted and Validated ASTM 1527-21

As noted above, the Phase I ESAs are incomplete and inaccurate for purposes of CEQA because they only use the obsolete ASTM E1527-13, while the nonprofit organization ASTM International, founded as the American Society for Testing and Materials, has long adopted its more stringent ASTM Standard Practice E1527-21, which is in fact more rigorous than its predecessor E1527-13. Because Phase I ESAs rely upon the E1527-13 methodology recommended by ASTM International to identify Recognized Environmental Conditions in connection with the Project Site, they fail to adequately disclose the potential RECs on the Project Site and, as related, the Project-specific potential hazards and hazardous impacts and adverse impacts on human beings.

A4-13

Specifically,

- "Under **ASTM E1527-13**, a REC is defined as the **presence** or **likely presence** of any **hazardous substances** or petroleum products in, on, or at a property: (1) due to **release** to the environment; (2) under **conditions indicative** of a release to the environment; or (3) under conditions that **pose** a **material threat** of a future release to the environment.
- Under **ASTM E1527-21**, a REC means (1) the **presence** of hazardous substances or petroleum due to a release to the environment; (2) the ***likely* presence** of hazardous substances or petroleum products due to a ***likely* release** to the environment; or

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> (3) the presence of hazardous substances or petroleum products under conditions that pose a material threat of a future release to the environment. Further, the new standard provides clarifying discussion notes and examples to assist the environmental professional in applying the definition. Together, the new definition and interpretations direct a consultant to rely on the environmental professional's experience regarding the ***likelihood*** of certain conditions resulting in releases, such as the long term operation of a dry cleaner, instead of discounting that professional experience based on the lack of current "indications of a release."[12] (ital. original, bold emphasis added.)

Accordingly, as shown above in the E1527-21 definition of a REC, the use of phrases, "likely presence" or "likely release" are more stringent than the REC definition in E1527-13, which leaves out the potential impact for purposes of CEQA. The newer E1527-21, on the other hand, encompasses those concerns. Since the Phase I ESAs do not implement E1527-21, they could fail to account for other potential RECs at the Project Site. A4-13

Here, for example, the North Phase I ESA directly admits the Project Site is currently occupied by three (3) buildings, Buildings A-C, which were constructed in 1963, 1978, and 1957, respectively (DEIR Appendix 4.6-1, p. ii.) and that, based on the historical and regulatory sources, the property was occupied by "various light-industrial tenants," which included "two machine shops, an auto body repair operation, an engine repair business (FM Engine), a cabinet maker, and several manufacturing entities, all operations that would have used or stored hazardous substances." (*Id.* at p. iii.) The North Phase I ESA further notes that because some of the manufacturing tenant listings predated 1980, there is no documentation regarding "historical hazardous substance use, storage, or disposal practices." (*Id.*) The North Phase I ESA even further notes that there were some paint booths historically identified in connection with prior tenants and usage of solvents. (Id.)

[12] Quarles, *EPA Approves ASTM E1527-21 Phase I ESA Standard for All Appropriate Inquiry* (Mar. 29, 2022), *available at* https://www.quarles.com/publications/epa-approves-astm-e1527-21-phase-i-esa-standard-for-all-appropriate-inquiry/ (accessed on Jan. 18, 2024.)

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Finally, the North Phase I ESA concludes that

> Partner understands the subject property is planned for residential redevelopment. Based on the plan to redevelop this site with a sensitive receptor (i.e. residential), the long-term duration of use/occupancy by businesses that used, stored and disposed of hazardous substances (60+ years), and lack of any subsurface data, the long-term light-industrial usage of the subject property is considered to be a REC.

(Appendix 4.6-1, *supra.*)

A4-13

Therefore, the North Phase I ESA identifies a REC at the Project Site and acknowledges that there will be residential use at the Project Site. Accordingly, it is imperative that the City adequately addresses this in the EIR and mitigates the significant hazards impacts. As such, the DEIR should be revised and recirculated to include updated Phase I ESAs using the more stringent ASTM E1527-21 standard to account for any other potential RECs at the Project Site that might not have been accounted for under the previous ASTM E1527-13 standard.

4. *The Project May Have Significant Hazards Impacts, as Well as Adverse Impacts on Human Beings Requiring Mandatory Findings of Significance*

Under CEQA Guidelines section 15065, subdivision (a)(1)(4), a lead agency "shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where […] (4) The environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly."

A4-14

The North Phase I ESA expressly confirms that, due to the age of the buildings situated on the Project Site, there is potential for the presence of asbestos-containing materials ("**ACM**") and/or lead-based paint ("**LBP**") (DEIR Appendix 4.6-1, p. iv.)

It is undisputed that both *lead* and *asbestos* are dangerous to people's health. While intact asbestos by itself may not be hazardous, damaged or disturbed asbestos may release asbestos fibers and become a health hazard.[13] Per Occupational Health and Safety Administration's ("**OSHA**") description:

[13] *See*, https://www.cpsc.gov/safety-education/safety-guides/home/asbestos-home; *see also*, medical conditions associated with asbestos: https://www.atsdr.cdc.gov/asbestos/health_effects_asbestos.html

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What are the hazards of asbestos?

Asbestos is well recognized as a health hazard and its use is now highly regulated by both OSHA and EPA. Asbestos fibers associated with these health risks are too small to be seen with the naked eye. Breathing asbestos fibers can cause a buildup of scar-like tissue in the lungs called asbestosis and result in loss of lung function that often progresses to disability and death. Asbestos also causes cancer of the lung and other diseases such as mesothelioma of the pleura which is a fatal malignant tumor of the membrane lining the cavity of the lung or stomach. Epidemiologic evidence has increasingly shown that all asbestos fiber types, including the most commonly used form of asbestos, chrysotile, causes mesothelioma in humans.

OSHA's Definition of "Asbestos" on its Official Website.[14]

Similarly, *lead* is dangerous to people and their families. Per OSHA's report:

Lead has been poisoning workers for thousands of years. Lead can damage the central nervous system, cardiovascular system, reproductive system, hematological system, and kidneys. When absorbed into the body in high enough doses, lead can be toxic.

In addition, workers' lead exposure can harm their children's development. Short-term (acute) overexposure–as short as days--can cause acute encephalopathy, a condition affecting the brain that develops quickly into seizures, coma, and death from cardiorespiratory arrest.

Short-term occupational exposures of this type are highly unusual but not impossible. Extended, long-term (chronic) overexposure can result in severe damage to the central nervous system, particularly the brain. It can also damage the blood-forming, urinary, and reproductive systems. There is no sharp dividing line between rapidly developing acute effects of lead and chronic effects that take longer to develop.[15]

A4-14

[14] *See,* United States Department of Labor, *Asbestos, available at* https://www.osha.gov/asbestos (accessed on Jan. 18, 2024.)
[15] See, OSHA Report, *Lead in Construction* (2004) p. 3, *available at* https://www.osha.gov/sites/default/files/publications/osha3142.pdf (accessed on Jan. 18, 2024.)

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OSHA also documents the adverse effects of lead on people's reproductive health:

> REPRODUCTIVE RISKS
>
> Lead is toxic to both male and female reproductive systems. Lead can alter the structure of sperm cells and there is evidence of miscarriage and stillbirth in women exposed to lead or whose partners have been exposed. Children born to parents who were exposed to excess lead levels are more likely to have birth defects, mental retardation, or behavioral disorders or to die during the first year of childhood.
>
> Workers who desire medical advice about reproductive issues related to lead should contact qualified medical personnel to arrange for a job evaluation and medical followup--particularly if they are pregnant or actively seeking to have a child. Employers whose employees may be exposed to lead and who have been contacted by employees with concerns about reproductive issues must make medical examinations and consultations available.[16]

A4-14

Therefore, the Project may also cause a significant hazard impact due to the demolition hazards, including impacts to human beings and sensitive receptors, air, and water quality. Thus, under CEQA Guidelines section 15065(a)(1)(4), the City shall make mandatory findings of significance and order that the EIR be revised and recirculated to thoroughly assess the potential hazards impact of the Project and its required demolition activities and potential handling of asbestos and lead-based paint and mitigate those impacts to a level of insignificance.

C. The Project May Have a Significant Noise Impact

There is substantial evidence the Project will have a significant noise impact. The DEIR directly admits that "[t]he Project's construction-related noise impacts would be significant and unavoidable, despite implementation of mitigation concerning equipment and a temporary noise barrier . . ." (DEIR, p. 6-19.) The DEIR further proposes various noise mitigation measures, including implementation of a temporary and impermeable sound barrier of ten feet (10) high with a minimum 12dBA noise reduction and minimum Sound Transmission Class rating of STC-25, along with use of large brass construction equipment a minimum of forty-five (45) feet away from the

A4-15

[16] *Id.* at p. 4.

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off-site residence adjacent to the Project Site (i.e. MM NOI-1 and MM NOI-2), however, the DEIR still concludes that even with implementation of the noise mitigation measures, there will be a significant and unavoidable impact. (*Id.* at ES-16.) However, given that the DEIR identifies numerous noise-sensitive receptors near the Project Site, including the residential uses to the north, south, and west, it is imperative that the City require further mitigation be implemented to reduce the impacts to a level of insignificance. A4-15

Accordingly, the City should require that the DEIR be revised and recirculated to adequately mitigate the Project's significant noise impacts.

IV. **CONCLUSION**

Based on the foregoing, the City should require that the DEIR be revised and recirculated pursuant to CEQA to address the comments and issues identified in this letter. Similarly, the City should require additional environmental studies be performed to comply with CEQA and other state laws. A4-16

Sincerely,

Stephanie Papayanis

Stephanie Papayanis
Attorneys for Western States
Regional Council of Carpenters

Attached:

March 8, 2021 SWAPE Letter to Mitchell M. Tsai re Local Hire Requirements and Considerations for Greenhouse Gas Modeling (Exhibit A); A4-17

Air Quality and GHG Expert Paul Rosenfeld CV (Exhibit B); and

Air Quality and GHG Expert Matt Hagemann CV (Exhibit C).

RESPONSE TO COMMENT LETTER NO. A4
Stephanie Papayanis, Attorney
Western States Regional Council of Carpenters
January 19, 2024

A4-1 This comment is introductory in nature and states that the Law Office of Mitchell M. Tsai has submitted comments on behalf of the Western States Regional Council of Carpenters. No further response is necessary.

A4-2 The comment states that the commenter reserves the right to supplement the comments and incorporates by reference all comments regarding the EIR. The comment is noted. No further response is necessary.

A4-3 The commenter requests receipt of further notices referring to or related to the Project. The City acknowledges the commenter's request and will include the commenter on the mailing list for future Project-related CEQA notices. No further response is necessary.

A4-4 The commenter requests that the City require the Project to be built using local workers who have graduated from a specified apprenticeship program.

The Project includes approval of a Development Agreement which includes a requirement that the Applicant implement a local hiring policy as specified in Development Agreement Exhibit D as a public benefit. The commenter does not explain or provide any evidence, let alone substantial evidence, as to how using labor that has graduated from a state-approved apprenticeship training program, or who are registered apprentices in such a program, creates any environmental benefits. The commenter's request does not address the DEIR's adequacy or identify an environmental issue. As such, no further response is necessary.

A4-5 The commenter suggests that using local workers (i.e., residing within 10.0 miles of the Project site) would reduce VMT, reduce greenhouse gas emissions (GHG), improve jobs/housing balance, and the Project's economic performance. See Response A4-4, noting that the Development Agreement already requires utilizing a local workforce where possible as a public benefit. Additionally, see Responses A4-6 thru A4-8. The commenter also suggests that local hire provisions can improve the positive economic impact of the Specific Plan. Economics are not a CEQA issue. Nonetheless, it is noted that Development Agreement Exhibit D also includes a "buy local" provision.

A4-6
Thru
A4-8

The commenter references an attachment to the comment letter from Soil Water Air Protection Enterprise (SWAPE) ("SWAPE Letter"; March 8, 2021) and refers the reader to the SWAPE Letter for commentary and analysis related to local hire requirements related to GHG modeling. This commenter alleges that workforce requirements promote the development of skilled trades that yield sustainable economic development. The comment states that labor should be considered an investment and well-trained workers are key to delivering emissions reductions and moving California closer to its climate targets.

This commenter also alleges that workforce policies have significant environmental benefits and that they improve an area's jobs-housing balance, and decrease the amount and length of job commutes and the associated greenhouse gas emissions. The commenter refers to a 2021 South Coast Air Quality Management District statement that the use of a local state-certified apprenticeship program can result in air pollutant reductions. This comment alleges that local hire mandates and skill training are critical facets of a strategy to reduce VMT. The commenter also references a 2006 article from the Journal of the American Planning Association to note the approach to balancing jobs and housing is to create local jobs rather than to develop new housing.

See Response A4-4, noting that the Development Agreement already requires utilizing a local workforce where possible as a public benefit. Additionally, as mentioned above, sustainable economic development is not an environmental issue, as such no further response is necessary.

The commenter included a letter from SWAPE dated March 8, 2021 (which predates the NOP's release), which discusses GHG emissions associated with trip lengths for construction workers traveling to a job site. The SWAPE letter provided calculations for GHG emissions reductions resulting from local hire provisions being applied to the referenced project's construction. The SWAPE letter concludes that if a local hire provision with a 10.0-mile radius were implemented, the GHG emissions associated with the Project's construction would decrease. The SWAPE letter states that it ran a model "reducing all worker trip lengths to 10 miles…." Therefore, the SWAPE letter assumes that a local hire program would produce 100 percent local residents as a project's construction workforce while being located within 10.0 miles of a project site. It is noted that the SWAPE letter and the calculations provided used data related to a different project in a separate jurisdiction, the Village South Specific Plan in the City of Claremont, respectively. The calculations also use prior versions of CalEEMod

and EMFAC. Therefore, the calculations do not pertain to the Project and are not based on correct modeling.

The commenter also relies on a 2008 California Roundtable discussion noting that people who live and work in the same jurisdiction could include potential reductions in VMT and vehicle hours traveled.

The DEIR concluded that the Project would result in less than significant impacts concerning GHG emissions and VMT and therefore no further mitigation would be required; see **DEIR Section 4.5: Greenhouse Gas Emissions** and **DEIR Section 4.13: Transportation**, respectively. As impacts related to GHG and VMT are less than significant, there is no obligation pursuant to CEQA to further reduce these potential impacts. Additionally, the commenter does not provide any substantial evidence (only conclusory opinions) to dispute the DEIR's analysis to demonstrate that local hire mandates and skill-training policies would specifically reduce VMT. These comments do not relate to the DEIR's adequacy or content, do not provide new information or evidence related to the DEIR's analysis, and do not affect the DEIR's completed analysis or conclusions.

A4-9 This comment provides background information concerning the Affordable Housing and High Road Jobs Act of 2022 and reiterates its comments that the City should consider utilizing local workforce policies to benefit the local area economically and to mitigate GHG emissions, improve air quality, and reduce transportation impacts. The commenter's opinions are noted; see Response A4-4 thru A4-8.

A4-10 The comment suggests the incorporation of training requirements for construction activities to prevent community spread of COVID-19 and other infectious diseases during Project construction and notes that such requirements include construction site design requirements, testing procedures, and infectious disease preparedness and response timing.

COVID-19 is a public health issue, not a Project-related CEQA effect. State and local governments implement regulations and enforce safe working conditions for construction sites. Project construction activities would be subject to compliance with all applicable safety regulations if COVID-19 persists at the commencement of construction of any Project phase. Construction workers would be required to comply with any guidelines and requirements issued by the State of California, the County of Los Angeles, and the City of Gardena, as well as any additional safety measures required by the Project site's construction manager. This comment does not relate to the DEIR's adequacy or content, does not provide new information or evidence

related to the DEIR's analysis, and does not affect the DEIR's completed analysis or conclusions. No further response is necessary.

A4-11 This comment provides background to CEQA and the fair argument test regarding an EIR's analysis. No further response is necessary.

A4-12 This comment provides a background to the standards and purposes of Phase I, II, and III ESAs and questions the adequacy of the DEIR's analysis of hazardous materials due to the Phase I ESA's using an older assessment standard.

ASTM E1527-13 already includes "likely presence" as a test, as the commenter notes on page 13. Furthermore, the use of older ASTM standard would not change conclusion. As the commenter notes, the site was identified as a REC, so the analysis and conclusion (and thus mitigation) would remain unchanged with an updated Phase I. As analyzed in **DEIR Impact 4.6-1**, the Project would comply with COA HAZ-1, which requires an asbestos survey prior to demolition and COA HAZ-2 which requires independent evaluation for lead-based paint (LBP) to address potential impacts to construction workers during demolition of structures which could include asbestos or LBP. Furthermore, the Project would be required to prepare a Construction Management Plan per MM HAZ-1, which would mitigate construction impacts from undocumented contaminants to less than significant.

A4-13 This comment questions the relevancy of the DEIR's Phase I ESA analysis as they are outdated and use older, less stringent standards rather than the newer and current standard (ASTM-E1627-13 vs. ASTM E1527-21).

Please see Response A4-12 above.

A4-14 This comment notes that there is potential for the presence of asbestos-containing materials (ACM) and/or LBP citing the North Phase I ESA (**DEIR Appendix 4.6-1**). The comment further discusses the harms of ACM and LBP to human health and concludes that these risks should be considered significant and concludes that the EIR should be revised and recirculated "to thoroughly assess the potential hazards impact of the Project and its required demolition activities and potential handling of asbestos and lead-based paint and mitigate those impacts to a level of insignificance."

As discussed in **DEIR Section 4.6**, the Phase I ESA notes the potential presence of ACM and LBP and designates existing buildings as a REC. However, as discussed in **DEIR Section 4.6**, these potential impacts would be addressed by COA HAZ-1 and COA HAZ-2, which would require an asbestos survey prior to demolition and LBP testing if paint

is separated from building materials during demolition, thereby reducing the potential impacts to less than significant. No further response is necessary.

A4-15 The comment cites the DEIR's construction nose analysis and alleges MM NOI-1 and NOI-2 are insufficient in addressing noise impacts concerning the Project. The comment suggests the City revise and recirculate the DEIR to "adequately mitigate the Project's significant noise impacts," but provides no suggestions or mitigation measures to reduce the impact to less than significant.

As discussed in **DEIR Section 4.9: Noise**, noise impacts from construction would be considered significant and unavoidable. As noted in **DEIR Section 4.9**, the Project's construction activities would be exempt from the City's noise standards with certain restrictions pursuant to Gardena Municipal Code (GMC) § 8.336.080 (construction activities would not take place during City-set days/hours). However, construction noise levels have been conservatively analyzed to the City's operational noise standards. Mitigation measures NOI-1 and NOI-2 would reduce construction noise by establishing a temporary sound barrier and requiring all power construction equipment (including combustion engines), fixed or mobile to be equipped and maintained with state-of-the-art noise shielding and muffling devices. Nonetheless, impacts would remain significant and unavoidable. The commenter does not provide any suggested mitigation measures which could reduce construction noise below the operational noise standards. As discussed in **DEIR Section 6.5: Alternatives Considered but Rejected**, unless demolition is avoided (and the existing structures remain), no modification of the Project would avoid the Project's significant unavoidable construction noise impacts. This was rejected as infeasible, as it would preclude development throughout the majority of the Project site.

A4-16 The comment summarizes and concludes the letter by suggesting the City should revise and recirculate the DEIR to address "comments and issues identified in this letter." Further, the comment suggests the City "should require additional environmental studies be performed to comply with CEQA and other state laws."

Please see Responses A4.4 - A4.15 above. No further response is necessary.

A4-17 This comment includes attachments referenced in the comment letter, including a March 8, 2021 SWAPE letter to Mitchem M. Tsai RE: Local Hire Requirements and Considerations for Greenhouse Gas Modeling and the professional work experiences for two experts (on unrelated projects). As such, no further response is necessary.

Letter A5 – Tish McCauley
Page 1 of 1

Normandie Crossing Objection

Tish McCauley <tishmccauley@gmail.com>
Sun 2/25/2024 12:26 PM
To:Amanda Acuna <AAcuna@cityofgardena.org>

Caution! This message was sent from outside your organization.

Hi Angela,
I'm sorry for accidentally sending the incomplete email a minute ago.

Thanks for accepting and presenting these concerns on my behalf.
While I understand the need to add housing and provide for low-income housing, I am vehemently opposed to this project for the following reasons:

A5-1

1) I live off Normandie and 170th and can attest that the traffic on Normandie is almost gridlocked between 182nd and Redondo Beach Blvd.
A) It is particularly difficult to travel during school drop-off and pickup times M-F.
B) 170th has become a speedway shortcut for locals to avoid Artesia on the way out of Gardena, and adding 403 residences will only increase the short-cut traffic on a residential street.
C) There is another residential construction project that was not considered in the traffic study, (since it isn't completed yet), traffic at Normanie and Magnolia.

A5-2

2) Allowing for a 7-story residential building within an established, quiet neighborhood sets a dangerous precedent for future development. We are talking about a building that is as tall as Gardena Memorial Hospital! Even the new townhomes at 168th and Normandie staggered their 2-and3-story homes to "fit" into the style of the surrounding neighborhood.

A5-3

3) Most homes that will be east of the 7-story building don't need air-conditioning due to the ocean breeze's benefit. A wall of apartments will eliminate that breeze for long-term homeowners.

A5-4

4) Residential parking is already congested, and adding hundreds of additional cars will only exacerbate the frustration that current residents feel, especially on street-sweeping days!

A5-5

5) The map on the planning site shows that the project is bordered by "Brighton Way" - which is an alley, not an actual street. At the developer's meeting, they mentioned that the alley would be used as an entrance/exit.

A5-6

I'm looking forward to being notified of the planning and council meetings that will address this

project. Thanks

Tish McCauley

RESPONSE TO COMMENT LETTER NO. A5
Tish McCauley, Resident
February 25, 2024

A5-1 This comment is introductory in nature and does not address an environmental topic. As such, no response is required.

A5-2 This comment notes concerns with existing traffic volumes on South Normandie Avenue and how Project trips would affect these traffic volumes. Specifically, the commenter notes existing traffic congestion during school drop-off and pick-up times Monday through Friday. The Project would increase trips on South Normandie Avenue. However, the Project has been designed to minimize increased trips through TDM strategies and ITS applications. These include features such as unbundled parking, additional bicycle parking, and a one-month free transit pass to help renters become acquainted with public transit and pre-leasing for area employees.

The commenter is concerned that Project traffic would use West 170th Street to avoid congestion on South Normandie Avenue. The townhome component has an entry/exit onto West 170th Street as well as West 169th Street. The apartment component does not have access to West 170th Street. Thus, it is likely only townhome residents would use West 170th Street. Additionally, the townhome component also has an entry/exit on West 169th Street, thus, only the townhomes closer to West 170th Street would use this entry/exit.

This comment also notes another residential development on South Normandie Avenue and Magnolia Avenue. As shown on **DEIR Appendix 4.13-2** Figure 3 and listed in **DEIR Appendix 4.13-2** Table 4, this future development is analyzed as Related Project #6.

A5-3 This comment notes concerns with mass and height. The Project has been designed to buffer surrounding land uses from the apartment component by including three-story townhomes at the perimeter of the Project site, adjacent to existing residential uses. There are already two-story residential uses and a multi-family development on West 169th Street north of the Project site, thus, the Project would be similar in character and use to surrounding land uses.

A5-4 This comment notes concerns with the apartment building height and breeze to residential uses east of the Project site. It is noted that South Normandie Avenue is east of the Project site and the apartment building would be more than 80 feet away

from the residences to the east. Additionally, a single building is unlikely to interfere with breeze. Furthermore, breeze and air conditioning are not an environmental concern. Therefore, no further response is necessary.

A5-5 This comment notes concerns with street parking by Project residents on surrounding streets. The Project proposes 399 parking spaces for the apartment building and 160 parking spaces for the townhomes.

Based on the above provided parking and connection to surrounding public transit, it is not anticipated that Project residents would park on surrounding streets. Furthermore, regular street parking by Project residents would also be inconvenient, as Project residents would need to carry belongings to and from the Project site. Finally, parking is not an environmental concern, therefore, no further response is necessary.

A5-6 This comment notes the classification of Brighton Way as an alley. The DEIR already refers to this street as an alley throughout (see DEIR Page 2-1). Therefore, no further response is required. The comment also says that the alley would be used as an entrance/exit. However, the Conceptual Site Plan clearly shows the entrance and exits to the Project site are not through the alley.

Letter A6 – Keren Hwang

Page 1 of 1

Normandie Crossing/16911 Normandie

Keren Hwang <kerenhwang@yahoo.com>
Sun 2/18/2024 5:36 PM
To:City Council.web <CityCouncil.web@cityofgardena.org>;Amanda Acuna <AAcuna@cityofgardena.org>

Caution! This message was sent from outside your organization.

Hello City of Gardena,

A6-1 I am concerned about the development of the complexes on 16911 Normandie in Gardena. I understanding we need housing and I am concerned about increased traffic on Normandie which is only 2 lanes. However, I don't understand A6-2 why the buildings need to be such a behemoth. 7 stories high?! Are there any buildings in Gardena and/or surrounding cities with over 3 stories high? There should be a law against building so high in this neighborhood. And A6-3 let's not forget we still have earthquakes.

I oppose building something so high in Gardena.

Thank you.
Keren Hwang
Home Owner in Gardena, CA.

RESPONSE TO COMMENT LETTER NO. A6
Keren Hwang, Resident
February 18, 2024

A6-1 This comment states concern over traffic on South Normandie Avenue. As shown in **DEIR Appendix 4.13-2** Table 7, all intersections operate at acceptable levels of service except for the South Normandie Avenue at West 169th Street intersection. It is typical for minor street stop-controlled intersections to operate at lower levels of service. The commenter incorrectly states that South Normandie Avenue is two lanes. South Normandie Avenue is a four-lane street with left turn pockets to turn west at West 169th Street and to turn east at West 170th Street.

A6-2 This comment states concern over the apartment building height. A building of similar height is under construction at 12850 Crenshaw Boulevard, at the City's northwestern extent. Given the blighted condition of the existing site, redevelopment would improve the site's visual condition. Additionally, the Project's building heights would be consistent with the development standards in the proposed Normandie Crossing Specific Plan. This comment does not address DEIR's adequacy or raise a significant environmental issue. As such, no further response is necessary.

A6-3 This comment states concern over earthquakes. As discussed in **DEIR Section 7**, the Project site is not within an Alquist-Priolo fault zone. Additionally, Project's Preliminary Geotechnical Investigation; see **DEIR Appendix 4.4-1: Preliminary Geotechnical Investigation**) was prepared and found that risk of surface fault rupture was low. The geotechnical report contains recommendations which the Applicant is required to follow in accordance with GMC § 18.42.200A. Therefore, no impact would occur and no mitigation was required.

Letter A7 – Kevin Collier
Page 1 of 1

From: Kevin Collier <kevin.collier@envieta.com>
Sent: Thursday, February 1, 2024 9:18 AM
To: Amanda Acuna <AAcuna@cityofgardena.org>
Subject: Comments on Normandie Crossing Specificc Plan

Caution! This message was sent from outside your organization.

Please clarify the details regarding EV charging parking spaces. The Draft EIR states that there are 40 vehicle charging spaces. The EIR also states that regulations require 10% of parking stalls to be EV capable, 25% to be EV ready, and 5% to be equipped with Level 2 EV chargers. Please clarify if the 40 spaces allocated for EV charging are just EV capable, or are the planned to have chargers installed and available.

A7-1

Please clarify the detailed information in the EIR regarding the number of parking spaces. The EIR states 195 spaces are provided in level 1, but lists only 135 standard spaces, 20 EV spaces, and 8 accessible spaces. The EIR states 204 spaces are provided in level 2, but lists 150 standard spaces and 20 EV spaces.

A7-2

During the Jan 31 community meeting the developers stated that parking spaces would be leased. The EIR only states that the parking spaces are not bundled with a specific apartment. The stated motivation for leasing parking spaces is to encourage the use of public transportation rather than using a personal vehicle. I am skeptical that leasing spaces would have this incentive, but rather would encourage tenants to park on surrounding streets. I think my skepticism is shared by many in the community. Please consider options to mitigate the incentive to park on local streets, such as:

- Issue street parking permits to residents of the surrounding neighborhood.
- Provide free garage parking to apartment tenants.
- Increase the number of parking spots with installed EV chargers to encourage off-street parking for owners of EVs.

A7-3

Kevin Collier

RESPONSE TO COMMENT LETTER NO. A7
Kevin Collier, Resident
February 1, 2024

A7-1 This comment requests clarification on the electric vehicle (EV) charging provided by the Project. In conformance with the Specific Plan standards and the latest Title 24 requirements, the apartment building would provide 20 stalls with EV chargers installed, 40 spaces that are EV capable with electrical panel space and load capacity, and 100 spaces that are EV ready with branch circuit, raceway, and receptacles. Each townhome unit would have one EV ready space within each garage.

A7-2 This comment requests clarification on the total parking provided by the Project. The Project includes four types of parking: standard, accessible (for compliance with the Americans with Disabilities Act [ADA] requirements), EV parking as described above, and tandem parking (tandem refers to two spaces that in front of each other, rather than side by side). Each tandem space can accommodate two vehicles. The Project proposes the following parking:

- Level 1: 195 spaces, 155 of which would be standard, 8 of which would be handicapped, and 32 of which would be tandem;
- Level 2: 204 spaces, 170 of which would be standard and another 34 would be tandem The EV spaces referred to in response A7-1 would be spread between the two floors.

A7-3 This comment suggests alternative means to incentivize public transit. The commenter begins by suggesting issuing street parking permits to surrounding residents. The Applicant cannot issue parking permits to surrounding residents, however, this suggestion will be passed on to the City Council. Regular street parking by Project residents would also be inconvenient, as Project residents would need to carry belongings to and from the apartment component daily.

The next alternative offered is to provide free garage parking to apartment residents. Providing free garage parking to residents would not incentivize use of public transport, thus, this suggestion is not feasible. Furthermore, Assembly Bill (AB) 1317 requires all residential parking to be unbundled from rent for any residential use of 16 or more units that are issued a certificate of occupancy after January 1, 2025. The Project apartment component includes 328 units and would be issued a certificate of occupancy after January 1, 2025; thus, the Project would be required to comply with AB 1317 and prohibited from providing free garage parking.

The final alternative offered is to increase the number of EV chargers to incentivize EV owners to park off-street. As discussed in Responses A7-1 and A7-2, the Project provides EV parking, which is consistent with State regulatory requirements. As the Project does not have any significant air quality or GHG impacts, it is not necessary to install more chargers at this time to mitigate impacts. However, the comment about installing more chargers has been passed on to the Applicant.

3.0 ERRATA TO THE DRAFT EIR

The responses included in **DEIR Section 2.0: Comment Letters and Responses**, may include text revisions to clarify or amplify information in the DEIR and/or appendices, as initiated by the Lead Agency or due to environmental issues raised in the comment letters. Should a response to a comment require DEIR revisions, the relevant DEIR text is presented in a box, with deleted text indicated by ~~strike through~~ and added text indicated by double underlining, as shown in the following example:

~~Deleted DEIR text~~ Added DEIR text

It is noted none of the corrections/clarifications identified in this section constitute "significant new information" pursuant to State CEQA Guidelines § 15088.5. The corrections/clarifications identified in this section merely clarify/amplify and make insignificant modifications to the DEIR. The corrections/clarifications involve only minor changes in the Project, but do not involve changes to the environmental setting or significant new information.

3.1 PUBLIC REVIEW DRAFT ENVIRONMENTAL IMPACT REPORT

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Appendix 4.7-2: Water Resources Analysis

Appendix 4.9-1: Noise Impact Study

Appendix 4.9-2: Operational Noise Analysis

DEIR Section ES: Executive Summary

DEIR Page ES-3

- Redesignate the residential parcel at 16964 ~~179th Street~~ Brighton Avenue from Industrial to Single Family Residential and rezone from General Industrial Zone (M-2) to Single Family Residential Zone (R-1) consistent with the existing residential land use.

DEIR Section 2.0: Project Description

DEIR Page 2-10

The parcel immediately adjacent to the Project site's southwest corner, at 16964 ~~West 179th Street~~ Brighton Avenue, is occupied by a single-family residential (SFR) DU.

DEIR Page 2-10, **Table 2-3: Surrounding Land Uses and Zoning**

Table 2-1: Surrounding Land Uses and Zoning

Direction	Existing On-the-Ground Land Uses	Zoning[1]
North	North: West 169th Street, with a 63-unit single-room occupancy multi-family development across the street, at 16819 South Normandie Avenue. Northwest: Single-family residential uses are west of South Normandie Avenue.	North: Industrial Zone (M-1)[2] Northwest: Low-Density Multi-Family Residential Zone (R-2)[3]
South	South: West 170th Street, with single-family residential uses across the street. Southwest: One single-family residential dwelling unit is immediately adjacent, at 16964 ~~West 179th Street~~ Brighton Avenue.	South: Single-Family Residential Zone (R-1)[4] Southwest: General Industrial Zone (M-2)[5]
East	East: South Normandie Avenue and an existing UPRR track (north/south orientation) are immediately adjacent and to the east. Northeast/Southeast: Multi- and single-family residential uses are across South Normandie Avenue, respectively.	East: General Industrial Zone (M-2)[5] Northeast: Normandie Estates Specific Plan[6] / Southeast: Single-Family Residential Zone (R-1)[4]
West	Brighton Way (an alleyway) is to the west, with single-family and duplex residential uses across the alley.	Low-Density Multiple Family Residential Zone (R-2)[3]

Notes:
1. City of Gardena. (2020). Zoning. Available at https://cityofgardena.org/wp-content/uploads/2020/11/Gardena_Zonning_2020.pdf.
2. GMC Chapter 18.36: Industrial Zone (M-1). See GMC §18.36.040: Performance Standards, for property development standards.
3. GMC Chapter 18.14: Low-Density Multi-Family Residential Zone (R-2). See GMC §18.14.050: Property Development Standards, for property development standards.
4. GMC Chapter 18.12: Single-Family Residential Zone (R-1). See GMC §18.12.050: Property Development Standards, for property development standards.
5. GMC Chapter 18.38: General Industrial Zone (M-2). M-1 Zone performance standards apply; see GMC §18.36.040.
6. Normandie Estates Specific Plan single-family detached residential.
7. GMC §18.14.050: Property Development Standards.

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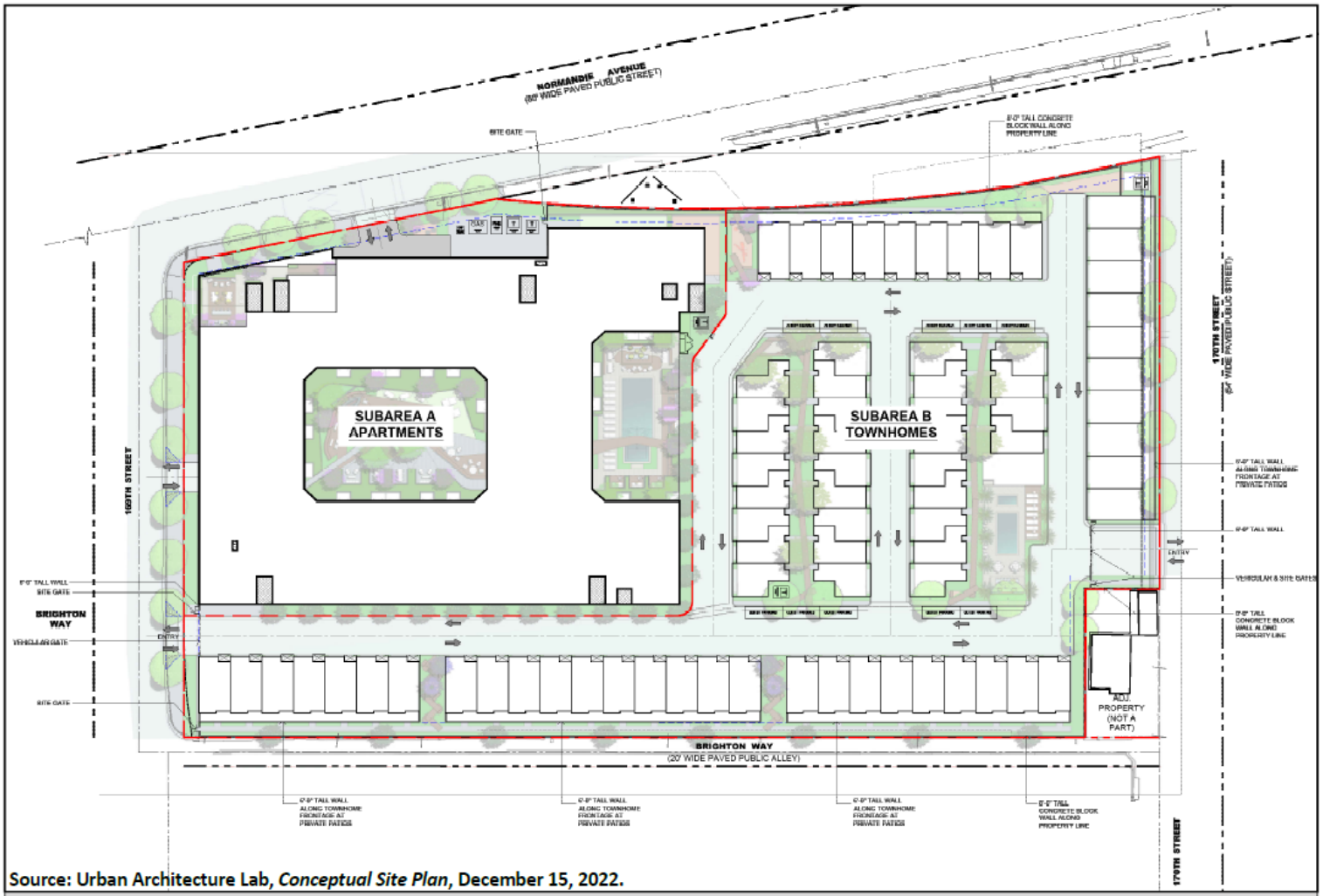
Additionally, the Project proposes to redesignate and rezone two parcels that are adjacent to the site and outside the proposed Specific Plan area to be consistent with existing uses, as depicted on Exhibit 2-2. These areas include the residential parcel at 16964 ~~West 179th Street~~ Brighton Avenue and the UPRR parcel immediately adjacent and east of the Project site.

DEIR Page 2-13, **Exhibit 2-4: Conceptual Site Plan**
(Previous Conceptual Site Plan dated December 15, 2022)



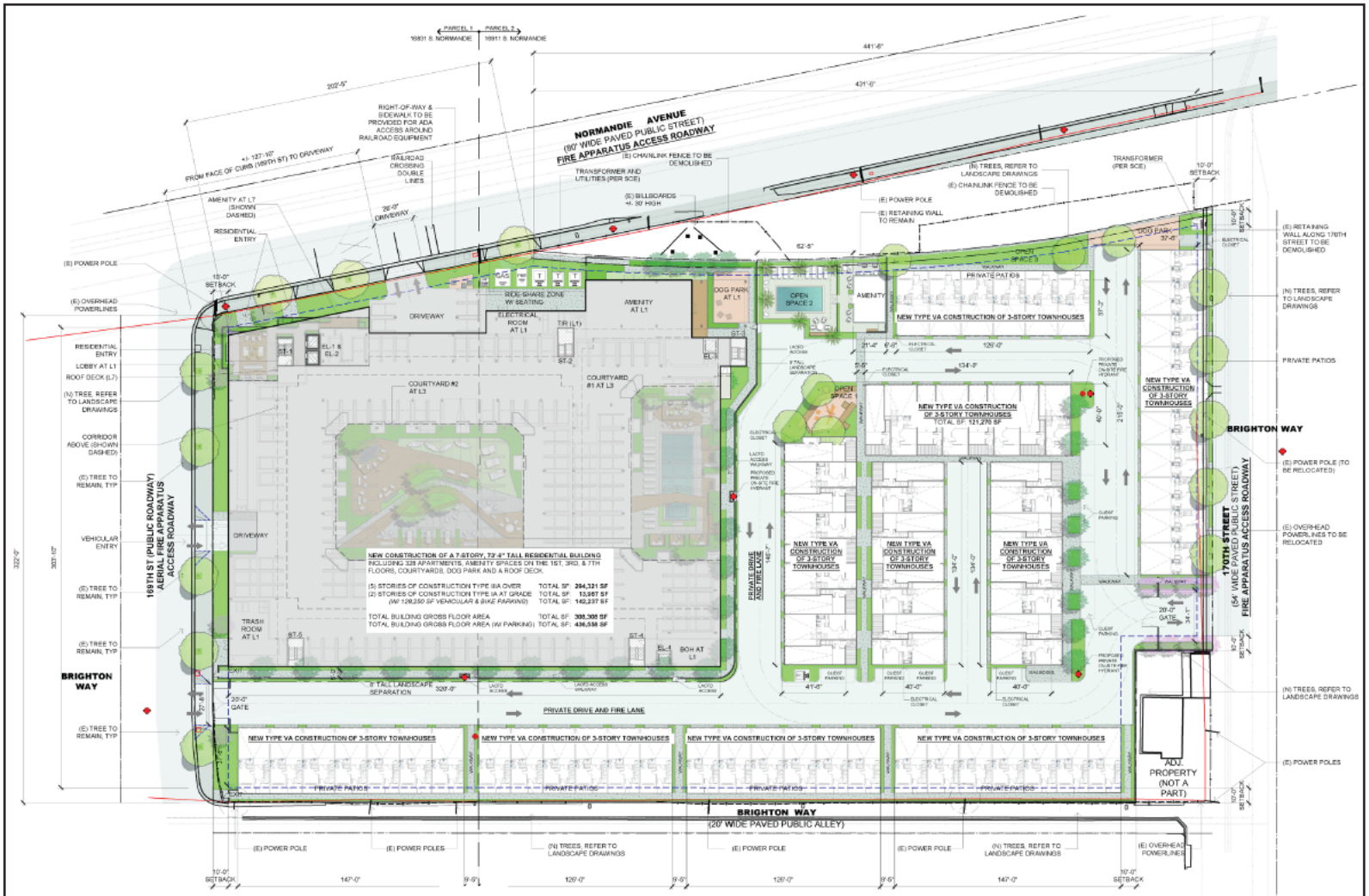
Source: Urban Architecture Lab, ***Conceptual Site Plan***, December 15, 2022.

EXHIBIT 2-4: CONCEPTUAL SITE PLAN
Normandie Crossing Specific Plan Project

NOT TO SCALE

Kimley»Horn

(Revised Conceptual Site Plan dated February 27, 2024)



Source: Urban Architecture Lab, *Site Plan*, February 27, 2024.

EXHIBIT 2-4: CONCEPTUAL SITE PLAN
Normandie Crossing Specific Plan Project

NOT TO SCALE

Kimley»Horn

DEIR Page 2-15

Additionally, the Project proposes approximately ~~50,493~~ 44,420 total SF of open space, comprised of approximately ~~20,150~~ 13,600 SF of private open space and approximately ~~30,343~~ 32,820 SF of common open space. The Project proposes approximately 20,432 SF of planting areas, including approximately 10,553 SF within Subarea A and approximately 9,879 SF within Subarea B.

DEIR Page 2-15, **Table 2-4: Land Use Summary – Proposed Project**

Table 2-2: Land Use Summary - Proposed Project

Description	Industrial (Square Feet)[1]	Residential[1]	
		(Gross Square Feet)	(Dwelling Units)
Industrial (to be removed)	-115,424	-	-
Industrial (to be removed, but excluded from Project impact offsets)	9,324		
Apartment Building	-	308,308	328
Townhome-Style Residential	-	~~120,673~~ 121,270	75
Project Total	***-106,100***	***~~+428,981~~ +429,578***	***+403***

Notes:
1. See **Table 2-1.**
2. Urban Architecture Lab (~~2022~~ 2024). *16911 Normandie Apartments and Townhomes Entitlement Set, Sheet No. G0.01: Project Information.*

DEIR Page 2-15

The Project proposes an approximately 308,308-SF apartment building with 328 DU at a density of approximately ~~155~~ 154 DU/AC.

DEIR Page 2-15

~~Each~~ Subarea A ~~unit~~ would ~~be~~ provide~~d a minimum of 50~~ 9,850 SF of private open space. The common open space amenities proposed in Subarea A total approximately ~~22,698~~ 22,140 SF and include: roof deck with BBQs and seating areas; swimming pool with BBQ and seating areas; a dog park fitness room; club houses; and a courtyard with seating area.

DEIR Page 2-16, **Table 2-5: Land Use Summary – Proposed Apartment Building[1]**

Table 2-3: Land Use Summary – Proposed Apartment Building [1]

Level	Description	Floor Area[2] (Square Feet)	Dwelling Units
L1	Lobby	~~2,800~~ 2,080	
	Amenity I: Fitness Room	~~2,682~~ 2,526	
L2 - L7	Apartment Units	~~241,109~~ 241,065	328 (68 Studio, 194 1-Bedroom, 66 2- Bedroom)
	Balconies (Covered)[4]	6,991	
L3	Amenity II: Courtyard	~~1,446~~ 1,332	
	Amenity III: Pool Court	~~1,500~~ 1,382	
L4	Amenity IV: BBQ Covered Dining Area	~~795~~ 725	
Other	Other[3]	~~50,985~~ 52,207	
Total		***308,308***	

Notes:
1. Urban Architecture. (~~2022~~ 2024). *16911 Normandie Apartments & Townhomes Entitlement Set*.
2. "Floor Area," as defined in GMC Chapter 18:04: Definitions.
3. Other = Circulation, stairs, elevator shafts, trash vestibules, and trash rooms.
4. Only covered portions of balconies are included in the floor area calculation.

DEIR Page 2-16

- Vehicle Parking, 195 Spaces: ~~135~~ 155 Standard, ~~20 electric vehicle charging (one of which is a van electric vehicle charging), and~~ 8 accessible, and 32 tandem.

DEIR Page 2-16

- Vehicle Parking, 204 Spaces: ~~150~~ 170 Standard ~~and 20 electric vehicle charging~~ and 34 tandem.

The apartment building would provide 20 spaces with EV chargers installed, 40 spaces that are EV capable with electrical panel space and load capacity, and 100 spaces that are EV ready with branch circuit, raceway, and receptacles. The EV parking spaces would be distributed between the building's first two levels.

DEIR Page 2-16

Up to ~~90~~ 66 spaces could be tandem; tandem spaces could only be rented as a pair to a single unit.

DEIR Page 2-16

The Project proposes 75 townhome-style units in ~~nine~~ ten buildings (totaling approximately ~~120,673~~ 121,270 gross SF), at a density of approximately 24 DU/AC.

DEIR Page 2-17

The ~~various~~ proposed townhome product types ~~are 30 two-bedroom, 35~~ 65 three-bedroom, and 10 four-bedroom units.

DEIR Page 2-17, **Table 2-6: Land Use Summary – Proposed Townhomes**

Table 2-4: Land Use Summary – Proposed Townhomes

Level	Description	Floor Area[1] (Square Feet)	Dwelling Units
L1-L3	Townhouses	~~115,982~~ 119,480	~~30 two-bedroom~~ ~~35~~ 65 three-bedroom 10 four-bedroom
	Balconies (Covered)[2]	~~3,916~~ 1,190	
L1	Amenity V	~~775~~ 600	
	Subtotal	**~~120,673~~ 121,270**	

Source: Urban Architecture. (~~2022~~ 2024). *16911 Normandie Apartments & Townhomes Entitlement Set.*

Notes:
1. "Floor Area," as defined in GMC Chapter 18:04: Definitions.
2. Only covered portions of balconies are included in the floor area calculation.

DEIR Page 2-17

The common open space amenities proposed in Subarea B total approximately ~~7,645~~ 8,680 SF and include the following: swimming pool with BBQ and seating areas; dog park; club house; and ~~paseos with seating areas~~ playground.

DEIR Page 2-19

- Removing approximately 170 linear feet of railroad spur track~~, which enters the Project site~~ on UPRR property ~~and~~ that formerly served the southernmost industrial building (i.e., 16911 South Normandie Avenue).

DEIR Page 2-19

Residential Parcel at 16964 ~~179th Street~~ Brighton Avenue
Concerning the SFR parcel immediately adjacent to the Project site's southwest corner (not a part of the Specific Plan area) at 16964 ~~West 179th Street~~ Brighton Avenue, the Project proposes to redesignate the parcel from Industrial to Single Family Residential, and rezone from General

Industrial Zone (M 2) to Single Family Residential Zone (R-1) consistent with the existing residential land use.

DEIR Page 2-22

- Concerning the residential parcel at 16964 ~~West 179th Street~~ Brighton Avenue, a General Plan amendment to change the land use designation on the General Plan Land Use Map from Industrial to Single-Family Residential; and rezone from General Industrial Zone (M2) to Single Family Residential Zone (R-1) consistent with existing residential land use.

DEIR Page 2-22

- Concerning the residential parcel at 16964 ~~West 179th Street~~ Brighton Avenue, a zoning map amendment to change the zone on the Zoning Map from General Industrial (M-2) Zone to Single-Family Residential (R-1) Zone; and

DEIR Section 4.1: Air Quality

DEIR Page 4.1-1

It is noted, the Air Quality Report and Health Risk Assessment identified above were based on an earlier Conceptual Site Plan, which has since been slightly modified ("February 2024 Conceptual Site Plan"). **Section 2.3: Project Characteristics** describes the proposed Project based on the February 2024 Conceptual Site Plan. Given the February 2024 Conceptual Site Plan involved only minor modifications to the Project, the Air Quality Report and Health Risk Assessment significance conclusions remain valid and applicable to the February 2024 Conceptual Site Plan.

It is further noted that Kimley-Horn conducted a third-party review on behalf of the City of Gardena ("City") of the Project's Air Quality Report and Health Risk Assessment; see **Appendix 4.1-1 and Appendix 4.1-2**.

DEIR Section 4.3: Energy

DEIR Page 4.3-1

It is noted, the Energy Assessment and Air Quality Report identified above were based on an earlier Conceptual Site Plan, which has since been slightly modified ("February 2024 Conceptual Site Plan"). **Section 2.3: Project Characteristics** describes the proposed Project based on the February 2024 Conceptual Site Plan. Given the February 2024 Conceptual Site Plan involved only minor modifications to the Project, the Energy Assessment and Air Quality Report significance conclusions remain valid and applicable to the February 2024 Conceptual Site Plan.

It is further noted that Kimley-Horn conducted a third-party review on behalf of the City of Gardena ("City") of the Project's Air Quality Technical Report; see **Appendix 4.1-1**.

DEIR Page 4.3-13

Additionally, the Project's proposed apartment building would provide 1.2 parking spaces per unit, including approximately ~~40 electric vehicle (EV) spaces~~ 20 spaces with EV chargers installed, 40 spaces that are EV capable with electrical panel space and load capacity, and 100 spaces that are EV ready with branch circuit, raceway, and receptacles which would ~~to~~ encourage carpooling or other alternate modes of transportation.

DEIR Section 4.5: Greenhouse Gas Emissions

DEIR Page 4.5-1

It is noted, the GHG Technical Report identified above was based on an earlier Conceptual Site Plan, which has since been slightly modified ("February 2024 Conceptual Site Plan"). **Section 2.3: Project Characteristics** describes the proposed Project based on the February 2024 Conceptual Site Plan. Given the February 2024 Conceptual Site Plan involved only minor modifications to the Project, the GHG Technical Report significance conclusions remain valid and applicable to the February 2024 Conceptual Site Plan.

DEIR Page 4.5-30, **Table 4.5-4: City of Gardena Climate Action Plan Analysis**

Table 4.5-5: City of Gardena Climate Action Plan Analysis

Strategy	Goal		Project Analysis
Land Use and Transportation (LUT)	**A**	Accelerate the market for EV vehicles	**No Conflict**. The Project would designate approximately 40 percent of the 399 parking stalls in the apartment building to be capable, ready, or equipped for EV Chargers. More specifically, the Project would provide 10 percent of parking stalls to be EV capable, 25 percent of parking stalls to be EV ready with Level 2 EV charging receptacles, and 5 percent of parking stall to be equipped with Level 2 EV Chargers.
	B	Encourage ride-sharing	**No Conflict**. A designated loading area at the apartment building along Normandie Avenue would be signed and distinguished (e.g., with paving and/or paint) such that it may be utilized as a pick-up and drop-off zone for ride-sharing services.
	C	Encourage transit usage	**No Conflict**. Existing GTrans bus stops are located less than 600 feet to the north of the Project site along 166th Street. The Project includes ROW improvements along 169th Street which would create a continuous pedestrian path and allow

Strategy	Goal		Project Analysis
			greater access to public transit opportunities. Additional Torrance Transit and Metro services are located approximately 0.25 mile south of the Project site, at the Artesia Boulevard and South Normandie Avenue intersection. The Los Angeles County Metropolitan Transportation Authority (Metro) Harbor Gateway Transit Center is also located approximately 0.9 mile to the south, providing more access to public transit opportunities. Per the NCSP, new apartment residents who sign a 12-month lease would be offered a one-time free monthly Metro pass.
	D	Adopt active transportation initiatives	**No Conflict**. The Project would provide 173 bicycle parking spaces on the first level of the apartment building (located in secured facilities accessible only by apartment building residents). All bicycle parking would be located in a safe, convenient location, encouraging the use of bicycle transportation by residents and guests.
	E	Parking strategies	**No Conflict**. The vehicle parking spaces would be unbundled from the rental of the apartment units to encourage alternate modes of transportation.
	F	Organizational strategies	**No Conflict**. The proposed apartment amenities include a multi-purpose office space to provide workspace for residents that work from home. Additionally, this amenity would encourage future residents to telecommute work and therefore reduce VMT.
	G	Land use strategies	**No Conflict**. The Project proposes 403 DU at a density of 77 (DU/AC). The apartment building would provide ~~155~~ 154 DU/AC and the townhomes would provide 24 DU/AC.
	H	Digital technology strategies	**No Conflict**. The Project buildings would be capable of connection to a future fiber network in order to implement the South Bay Fiber-Optic Master Plan.[1]
Energy Efficiency (EE)	**A**	Increase energy efficiency in existing residential units	**Not Applicable**. The Project does not involve existing residential units.
	B	Increase energy efficiency in new	**No Conflict**. The Project would be built to meet the California Green Building Code. Additionally, the proposed pools would use electricity for

[1] Magellan Advisors. (2017). *Fiber-Optic Master Plan – Prepared for the South Bay Workforce Investment Board and the South Bay Cities Council of Governments.*

Strategy	Goal		Project Analysis
		residential developments	filters, pumps, and water heating rather than natural gas.
	C	Increase energy efficiency in existing commercial units	**Not Applicable**. The Project site is currently occupied by industrial uses.
	D	Increase energy efficiency in new commercial developments	**Not Applicable**. The Project includes only residential uses.
	E	Increase energy efficiency through water efficiency	**No Conflict**. The Project would be subject to compliance with the California Green Building Code, which requires that indoor potable water use be reduced by 20 percent through the use of water saving fixtures and/or flow restrictions.
	F	Decrease energy demand through reducing urban heat island effect	**No Conflict**. The Project would reduce the impervious surface area by ~~13.8~~ approximately 8.6 percent, thereby reducing the temperature of the site and surrounding area. The Project would also provide shade from providing ~~89~~ 75 new trees.
	G	Participate in education, outreach, and planning for energy efficiency	**Not Applicable**. The Project is a new residential development, and as such, would not directly be involved in planning for energy efficiency.
	H	Increase energy efficiency in municipal buildings	**Not Applicable**. The Project is a new residential development.
	I	Increase energy efficiency in city infrastructure	**Not Applicable**. The Project is a new residential development, and as such, would not directly be involved in planning for the City's infrastructure efficiency.
	J	Reduce energy consumption in the long- term	**No Conflict**. New residential and non-residential buildings would be subject to the 2022 Title 24 Part 6 Building Code.
Solid Waste (SW)	**A**	Increase Diversion and Reduction of Residential Waste	**No Conflict**. The Project would be subject to compliance with the state's waste diversion goal of 75 percent waste diversion by 2020.
	B	Increase Diversion and Reduction of Commercial Waste	**Not Applicable**. The Project is a new residential development.
	C	Reduce and Divert Municipal Waste	**Not Applicable**. The Project is a new residential development.

Strategy	Goal		Project Analysis
Urban Greening (UG)	**A**	Increase and maintain urban greening in the community	**No Conflict**. The Project includes an increase of approximately ~~50,493~~ 44,420 SF of open space and proposed to plant 75 new trees.
	B	Increase and maintain urban greening in municipal facilities	**Not Applicable**. The Project does not involve municipal facilities.
Energy Generation & Storage (EGS)	**A**	Support energy generation and storage in the community	**Not Applicable.** The Project is a new residential development, which would be serviced by SCE.
Sources: Refer to **Exhibit 2-4: Conceptual Site Plan** and **Appendix 4.5-1** for assumptions used in this analysis.			

DEIR Page 4.5-30, **Table 4.5-5: RTP/SCS Goals and Analysis**

Table 4.5-6: RTP/SCS Goals Analysis

Goal		Project Analysis
Goal 1	Encourage regional economic prosperity and global competitiveness.	**Not Applicable.** The Project proposes residential uses only.
Goal 2	Improve mobility, accessibility, reliability, and travel safety for people and goods.	**No Conflict.** The Project includes ROW improvements along West 169th Street which would create a continuous pedestrian path and allow greater access to public transit opportunities. The Project proposes to construct sidewalks along the Project site frontage: on the south side of West 169th Street (between Brighton Way and South Normandie Avenue), on the north side of West 170th Street (between Brighton Way and South Normandie Avenue), on the west side of South Normandie Avenue (between West 169th Street and West 170th Street), and on the east side of Brighton Way (between West 169th Street and West 170th Street). Additionally, the Project proposes to construct approximately 266 linear feet of offsite sidewalk improvements along the south side of West 169th Street, just west of the Project site, between Brighton Way and the alley just west of Brighton Avenue. Additionally, the Project includes railroad improvements on Normandie Avenue. Both ROW and Railroad improvements would upgrade existing infrastructure and increase mobility, reliability, and travel safety for people and goods.

Goal		Project Analysis
Goal 3	Enhance the preservation, security, and resilience of the regional transportation system.	**No Conflict**. The Project includes railroad improvements on Normandie Avenue. These improvements would enhance the preservation, security, and resilience of the regional transportation system.
Goal 4	Increase person and goods movement and travel choices within the transportation system.	**No Conflict.** The Project includes sidewalk improvements, as described in Goal 2 above. The Project also proposes railroad track improvements along South Normandie Avenue, which include the following: • Removing ~~the~~ approximately 170 linear feet of railroad spur track, ~~which enters the project site~~ on UPRR property. • Removing approximately 830 linear feet of railroad spur currently located along the Project site's eastern boundary. • A new median both north and south of the track alignment, and • New warning devices and tactile warning strips on the South Normandie Avenue east and west sidewalks. • Refreshing railroad crossing pavement markings immediately north and south of the track alignment.
Goal 5	Reduce greenhouse gas emissions and improve air quality.	**No Conflict.** The Project site is in an urban area near existing transit routes and freeways. The Project's location within an urbanized, walkable area would reduce trip lengths, which would reduce GHG and air quality emissions.
Goal 6	Support healthy and equitable communities	**No Conflict.** The Project does not exceed South Coast AQMD's regional or localized thresholds. Based on the Friant Ranch decision, projects that do not exceed the South Coast AQMD's localized significance thresholds (LSTs) would not violate any air quality standards or contribute substantially to an existing or projected air quality violation and result in no criteria pollutant health impacts.
Goal 7	Adapt to a changing climate and support an integrated regional development pattern and transportation network.	**Not Applicable.** This is not a project-specific goal.
Goal 8	Leverage new transportation technologies and data-driven solutions that result in more efficient travel.	**No Conflict.** As mentioned previously, the Project would designate approximately 40 percent of the ~~559~~ 399 apartment parking stalls to be capable, ready, or equipped for EV Chargers. Each

Goal		Project Analysis
		townhome unit would have one EV ready space within each garage. Additionally, a designated loading area at the apartment building along Normandie Avenue would be signed and distinguished (e.g., with paving and/or paint) so that it may be used as a pick-up and drop-off zone for ride-sharing services.
Goal 9	Encourage development of diverse housing types in areas that are supported by multiple transportation options.	**No Conflict.** The Project proposes various housing types that would provide diverse housing options and be served by public transit located within approximately 0.25 mile of the Project site. Existing GTrans bus stops are located less than 600 feet north of the Project site along 166th Street. Additional Torrance Transit and Metro services are located approximately 0.25 mile south of the Project site, at the Artesia Boulevard and South Normandie Avenue intersection. The Los Angeles County Metropolitan Transportation Authority (Metro) Harbor Gateway Transit Center is also located approximately 0.9 mile south of the Project site, providing more access to public transit opportunities. The Project includes ROW improvements along 169th Street, which would create a continuous pedestrian path and allow greater access to public transit opportunities. Further, the Project would provide new apartment residents who sign a 12-month lease one free monthly Metro pass.
Goal 10	Promote conservation of natural and agricultural lands and restoration of habitats.	**Not Applicable.** The Project site is not located on agricultural lands and does not contain native habitat.
Source: Southern California Association of Governments. (2020). *Connect SoCal (2020 - 2045 Regional Transportation Plan/Sustainable Communities Strategy*.		

DEIR Section 4.6: Hazards and Hazardous Materials

DEIR Page 4.6-9

According to California Division of Oil, Gas and Geothermal Resources (CalGEM), ~~no oil or gas wells are located on~~ one abandoned "dry hole" "wildcat" well, identified as "Gardena E.H", exists 121 feet north and 55 feet east from the intersection of 170th Street and Brighton Way thereby placing the well within the parking area east of the southernmost building. There are no oil or gas wells located ~~or~~ immediately adjacent to the site. ~~The closest well was identified to be located approximately 480 feet south of the site and is reported as "abandoned".~~

DEIR Page 4.6-21

As previously addressed, the Phase I ESAs identified various onsite RECs associated with past uses of the Project site. As discussed in **Section 4.6.1: Existing Setting**, there is an existing abandoned well within the Project site where townhomes are proposed. This well is already abandoned and would be capped during Project construction in coordination with CALGEM.

DEIR Section 4.7: Hydrology and Water Quality

DEIR Page 4.7-1

Information in this section is based primarily on hydrology and water quality data provided in **Appendix 4.7-1: Water Resources Technical Report** ("Water Resources Technical Report").

DEIR Page 4.7-1

It is noted, the Water Resources Technical Report was based on an earlier Conceptual Site Plan, which has since been slightly modified ("February 2024 Conceptual Site Plan"). **Section 2.3: Project Characteristics** describes the proposed Project based on the February 2024 Conceptual Site Plan. A follow-up 16911 S Normandie Water Resources Technical Report and Updated Entitlements Package Dated February 27, 2024 ("Water Resources Analysis") (Fuscoe Engineering, March 7, 2024) (see **Appendix 4.7-2**) was conducted to analyze the February 2024 Conceptual Site Plan. The Water Resources Analysis found the Water Resources Technical Report's significance conclusions remain valid and applicable to the February 2024 Conceptual Site Plan.

It is further noted that Kimley-Horn conducted a third-party review on behalf of the City of Gardena ("City") of the Project's Water Resources Technical Report; see **Appendix 4.7-1**.

DEIR Page 4.7-17

The Project proposes various exterior open spaces, thus, would increase the Project site's pervious surfaces from almost nothing (0.3 percent) to ~~14.1~~ approximately 8.6 percent.

DEIR Page 4.7-18

The proposed Project would result in an increase in landscaped areas throughout the Project site, which would decrease impervious surfaces from 99.7 percent under existing conditions to ~~85.9~~ 91.1 percent under proposed Project conditions.

DEIR Page 4.7-19, **Table 4.7-4: Existing Versus Proposed Drainage Conditions**

Table 4.7-7: Existing Versus Proposed Drainage Conditions

Drainage Area	Area (acres)	% Impervious	Q10 (cfs)	Q25 (cfs)	Q50 (cfs)
Existing	5.25	99.70	10.61	13.80	16.76
Proposed	5.25	~~85.9~~ 91.1	9.18	12.10	14.80
Difference	0	~~13.8~~ 8.6	1.43	1.70	1.96
% Change from Existing to Proposed Conditions	-	~~-13.8%~~ -8.6%	-13.5%	-12.3%	-11.7%
Source: **Appendix 4.7-1**, Table 6					

DEIR Page 4.7-24

Fuscoe Engineering, Inc. (2024). *16911 S Normandie Water Resources Technical Report and Updated Entitlements Package Dated February 27, 2024*; see **Appendix 4.7-2**.

DEIR Section 4.8: Land Use and Planning

DEIR Page 4.8-5

- **Southwest:** As noted above, there is one single-family residential dwelling unit immediately adjacent to the Project site and to the southwest, at 16964 ~~West 179th Street~~ Brighton Avenue.

DEIR Page 4.8-7

The parcel immediately adjacent to the Project site's southwest corner, at 16964 ~~West 179th Street~~ Brighton Avenue, and the parcel immediately adjacent and east of the Project site are both designated Industrial.

DEIR Page 4.8-11

The multi-family residential development proposes two types of residential uses: an apartment building with 328 DU at the Project site's northern portion; and 75 townhome-style units within ~~nine~~ ten buildings; see **Exhibit 2-4: Conceptual Site Plan**.

DEIR Page 4.8-11, **Table 4.8-4: Gardena General Plan 2006 Analysis**

Table 4.8-8: Gardena General Plan 2006 Analysis

General Plan Policy	Project Analysis
Community Development Element: Land Use Plan	
LU Goal 1: Preserve and protect existing single-family and low/medium-density residential neighborhoods while promoting the development of additional high-quality housing types in the City.	
Policy LU 1.1: Promote sound housing and attractive and safe residential neighborhoods.	**No Conflict**. The NCSP would implement new zoning and development standards to promote development of high-quality housing in the City. The Project facilitates the surrounding neighborhood's transition into a more complete community, in that it would bring new residents to the neighborhood, bring new housing to this area, improve the streetscape, and activate the pedestrian realm.
Policy LU 1.2: Protect existing sound residential neighborhoods from incompatible uses and development.	**No Conflict**. Factors influencing land use compatibility include aesthetics, air quality, noise, and traffic. As concluded in **Section 4.2: Air Quality**, **Section 4.9: Noise**, **Section 4.13: Transportation**, and **Section 4.16 Aesthetics,** respectively, the Project would result in less than significant operational impacts concerning these resource areas, which in turn would influence land use compatibility. The surrounding properties include single- and multi-family land uses. Therefore, the Project would be a compatible land use and would involve removal of potentially incompatible industrial uses with NCSP approval.
Policy LU 1.4: Locate new medium- and high-density residential developments near neighborhood and community shopping centers with commensurate high levels of community services and facilities.	**No Conflict**. Commercial uses and services are located approximately 0.16 mile south of the Project site at the Artesia Boulevard at Normandie Avenue intersection. These shopping centers are characterized by commercial and retail uses that would provide community services and facilities to the Project's future residents. Additionally, the Project would cluster urban-density housing at an appropriate location in the vicinity of the Harbor Gateway Transit Center, which would offer easy access to public transportation and reduce their automobile dependence.
Policy LU 1.5: Provide adequate residential amenities such as open space, recreation, off-street parking and pedestrian features in multi-family residential developments.	**No Conflict**. The Project would incorporate quality residential amenities, including private and community open spaces. The Project's apartment amenities include a fitness room, dog park, and bike room on the ground level; pools, BBQ's and courtyards with fire pits on level three; and a roof deck and club room on level seven. The Project's townhome amenities include a dog park, ~~paseos~~

General Plan Policy	Project Analysis
	playground, courtyard with BBQ's and fire pits, and a pool. The Project provides adequate residential amenities which would create more attractive and livable spaces for residents. The Project would also provide approximately 399 off-street vehicle and 173 bicycle parking spaces.
Policy LU 1.6: Ensure residential densities are compatible with available public service and infrastructure systems.	**No Conflict**. The Project permits residential density compatible with available public service and infrastructure systems. As described in **Section 4.12: Public Services and Recreation**, and **Section 4.15: Utilities and Service Systems**, the Project includes measures to ensure that the plan area is served by adequate public services, infrastructure, and utilities.
Policy LU 1.8: Minimize through-traffic on residential streets.	**No Conflict.** The Project proposes three vehicle access points at 169th Street (north), 170th Street (south), and Normandie Avenue (east). 169th Street and 170th Street are classified as Local Streets in the GGP. Traffic on these two roadways proceed to Normandie Avenue, which is classified as a Major Collector. The Project minimizes through-traffic on residential streets by orienting vehicular access towards Normandie Avenue.
Community Development Element: Economic Development Plan	
ED Goal 3: Attract desirable businesses to locate in the City.	
Policy ED 3.3: Maintain a multidisciplinary proactive approach to improve the City's image as a desirable business location.	**No Conflict.** The Project facilitates the development of quality housing near local technology and creative sector companies and other employment centers to further attract desirable businesses to locate in the City. Innovative technology firms and their employees place a premium on quality-of-life and livability factors, including access to quality housing options; social, cultural, and environmental amenities; access to shops and restaurants; and low-stress commutes. Project implementation would help alleviate the negative impacts of a lack of housing for local technology and creative sector employees. The Project adopts a multi-disciplinary, proactive approach, balancing job growth in the expanding technology sector with new high-quality housing opportunities to enable local employees to live close to where they work.
Community Development Element: Community Design Plan	
DS Goal 1: Enhance the visual environment and create a positive image of the City.	
Policy DS 1.3: Promote a stronger design review process to ensure that public and	**No Conflict**. The Project has been subject to City review and approval to ensure that future development is held to quality design practices and standards.

General Plan Policy	Project Analysis
private projects comply with best design practices and standards.	
Policy DS 1.4: Provide a sense of arrival to Gardena through entry monument signs, landscaping features, architectural and motifs at key gateway locations.	**No Conflict**. The Project would enhance the visual environment by replacing obsolete, industrial warehouse buildings with a new multi-family development. The Project would incorporate high-quality design and landscaping consistent with the Specific Plan standards. Developing new residential uses in proximity to growing local technology and creative sector industries would help create a positive image of the City. The Project would provide onsite landscaping features and a high-quality sign identifying the Project, consistent with GMC Chapter 18.58 sign standards, at a key gateway location in the City.
DS Goal 2: Enhance the aesthetic quality of the residential neighborhoods in the City.	
Policy DS 2.1: Provide stronger design guidelines for residential development, including both new construction and additions to existing single-family units or multi-family dwellings.	**No Conflict**. The Project is intended to achieve quality and attractively designed development that can serve as a model for future multi-family development in the City. The Project would replace aged and dilapidated industrial warehouse buildings with a residential development that is intended to serve as a catalyst to transform southeast Gardena into a multi-family neighborhood.
Policy DS 2.2: Ensure that new and remodeled dwelling units are designed with architectural styles, which are varied and are compatible in scale and character with existing buildings and the natural surroundings.	
Policy DS 2.3: Encourage a variety of architectural styles, massing, floor plans, color schemes, building materials, façade treatments, elevation and wall articulations.	**No Conflict.** The NCSP development standards would ensure the development includes a variety of massing, floorplans, color schemes, façade treatments, elevations, and wall articulations.
Policy DS 2.7: Require appropriate setbacks, massing, articulation and height limits to provide privacy and compatibility where multiple-family housing is developed adjacent to single-family housing.	**No Conflict**. The apartment building portion of the Project design and access is oriented towards Normandie Avenue and away from the nearest single-family housing located to the south and west of the Project site. Further, the Project appropriately transitions building massing from a single- to multi-family scale by locating the townhome style buildings along the Project boundary that borders single-family housing (south and west) and the apartment building near the multi-family apartments (north) and Normandie Avenue (east).
Policy DS 2.9: Integrate new residential developments with the surrounding built environment. In addition, encourage a strong relationship between the dwelling and the street.	
Policy DS 2.10: Provide landscape treatments (trees, shrubs, groundcover, and grass areas) within multi-family development projects in order to create a	**No Conflict**. The Project would provide landscape treatments that would create a "greener" environment. The Project would replace existing industrial warehouses with a multi-family residential building that incorporates

General Plan Policy	Project Analysis
"greener" environment for residents and those viewing from public areas.	street trees to shade the street and sidewalk and create a pedestrian-scale screen between the ground level and upper levels of the building. The upper-level courtyards would all be landscaped and visible from the street, further enhancing the "green" environment for residents and those viewing from public areas.
Policy DS 2.11: Incorporate quality residential amenities such as private and communal open spaces into multi-unit development projects in order to improve the quality of the project and to create more attractive and livable spaces for residents to enjoy.	**No Conflict**. The Project would incorporate quality residential amenities, including ~~16,120~~ 13,600 SF of private and ~~32,900~~ 32,820 SF of community open spaces. The Project's apartment amenities include a fitness room, dog park, pool, and bike room on the ground level; pools, BBQs and courtyards on level 3; and a roof deck and club room on level 7. The Project's townhome amenities include a dog park, ~~paseos~~ playground, courtyard with BBQs, and a pool. These amenities would create more attractive and livable spaces for residents to enjoy.
Policy DS 2.12: Provide well-designed and safe parking areas that maximize security, surveillance, and efficient access to building entrances.	**No Conflict**. The apartment building portion of the Project would provide parking in an enclosed garage consisting of two vertical floors, starting at the ground level. The parking garage would be accessible only to residents and would be secured by a key fob entry system. Residents would be able to enter the building directly from the parking garage. The townhome units would have enclosed parking garages.
Policy DS 2.14: Require design standards be established to provide for attractive building design features, safe egress and ingress, sufficient parking, adequate pedestrian amenities, landscaping, and proper signage.	**No Conflict**. The Project includes design guidelines to ensure that the Project is designed with a varied but cohesive architectural style. These design standards would ensure that the Project would be designed with attractive building design features, safe egress and ingress, sufficient parking, adequate pedestrian amenities, landscaping, and proper signage.
Policy DS 2.15: Promote innovative development and design techniques, new material and construction methods to stimulate residential development that protects the environment.	**No Conflict**. The Project would provide a new high-quality residential development through Specific Plan implementation, which would conform to the latest CALGreen sustainability standards and encourage attractive architectural design and features to stimulate residential development and protect the environment.
Community Development Element: Circulation Plan	
CI Goal 1: Promote a safe and efficient circulation system that benefits residents and businesses and integrates with the greater Los Angeles/South Bay transportation system.	
Policy CI 1.1: Prioritize long-term sustainability for the City of Gardena, in alignment with regional and state goals, by	**No Conflict.** The Project's apartment building portion would provide 173 bicycle parking spaces and 399 auto parking spaces, consistent with the NCSP but less than

General Plan Policy	Project Analysis
promoting infill development, reduced reliance on single-occupancy vehicle trips, and improved multi-modal transportation networks, with the goal of reducing air pollution and greenhouse gas emissions, thereby improving the health and quality of life for residents.	the City's parking requirements, providing 1.2 parking spaces per apartment unit. As such, the Project would discourage multi-vehicle households. Providing less parking spaces per unit encourages residents to carpool or seek alternative modes of transportation. The Project further promotes use of multi-modal transportation networks through its close proximity to such networks. Existing GTrans bus stops are located less than 600 feet to the north of the Project site along 166th Street. Additional Torrance Transit and Metro services are located approximately 0.25 mile to the south of the Project site, at the intersection of Artesia Boulevard and South Normandie Avenue. The Los Angeles County Metropolitan Transportation Authority (Metro) Harbor Gateway Transit Center is also located approximately 0.9 mile to the south, providing more access to public transit opportunities. Further, per the NCSP, new residents who sign a 12-month lease would be offered one free monthly Metro pass. The Project would provide two parking spaces per townhouse unit, plus 10 guest parking spaces.
CI Goal 3: Develop Complete Streets to promote alternative modes of transportation that are safe and efficient for commuters, and available to persons of all income levels and disabilities.	
Policy CI 3.1: Work with Gardena Municipal Bus Lines and MTA to increase the use of public transit, establish or modify routes, and improve connectivity to regional services.	**No Conflict.** Transit and pedestrian facilities exist near the Project site. Existing GTrans bus stops are located less than 600 feet to the north of the Project site along 166th Street. Additional Torrance Transit and Metro services are located approximately 0.25 mile to the south of the Project site, at the intersection of Artesia Boulevard and South Normandie Avenue. The Los Angeles County Metropolitan Transportation Authority (Metro) Harbor Gateway Transit Center is also located approximately 0.9 mile to the south, providing more access to public transit opportunities. To improve access to public transportation, the Project includes the construction of onsite and offsite sidewalks in this area. The Project includes the construction of sidewalks per Local Street requirements along the south side of 169th Street, Brighton Way (west), and 170th Street (south). Additionally, the Project proposes to construct offsite sidewalk improvements offsite along the south side of 169th Street. The Project, with the incorporation of these sidewalk improvements, would improve connectivity to regional services and promote alternative modes of transportation for residents. Further, the NCSP proposes that new residents who sign a 12-month lease would be

General Plan Policy	Project Analysis
	offered one free monthly Metro pass. This provision would increase the use of established public transit in the area.
Policy CI 3.3: Maintain and expand sidewalk installation and repair programs, particularly in areas where sidewalks link residential neighborhoods to local schools, parks, and shopping areas.	**No Conflict.** The Project would include reconstruction of sidewalks, curbs, and gutters adjoining the Project site. Furthermore, as mentioned above, the Project proposes to construct offsite sidewalk improvements offsite along the south side of 169th Street and onsite along Brighton Way (west) and 170th Street (south) pursuant to the GGP Circulation Element requirements for a Local Street (2 lanes, undivided with parking).
Policy CI 3.4: Maintain a citywide bicycle route and maintenance plan that promotes efficient and safe bikeways integrated with the MTA's regional bicycle system.	**No Conflict.** The Project promotes bicycle usage through provision of bicycle access along street frontages and bicycle parking.
Housing Element	
Goal 3.0: Minimize the impact of governmental constraints on housing construction and cost.	
Policy 3.3: Encourage the use of special development zones and other mechanisms to allow more flexibility in housing developments.	**No Conflict.** The Project reduces the impact of governmental constraints on housing construction and cost by implementing special zoning and development standards to permit more flexibility in housing developments in southeast Gardena. The Project offers an opportunity to create a vibrant, multi-family neighborhood. The Project facilitates more diverse multi-family housing options to serve the City's growing and evolving technology industry, and balances job growth with new high-quality housing opportunities. By permitting denser development than would otherwise be permitted under existing zoning, the Project incentivizes construction of new multi-family housing with a variety of unit types thereby reducing costs.
Goal 4.0: Provide adequate residential sites through appropriate land use and zoning to accommodate the City's share of regional housing needs.	
Policy 4.1: Implement land use policies that allow for a range of residential densities.	**No Conflict.** Upon adoption of the General Plan Amendment and zone change to Specific Plan, the Project would be consistent with land use designations and zoning to provide for the development of multi-family residential development. The provision of up to 403 residential units near regional serving public transit infrastructure assists the City in meeting its share of the regional housing needs allocation. Currently, residential development in southeast Gardena primarily consists of single-family housing with minimal multi-family housing along arterials. The Project permits a greater range of

General Plan Policy	Project Analysis
	residential densities than is currently permitted in this area of the City. Additionally, three parcels of the existing Project site are designated with a Housing Overlay which identifies that the site has potential to be redeveloped with residential uses to help the City meet its Regional Housing Needs Allocation.
Community Resources Element: Conservation Plan	
CN Goal 2: Conserve and protect groundwater supply and water resources.	
Policy CN 2.2: Comply with the water conservation measures set forth by the California Department of Water Resources.	**No Conflict**. The Project conserves and protects groundwater supply and water resources through compliance with all applicable regulations, including the water conservation measures set forth by the Department of Water Resources. The Project site is approximately 99.7% impervious under existing conditions.[2] The Project would reduce the impermeable area to approximately ~~85.90~~ 91.1% , an approximately ~~13.80~~ 8.6% reduction by incorporating approximately ~~31,000~~ 20,432 SF of new planting areas. The Project would be required to comply with all applicable regulations regarding the disposal of hazardous waste and waste oil during construction.
Policy CN 2.6: Encourage and support the proper disposal of hazardous waste and waste oil. Monitor businesses that generate hazardous waste materials to ensure compliance with approved disposal procedures.	
Goal 3: Reduce the amount of solid waste produced in Gardena.	
Policy CN 3.1: Comply with the requirements set forth in the City's Source Reduction and Recycling Element.	**No Conflict**. The Project would comply with all applicable local and state requirements for waste diversion during both construction and operations, including the City's Source Reduction and Recycling Element.
CN Goal 4: Conserve energy resources through the use of technology and conservation methods.	
Policy CN 4.1: Encourage innovative building designs that conserve and minimize energy consumption.	**No Conflict**. The Project would be a multi-family development subject to Title 24 requirements. The Project would be designed to achieve best practices for architectural design and land development that enhance the City's infrastructure, reduce consumption of non-renewable resources, and limit pollutants and greenhouse gas emissions. The Project would comply with the 2022 CALGreen sustainability standards, or those in effect at the time that plans are submitted.
Policy CN 4.2: Require compliance with Title 24 regulations to conserve energy.	
CN Goal 5: Protect the City's cultural resources.	
Policy CN 5.3: Protect and preserve cultural resources of the Gabrielino Native American Tribes found or uncovered during construction.	**No Conflict.** The Project would incorporate measures to protect and preserve any cultural resources of the Gabrielino Native American Tribe, or any other Tribe,

[2] Urban Architecture Lab. (2022). 16911 Normandie Apartments and Townhomes Entitlement Set, Sheet No. G0.01: Project Information.

General Plan Policy	Project Analysis
	found or uncovered during construction. See **Section 4.14: Tribal Cultural Resources**.
Community Safety Element: Public Safety Plan	
PS Goal 1: Maintain a high level of fire and police protection for residents, businesses and visitors.	
Policy PS 1.6: Ensure that law enforcement, crime prevention, and fire safety concerns are considered in the review of planning and development proposals in the City.	**No Conflict**. The City has considered law enforcement, crime prevention, and fire safety concerns in its Project review. The building and parking structure would be accessible only to residents. The five spaces directly off Normandie Avenue will be made available for public parking. The Project proposes 10 guest parking spaces, which would be located near the townhome units. The Project would comply with all applicable Fire Code and fire safety regulations.
PS Goal 2: Protect the community from dangers associated with geologic instability, seismic hazards and other natural hazards.	
Policy PS 2.3: Require compliance with seismic safety standards in the Uniform Building Code.	**No Conflict.** The Project would be required to comply with the seismic safety standards in the Uniform Building Code.
Policy PS 2.4: Require geotechnical studies for all new development projects located in an Alquist-Priolo Earthquake Fault Zone or areas subject to liquefaction.	**No Conflict.** The Project site is near parcels within a liquefaction zone; therefore, a geotechnical study was prepared for the Project area; see **Appendix 4.4-1: Preliminary Geotechnical Investigation**.
PS Goal 4: Increase public awareness of crime and fire prevention, and emergency preparedness and procedures.	
Policy PS 4.3: Promote professional management of multi-family residential buildings.	**No Conflict.** The Project's proposed multi-family residential building would be professionally managed and the property managers would develop standard emergency preparedness plans and procedures.
Community Safety Element: Noise Plan	
N Goal 2: Incorporate noise considerations into land use planning decisions.	
Policy N 2.4: Require mitigation of all significant noise impacts as a condition of project approval.	**No Conflict**. The Project's potential for generating noise impacts on the surrounding environment both during construction and operation is addressed in **Section 4.9: Noise.** As concluded in **Section 4.9: Noise**, impacts associated with Project onsite construction activities would be significant and unavoidable despite the specified mitigation measures. In accordance with **Policy 2.4**, mitigation is required to minimize construction noise impacts. As to **Policies 2.5** and **2.6,** the Project would conduct interior noise level studies and achieve interior noise level standards as required by the Building Code. As
Policy N 2.5: Require proposed projects to be reviewed for compatibility with nearby noise-sensitive land uses with the intent of reducing noise impacts.	
Policy N 2.6: Require new residential developments located in proximity to existing commercial/ industrial operations to control residential interior noise levels as a	

General Plan Policy	Project Analysis
condition of approval and minimize exposure of residents in the site design.	to **Policy 2.9,** the Project would incorporate design features necessary to control residential interior noise levels and minimize exposure of residents to nearby mobile noise sources in accordance with the Building Code standards for interior noise levels.
Policy N 2.9: Encourage the creative use of site and building design techniques as a means to minimize noise impacts.	
N Goal 3: Develop measures to control non-transportation noise impacts.	
Policy N 3.2: Require compliance with noise regulations. Review and update Gardena's policies and regulations affecting noise.	**No Conflict.** The Project would be subject to compliance with the City's noise ordinance.
Policy N 3.3: Require compliance with construction hours to minimize the impacts of construction noise on adjacent land.	**No Conflict.** The Project would be subject to compliance with the City's regulations regarding permitted construction hours.
Source: City of Gardena. 2006. *Gardena General Plan 2006, Updated 2022*. https://www.cityofgardena.org/general-plan/. Accessed May 2023.	

DEIR Page 4.8-21

These approvals are needed for Project development, which proposes one seven-story apartment building with 328 apartments and ~~nine~~ ten three-story structures which include 75 townhome style units to replace the warehouse buildings currently on the property.

DEIR Section 4.9: Noise

DEIR Page 4.9-1

It is noted, the Noise Impact Study was based on an earlier Conceptual Site Plan, which has since been slightly modified ("February 2024 Conceptual Site Plan"). **Section 2.3: Project Characteristics** describes the proposed Project based on the February 2024 Conceptual Site Plan. A follow-up Project Modified Site Plan – Operational Noise Analysis ("Operational Noise Analysis") (Acoustical Engineering Services, March 7, 2024) was conducted (see **Appendix 4.9-2**) to analyze the February 2024 Conceptual Site Plan. The Operational Noise Analysis found the Noise Impact Study's significance conclusions remain valid and applicable to the February 2024 Conceptual Site Plan.

It is further noted, Kimley-Horn conducted a third-party review on behalf of the City of Gardena ("City") of the Project's Noise Impact Study; see **Appendix 4.9-1**.

DEIR Page 4.9-19

-Townhomes: ~~swimming~~ outdoor pool with BBQ and seating areas; dog park; club house; and ~~paseos with seating areas~~ playground.

DEIR Page 4.9-20

Concerning the February 2024 Conceptual Site Plan, the location of the townhomes pool (L1) changed to the eastern portion of the Project site to approximately 430 feet northeast of sensitive receptor R1 and approximately 140 feet west of sensitive receptor R3. Although the outdoor activity noise levels presented in **Table 4.9-8** were modelled using the pool's original location, the noise levels associated with the pool's modified location would be less or similar to those presented in the table. In its modified location, the pool would move further away from sensitive receptor R1, thus noise levels would be less than 46.6 dBA, resulting in a less than significant impact. In its modified location, the pool would move closer to sensitive receptor R3, however, as shown above in **Table 4.9-8**, the estimated noise from outdoor activities at receptor R2, which is the receptor nearest the modified pool location, is only 37.7 dBA, which would be far below the significance threshold of 67.3 dBA. The pool's relocation would not increase outdoor operational noise levels such that the significance threshold would be exceeded. Further, any increase in outdoor activity noise levels at sensitive receptor R3 would be masked by offsite mobile roadway noise along South Normandie Avenue. Thus, the Project's outdoor stationary noise source noise levels associated with the February 2024 Conceptual Site Plan would remain less than significant.

DEIR Page 4.9-29

Acoustical Engineering Services, Inc. (2024). *Project Modified Site Plan – Operational Noise Analysis*; see **Appendix 4.9-2**.

DEIR Section 4.10: Population and Housing

DEIR Page 4.10-10

The Project proposes to remove all existing onsite structures and, in their place, construct a 403-DU multi-family residential development with two types of residential uses: an apartment building with 328 DU at the Project site's northeastern portion; and 75 townhome-style units within ~~nine~~ ten buildings at the Project site's southern portion and along the western site boundary; see **Exhibit 2-4: Conceptual Site Plan**. **Table 2-45: Land Use Summary – Proposed Apartment Building** summarizes the apartment building's proposed floor areas and various proposed apartment product types (i.e., 68 studio, 194 one-bedroom, and 66 two-bedroom). **Table 2-~~5~~6: Land Use Summary – Proposed Townhomes** summarizes the townhome proposed floor areas and the various proposed townhome product types (i.e., ~~30 two-bedroom, 35~~ 65 three-bedroom, and 10 four-bedroom).

DEIR Section 4.12: Recreation

DEIR Page 4.12-6

The Normandie Crossing Specific Plan (Section VI. Landscape and Open Space Plan) specifies that the Project must provide a minimum of ~~16,400~~ 9,850 SF (50 SF ~~per unit~~ for 60 percent of the

units) of private open space and ~~22,698~~ 22,140 SF of outdoor common open space for the proposed apartments and 3,750 SF (50 SF per unit) of private space and ~~7,645~~ 8,680 SF of indoor and outdoor common open space for the proposed townhomes.

DEIR Page 4.12-6

Overall, the Project proposes approximately ~~50,493~~ 44,420 SF of open spaces, including approximately ~~20,150~~ 13,600 SF of private open space and approximately ~~30,343~~ 32,820 SF of common open space.

DEIR Page 4.12-6

~~Each~~ Subarea A ~~unit~~ would ~~be provided~~ provide a minimum of 50 SF of private open space for 60 percent of the units (197 units).

DEIR Page 4.12-6

Each Subarea B unit would be provided 50 SF of private open space (i.e., balconies and ~~roof decks~~ yards). The amenities proposed in Subarea B's public open spaces are as follow: swimming pool with BBQ and seating areas; dog park; club house; and ~~paseos with seating areas~~ a playground.

DEIR Section 4.13: Transportation

DEIR Page 4.13-1

It is noted, the CEQA Transportation Assessment and Local Transportation Assessment identified above were based on an earlier Conceptual Site Plan, which has since been slightly modified ("February 2024 Conceptual Site Plan"). **Section 2.3: Project Characteristics** describes the proposed Project based on the February 2024 Conceptual Site Plan. Given the February 2024 Conceptual Site Plan involved only minor modifications to the Project, the CEQA Transportation Assessment and Local Transportation Assessment significance conclusions remain valid and applicable to the February 2024 Conceptual Site Plan.

It is further noted, Kimley-Horn conducted a third-party review on behalf of the City of Gardena ("City") of the Project's CEQA Transportation Impact Assessment and Local Transportation Assessment; see **Appendix 4.13-1** and **Appendix 4.13-2**.

DEIR Page 4.13-16

- Removing approximately 170 linear feet of the spur track~~, which enters the project site and~~ on UPRR property that formerly ~~serves~~ served the southernmost industrial building (16911 Normandie Avenue);

DEIR Section 4.15: Utilities and Service Systems

DEIR Page 4.15-1

It is noted, the Water Resources Technical Report and Energy Assessment identified above were based on an earlier Conceptual Site Plan, which has since been slightly modified. However, from the time the reports were completed, the Conceptual Site Plan has not changed concerning Project elements which are foundational to these studies and which would inform Project-relevant data. **Section 2.3: Project Characteristics** describes the proposed Project elements based on the current February 2024 Conceptual Site Plan. Because the Conceptual Site Plan has not changed concerning Project elements foundational to the Water Resources Technical Report and Energy Assessment, their conclusions remain valid and applicable to the February 2024 Conceptual Site Plan. As such, updates to these studies to reflect the February 2024 Conceptual Site Plan are not warranted. Fuscoe Engineering provided a memorandum on March 7th, 2024 confirming that the conclusions from the Water and Wastewater Technical Report dated April 2023 remain valid and applicable to the February 2024 Conceptual Site Plan.

DEIR Page 4.15-25

The Project's estimated wastewater generation would be approximately ~~86,500~~ 88,000 gpd, or approximately ~~75,890~~ 77,390 gpd (0.08 mgd) over existing conditions; see **Table 4.15-7: Estimated Project Wastewater Generation**.

DEIR Page 4.15-25, **Table 4.156-7: Estimated Project Wastewater Generation**

Table 4.15-9: Estimated Project Wastewater Generation

Land Use	Dwelling Units	Average Generation Factor (gpd/DU)[1]	Total Wastewater Generation (gpd)
Apartments	68 Units – (Studio)	150	10,200
	194 Units – (1-BR)	200	38,800
	66 Units – (2-BR)	250	16,500
Townhomes	10 Units – (4-BR)	300	3,000
	~~35~~ 65 Units – (3-BR)	300	~~10,500~~ 19,500
	~~30 Units – (2- BR)~~	~~250~~	~~7,500~~
		Total Project	***~~86,500~~ 88,000***
		Total Existing[2]	***-10,610***
		Net Project	***~~+ 75,890~~ +77,390 (0.08 mgd)***

Note:
[1] Based on the sewer generation factors from the "Estimated Average Daily Sewage Flows for Various Occupancies" document from LA County Public Works.
[2] See **Table 4.15-4**.

Source: **Appendix 4.7-1**, Table 4.

DEIR Page 4.15-29

The Project's estimated water demand would total approximately ~~158,211~~ 159,266 gpd, or approximately ~~145,479~~ 146,534 gpd over existing conditions; see **Table 4.15-9: Estimated Project Water Demand**.

DEIR Page 4.15-30, **Table 4.15-9: Estimated Project Water Demand**

Table 4.15-10: Estimated Project Water Demand

Land Use	Units	Average Demand Factor (gpd/DU)[1]	Total Water Demand (gpd)
Apartments	68 Units – (Studio)	180	12,240
	194 Units – (1-BR)	240	46,560
	66 Units – (2-BR)	300	19,800
Townhomes	10 Units – (4-BR)	360	3,600
	~~35~~ 65 Units – (3-BR)	360	~~12,600~~ 23,400
	~~30 Units – (2- BR)~~	~~300~~	~~9,000~~
Pool(s)[2]	1 Unit @ - L1 Courtyard	13,614	13,614
	1 Units @ - L1 Courtyard	2,693	2,693
	1 Unit @ - L3 Courtyard	35,904	35,904
Landscaping	~~30,891~~ 20,432 SF	ETWU Method[3, 4]	~~2,200~~ 1,455
		Total Project	***~~158,211~~ 159,266 (~~177.2~~ 178.4 AFY)***
		Total Existing[5]	***-12,732***
		Net Project	***~~+ 145,479~~ +146,534 (~~+163~~ +164.1 AFY)***

Note:
[1] Based on 120% of the sewer generation factors from the "Estimated Average Daily Sewage Flows for Various Occupancies" document from LA County Public Works. See Golden State Water Company 2020 Urban Water Management Plan Southwest Service Area, page 1-2.
[2] Pools vary in size: therefore, pools have different water consumption values per unit.
[3] Demand based on Estimated Total Water Use equation: (Eto*plant factor*landscaped area* 0.62)/irrigation efficiency. Utilizing CIMIS Reference Evapotranspiration Zones Map ET of 46.6 in/yr, and a conservative plant factor of 0.7 and irrigation efficiency of 0.81 proposed condition.
[4] The Project's proposed landscaping was updated to total 30,205 SF (See **Section 3.0: Project Description**) after completion of this analysis. Because the Project's updated landscaping would generate less water demand, this analysis conservatively assumes 30,891 SF of proposed landscaping for purposes of determining water demand.
[5] See **Table 4.15-1**.

Source: **Appendix 4.15**, Table 3.

DEIR Page 4.15-31

The Project's increase in water demand of ~~145,479~~ 146,534 gpd (~~163~~ 164.1 AFY) represents approximately 6.5% of the UWMP's forecast increase in demand between 2025 and 2045.

DEIR Page 4.15-31

As discussed above, the Project's estimated wastewater generation would be approximately ~~86,500~~ 88,000 gpd, or approximately ~~75,890~~ 77,390 gpd (0.08 mgd) over existing conditions; see **Table 4.15-7**.

DEIR Page 4.15-31

The Project's estimated wastewater generation of ~~75,890~~ 77,390 gpd (~~0.076~~ 0.08 mgd) comprises less than 0.06 percent of JWPCP's remaining available capacity of 156.9 mgd.

DEIR Section 4.16: Aesthetics

DEIR Page 4.16-10

- At 16964 ~~West 179th Street~~ Brighton Avenue, rezone from General Industrial (M-2) Zone to Single-Family Residential (R-1) Zone;

DEIR Section 5.0: Other CEQA Considerations

DEIR Page 5-3

The Project would remove all onsite uses to develop a 403-DU multi-family residential development with two types of residential uses: an apartment building with 328 DU at the Project site's northern portion; and 75 townhome-style units within ~~nine~~ ten buildings at the Project site's southern portion and along the western site boundary.

DEIR Section 6.0: Alternatives To The Proposed Project

DEIR Page 6-2

The Project proposes a 403-dwelling unit (DU) multi-family residential development with two types of residential uses: an apartment building with 328 DU at the Project site's northern portion; and 75 townhome-style units within ~~nine~~ ten buildings at the Project site's southern portion and along the western site boundary.

DEIR Page 6-16, **Table 6-1: Comparison Between Proposed Project and No Project/Existing Land Use Designation Alternative**

Table 6-1: Comparison Between Proposed Project and No Project/Existing Land Use Designation Alternative

Description	Apartment Building (DU)[1]	Townhomes (DU)[1]	Density (DU/AC)[1]	Floor Area (SF)[1]
Proposed Project	328	75	77	~~429,000~~ 429,578 (Residential)
No Project/Existing Land Use Designation Alternative				~~200,310~~ 228,690 (Industrial)
Difference	*-328*	*-75*		*-200,888*
% Difference	*-100%*	*-100%*		*~~-47%~~ -53%*
Note: 1. DU = dwelling units; AC = acre; SF = square feet.				

DEIR Page 6-23

The Project proposes an apartment building approximately 90 feet tall and ~~nine~~ ten townhome buildings approximately 40 feet tall, as measured from the finished floor (i.e., the level of the finished floor on the ground level) of the roof's highest point.

DEIR Page 6-25, **Table 6-2: Comparison Between Proposed Project and Reduced Density Alternative**

Table 6-2: Comparison Between Proposed Project and Reduced Density Alternative

Description	Apartment Building (DU)[1]	Townhomes (DU)[1]	Density (DU/AC)	Height of Building (Stories)	Floor Area (SF)
Proposed Project	328	75	77	7	~~429,000~~ 429,578
Reduced Density Alternative	192	75	51	5	253,110
Subtotal Difference	*-136*	*-0*			
Total Difference	*-136*			*-2*	*~~-175,890~~ -176,468*
% Difference	*-34%*				*-41%*
Note: DU = dwelling units; and AC = acre.					

DEIR Page 6-25

The Reduced Density Alternative proposes approximately 34 percent fewer DU than the Project and less floor area (approximately 253,110 SF compared to approximately ~~429,000~~ 429,578 SF), thus, proportionately fewer construction emissions as presented in **Table 4.1-5** would occur.

DEIR Appendix 4.13-2: Local Transportation Assessment

Page 9

3.3.1 Freeway Ramp & Intersection Queueing at State Facilities

As detailed below in section 3.7, based on the Project's estimates, trip generation and distribution, few trips are expected at the I-405 off-ramps to Normandie/190th or the I-110 off-ramps to Redondo Beach Boulevard (<25 peak hour trips at each location). Therefore, the Project is not expected to add two or more car lengths to these off-ramp queues during peak hours, exacerbate potentially unsafe ramp conditions at these locations (if such conditions exist or are projected to occur in the opening year of the Project), and analysis is not needed. At the intersection of SR-91 and Vermont Avenue, Project traffic is expected to primarily be eastbound and westbound through movements since primary Project access is from Normandie Avenue, where most turning movements would occur. As such, the Project is not expected to add substantial traffic to any left or right-turning movements at the intersection of SR-91 and Vermont Avenue, and the Project is not expected to materially affect the utilization of turn pocket storage that would lead to an impedance of through traffic. Therefore, no further analysis is needed related to queueing at these locations.

3.3.2 Pedestrian & Bicycle Volumes at State Facilities

As detailed below in section 3.7, 5% of the Project's net new trips are expected to be walking or biking in nature, which may also include a subsequent trip on transit. This amounts to less than 10 trips during either peak hour in total. Most of these non-transit biking and walking trips are expected to be local in nature, accessing nearby schools and businesses within 0.5 miles of the Project Site. Substantial bicycle and pedestrian trips generated by the Project are not expected to occur at the SR-91 and Vermont Avenue, I-405 off-ramps at Normandie/190th, or I-110 off-ramps at Redondo Beach Boulevard intersections given how far away they are from the Project Site. SR-91 and Vermont Avenue is located 0.8 miles from the Project Site, while the other two intersections are located over one mile from the Project Site. Because these locations are outside of the Project Study Area, Multi-Modal Conflict Analyses and/or Complete Street Access considerations should not be necessary.

4.0 MITIGATION MONITORING AND REPORTING PROGRAM

The California Environmental Quality Act (CEQA) requires that all public agencies establish monitoring and/or reporting procedures for mitigation adopted as conditions of approval in order to mitigate or avoid significant environmental impacts. This Mitigation Monitoring and Reporting Program (MMRP) has been developed to provide a vehicle by which to monitor mitigation measures (MMs) outlined in the Gardena Normandie Crossing Specific Plan Project ("Project") Environmental Impact Report (EIR). The Project MMRP has been prepared in conformance with Public Resources Code § 21081.6 and City of Gardena ("City") monitoring requirements. Specifically, Public Resources Code § 21081.6 states:

> (a) *When making findings required by paragraph (1) of subdivision (a) of Section 21081 or when adopting a mitigated negative declaration pursuant to paragraph (2) of subdivision (c) of Section 21080, the following requirements shall apply:*
>
> *(1) The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation. For those changes which have been required or incorporated into the project at the request of a responsible agency or a public agency having jurisdiction by law over natural resources affected by the project, that agency shall, if so requested by the lead or responsible agency, prepare and submit a proposed reporting or monitoring program.*
>
> *(2) The lead agency shall specify the location and custodian of the documents or other material which constitute the record of proceedings upon which its decision is based.*

State CEQA Guidelines § 15097 provides clarification of mitigation monitoring and reporting requirements and guidance to local lead agencies on implementing strategies. The reporting or monitoring program must be designed to ensure compliance during project implementation. The City is the Lead Agency for the Project and is therefore responsible for ensuring MMRP implementation. The MMRP has been drafted to meet Public Resources Code § 21081.6 requirements as a fully enforceable monitoring program.

The MMRP is comprised of the Mitigation Program and includes measures to implement and monitor the Mitigation Program. The MMRP defines the following for each MM:

- **Definition of Mitigation.** The Mitigation Measure contain the criteria for mitigation, either in the form of adherence to certain adopted regulations or identification of the steps to be taken in mitigation.

- **Responsible Party or Designated Representative.** Unless otherwise indicated, an applicant would be the responsible party for implementing the mitigation, and the City of Gardena or designated representative is responsible for monitoring the performance and implementation of the mitigation measures. To guarantee that the mitigation will not be inadvertently overlooked, a supervising public official acting as the Designated Representative is the official who grants the permit or authorization called for in the performance. Where more than one official is identified, permits or authorization from all officials shall be required.

- **Time Frame.** In each case, a time frame is provided for performance of the mitigation or the review of evidence that mitigation has taken place. The performance points selected are designed to ensure that impact-related components of project implementation do not proceed without establishing that the mitigation is implemented or ensured. All activities are subject to the approval of all required permits from agencies with permitting authority over the specific activity.

The numbering system in the table corresponds with the Draft EIR numbering system. The MMRP table “Verification” column will be used by the parties responsible for documenting when the mitigation measure has been completed. The City will complete ongoing documentation and mitigation compliance monitoring. The completed MMRP and supplemental documents will be kept on file at the City Community Development Department.

NORMANDIE CROSSING SPECIFIC PLAN PROJECT
MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
CULTURAL RESOURCES					
MM CUL-1: Inadvertent Discovery of an Archaeological Resource. Before ground disturbing activities are initiated on the Project site, a qualified archaeologist shall be retained to conduct a Pre-construction Worker Training on the types of unanticipated resources that could be encountered during construction, based on the site's history. This archaeologist may also be retained to ensure prompt assessment in the event that unanticipated cultural resources are encountered during construction.	Prior to any Ground Disturbance	Notification to Construction Personnel	General Contractor		
If archaeological resources are exposed during construction, work within 50 feet of the find must stop until a qualified archaeologist can evaluate the significance of the find. Construction activities may continue in other areas. If the discovery proves significant under CEQA (14 CCR 15064.5[f]; PRC 21082), additional work such as testing, or data recovery may be warranted.	During Construction, If an Archaeological Resource is Discovered	Archaeological Resource Evaluation	Qualified Archaeologist		

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
GEOLOGY, SOILS, AND PALEONTOLGICAL RESOURCES					
MM GEO-1: Monitor for Paleontological Resources: Monitoring shall be conducted by a Paleontological Monitor, defined as one who meets the SVP standards for a Paleontological Resource Monitor. The Paleontological Monitor shall be under the supervision of the Project Paleontologist. As defined in the PRMMP, Paleontological monitoring shall include inspection of exposed sedimentary units during active excavations within sensitive geologic sediments that occur in previously undisturbed sediment, which has been estimated as any portion of the Project site where excavation exceeds 0.9 m (3.0 feet) in depth. The frequency of monitoring shall be based on consultation with or periodic inspection by the Project Paleontologist and shall depend on the rate of excavation and grading activities and the materials being excavated.	During Ground Disturbance	Paleontological Resources Monitoring	Paleontological Monitor		
HAZARDOUS MATERIALS & WASTES					
MM HAZ-1: Construction Management Plan. Prior to issuance of any demolition permit for the onsite structures, a construction management plan addressing procedures and requirements for responding to disturbance of undocumented contaminated soil shall be prepared and submitted to the City for review and approval.	Prior to Demolition Permit Issuance	Prepare a Construction Management Plan	Community Development Director		
MM HAZ-2: Engineered Vapor Mitigation and Ventilation. Prior to commencement of construction activities, the City of Gardena Building Department shall review the building plans to verify that an engineered vapor measure (such as an impermeable membrane or equivalent) is included in the design of all townhomes and that the apartment parking structures include sufficient ventilation to minimize accumulation of VOCs on the	Prior to Construction Activities	Verification of an engineered vapor measure within the design of all townhomes and apartment parking structures.	Building and Safety Department Chief Building Official		

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
Project site. The impermeable vapor membrane shall not underlay non-slab areas, such as landscaping and the dog run area, because these spaces are not enclosed. The City of Gardena Building Department shall have oversight/sign-off responsibility for the vapor barrier.					
NOISE					
MM NOI-1: Construction Equipment Noise. Prior to issuance of any Demolition or Grading Permit, the Public Works Department shall verify that the Project plans and specifications include provisions that require all power construction equipment (including combustion engines), fixed or mobile to be: 1) equipped with state-of-the-art noise shielding and muffling devices (consistent with manufactures' standards); and 2) properly maintained to ensure that no additional noise, due to worn or improperly maintained parts, would be generated.	Prior to issuance of any demolition or grading permit	Verification of provisions that require all power construction equipment to be equipped with noise shielding and muffling devices and properly maintained	Public Works Director		
MM NOI-2: Construction Noise. A temporary and impermeable sound barrier shall be provided along the Project northern, southern, and western property line. The temporary sound barrier shall be minimum 10-foot high and provide minimum 12 dBA noise reduction, and shall have a minimum Sound Transmission Class rating of STC-25, such as, acoustical barrier blanket (with STC-25 rating) or 3/4" thick exterior grade plywood.	Prior to and During Construction	Provide a Temporary and Impermeable Sound Barrier	Community Development Director		
MM NOI-3: Construction Vibration Impacts. The use of large construction equipment (e.g., large bulldozer greater than 400 horsepower and/or loaded trucks) shall be a minimum of 45 feet away from the off-site residence adjacent to the Project site (receptor R1) (16964 Brighton Ave).	During Construction	Provide a minimum 45-foot buffer away from residences adjacent to the Project site	Community Development Director		

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
TRIBAL CULTURAL RESOURCES					
MM TCR-1: Retain a Native American Monitor Prior to Commencement of Ground-Disturbing Activities. A. The Applicant/lead agency shall retain a Native American Monitor from or approved by the Gabrieleño Band of Mission Indians – Kizh Nation. The monitor shall be retained prior to the commencement of any "ground-disturbing activity" for the subject Project at all Project locations (i.e., both on-site and any off-site locations that are included in the Project description/definition and/or required in connection with the Project, such as public improvement work). "Ground-disturbing activity" shall include, but is not limited to, demolition, pavement removal, potholing, auguring, grubbing, tree removal, boring, grading, excavation, drilling, and trenching. B. A copy of the executed monitoring agreement shall be submitted to the lead agency prior to the earlier of the commencement of any ground-disturbing activity, or the issuance of any permit necessary to commence a ground-disturbing activity. C. The monitor will complete daily monitoring logs that will provide descriptions of the relevant ground-disturbing activities, the type of construction activities performed, locations of ground- disturbing activities, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribe. Monitor logs will identify and describe any discovered TCRs, including but not limited to, Native American cultural and historical artifacts, remains, places of significance, etc., (collectively, tribal cultural resources, or "TCR"), as well as any discovered Native	Prior to any Ground Disturbance During Construction Phases Involving Ground-Disturbing Activities	Contract a Tribal Monitor/Consultant Copy of executed monitoring agreement Tribal Cultural Resources Monitoring & Complete Daily Monitoring Logs	Community Development Director Tribal Monitor/Consultant		

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
American (ancestral) human remains and burial goods. Copies of monitor logs will be provided to the Applicant/lead agency upon written request to the Tribe. D. On-site tribal monitoring shall conclude upon the latter of the following: (1) written confirmation to the monitor from a designated point of contact for the Applicant/lead agency that all ground-disturbing activities and phases that may involve ground-disturbing activities on the Project site or in connection with the Project are complete; or (2) a determination and written notification by the monitor to the Applicant/lead agency that no future, planned construction activity and/or development/construction phase at the Project site possesses the potential to impact TCRs.					
MM TCR-2: Unanticipated Discovery of Human Remains and Associated Funerary Objects. A. Native American human remains are defined in PRC 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in Public Resources Code § 5097.98, are also to be treated according to this statute. B. If human remains and/or grave goods are discovered or recognized on the Project site, then all construction activities shall immediately cease within 200 feet of the discovery. Health and Safety Code § 7050.5 dictates that any discoveries of human skeletal material shall be immediately reported to the County Coroner and all ground-disturbing activities shall immediately halt and shall remain halted until the coroner has determined the nature of the remains. If the coroner recognizes the human remains to be those of a Native American or has reason to believe they are Native American, he or she shall contact, by telephone within 24 hours, the	During Construction, Upon Discovery of any human remains or grave goods	Telephone communication with the Native American Heritage Commission within 24 hours	County Coroner Native American Heritage Commission Qualified Tribal Monitor/Consultant		

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
Native American Heritage Commission, and Public Resources Code § 5097.98 shall be followed. C. Human remains and grave/burial goods found with such remains shall be treated alike per California Public Resources Code § 5097.98(d)(1) and (2). D. Construction activities may resume in other parts of the Project site at a minimum of 200 feet away from discovered human remains and/or burial goods, if the monitor determines in its sole discretion that resuming construction activities at that distance is acceptable and provides the Project manager express consent of that determination (along with any other mitigation measures the monitor and/or archaeologist deems necessary). (CEQA Guidelines § 15064.5(f).) E. Any discovery of human remains/burial goods shall be kept confidential to prevent further disturbance.					
MM TCR-3: Procedures for Burials and Funerary Remains. This mitigation measure shall only apply if the Gabrielino Band of Mission Indians-Kizh Nation is designated the Most Likely Descendant ("MLD") by the NAHC: A. The Koo-nas-gna Burial Policy shall be implemented. To the Tribe, the term "human remains" encompasses more than human bones. In ancient as well as historic times, Tribal Traditions included, but were not limited to, the preparation of the soil for burial, the burial of funerary objects with the deceased, and the ceremonial burning of human remains. B. If the discovery of human remains includes four or more burials, the discovery location shall be treated as a cemetery and a separate treatment plan shall be created. C. The prepared soil and cremation soils are to be treated in the same manner as bone fragments that remain intact.	During Construction, if an Unanticipated Discovery, and the Gabrieleno Band of Mission Indians – Kizh Nation is Designated Most Likely Descendant If there are four or more burials	Implement Koo-nas-gna Burial Policy Creation of a cemetery treatment plan	Tribal Monitor/Consultant		

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
Associated funerary objects are objects that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later; other items made exclusively for burial purposes or to contain human remains can also be considered as associated funerary objects. Cremations will either be removed in bulk or by means as necessary to ensure complete recovery of all sacred materials. D. In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains will be covered with muslin cloth and a steel plate that can be moved by heavy equipment placed over the excavation opening to protect the remains. If this type of steel plate is not available, a 24-hour guard should be posted outside of working hours. The Tribe will make every effort to recommend diverting the Project and keeping the remains in situ and protected. If the Project cannot be diverted, it may be determined that burials will be removed. E. In the event preservation in place is not possible despite good faith efforts by the Applicant/developer and/or landowner, before ground-disturbing activities may resume on the Project site, the landowner shall arrange a designated site location within the footprint of the Project for the respectful reburial of the human remains and/or ceremonial objects. F. Each occurrence of human remains and associated funerary objects will be stored using opaque cloth bags. All human remains, funerary objects, sacred objects and objects of cultural patrimony will be removed to a secure container on site if possible. These items should be retained and reburied within six months of recovery. The site of reburial/repatriation shall be on the Project site but at a location agreed upon	If discovered remains cannot be fully documented and recovered on the same day If preservation in place is not possible	Covering of remains with muslin cloth and a steel plate to protect remains -or- 24-hour guard outside working hours Designation of site location within the footprint of the Project for reburial	Gabrielino Band of Mission Indians-Kizh Nation Native American Heritage Council		

MITIGATION MEASURES (MM)	IMPLEMENTATION TIMING	MONITORING/ REPORTING METHODS	RESPONSIBLE FOR APPROVAL/ MONITORING	VERIFICATION	
				DATE	INITIALS
between the Tribe and the landowner at a site to be protected in perpetuity. There shall be no publicity regarding any cultural materials recovered. G. The Tribe will work closely with the Project's qualified archaeologist to ensure that the excavation is treated carefully, ethically, and respectfully. If data recovery is approved by the Tribe, documentation shall be prepared and shall include (at a minimum) detailed descriptive notes and sketches. All data recovery data recovery-related forms of documentation shall be approved in advance by the Tribe. If any data recovery is performed, once complete, a final report shall be submitted to the Tribe and the NAHC. The Tribe does NOT authorize any scientific study or the utilization of any invasive and/or destructive diagnostics on human remains.					

Appendix 4.7-2: Water Resources Analysis

IRVINE
SAN DIEGO
ONTARIO
LOS ANGELES

March 8, 2024

To: Fred Shaffer
16911 Normandie Associates, LLC
134 Lomita Street
El Segundo, CA 90245

RE: 16911 S Normandie Water Resources Technical Report and updated Entitlements Package dated February 27, 2024

Mr. Shaffer,

Based upon the recent updates to the Entitlements package for the Normandie Crossing Apartment & Townhomes Project (16911 S Normandie Ave., Gardena, CA), Fuscoe Engineering has taken the efforts to compare the impacts of the site plan change versus the hydrology study. This study was part of the Water Resources Technical Report performed by Fuscoe Engineering, dated April 4, 2023.

Summary of landscape/ planting area comparison:

November of 2022:	31,127 SF
Current February 2024:	20,432 SF
Net decrease of:	10,695 SF

Running through the hydrology calculations, the total flowrate for the project site is still lower than compared to the existing conditions. This conclusion can be derived from the fact that the % imperviousness for the existing condition is 99.7% and for the proposed 91.1%, hence there is no net increase of imperviousness as it relates to the recent site plan change.

The updated site plan, as noted hereon, does not change the conclusion stated in the Water Resources Resource report (April 4, 2023).

FUSCOE ENGINEERING, INC.

03.8.2024

Samson Kawjaree, PE

Appendix 4.9-2: Operational Noise Analysis

AES
ACOUSTICAL ENGINEERING SERVICES

Memorandum

To	Fred Shaffer / SAIKO Investment Corp	Project number	2022101
cc		File reference	Memo-16911 Normandie
From	Sean Bui, P.E.	Date	March 7, 2024
Subject	16911 Normandie Project Project Modified Site Plan – Operational Noise Analysis		

This memo provides the results of the review of the 16911 Normandie Project (Project) updated Site Plan to determine whether the proposed modifications (Modified Project) could result in any new or more severe noise impacts than analyzed in the Project Noise Impact Study Report (AES report dated October 2023). Similar to the Project, the Updated Project includes several common outdoor spaces at Level 1, Level 3, and Level 7, as follows:

- Apartments: a dog park at Level 1, an outdoor pool and courtyards at Level 3, and an open deck at Level 7; and
- Townhomes: an outdoor swimming pool at Level 1, open spaces, and a dog park.

The locations of the outdoor spaces under the Modified Project would be similar to the Project with some minor changes, including the dog park and the pool area at Level 1. Noise sources associated with the outdoor spaces, including the open spaces, courtyards, open deck, pool areas, and dog park would include noise from people gathering and conversing, and dog run. Noise levels from people gathering are dependent on the number of people, which is dependent on the total number of people gathering. Since the total area of the outdoor spaces (including dog parks) for the Modified Project would be similar to the Project, the noise levels associated with people gathering and dog run under the Modified Project would be similar to the Project. In addition, the change of the pool location under the Modified Project would not change the significance conclusions in the original Noise Impact Study Report dated October 2023. Therefore, noise impacts associated with the outdoor spaces under the Modified Project would remain less than significant, as for the Project.

Appendix 4.13-2: Local Transportation Assessment

Normandie Crossing Specific Plan

Local Transportation Assessment

Prepared for:
16911 Normandie Associates, LLC

August 2023

LB21-0048

FEHR PEERS

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Appendices

1. Introduction

This report presents the results of the non-CEQA Local Transportation Assessment (LTA) conducted by Fehr & Peers for the proposed Normandie Crossing Specific Plan ("Project") in the City of Gardena. The analysis identifies the effects of the proposed project on the surrounding transportation system. This LTA was conducted in accordance with the requirements of the City of Gardena's Senate Bill 743 Implementation Transportation Analysis Updates. While CEQA requirements have changed and level of service (LOS) no longer constitutes CEQA impacts, an LTA may inform decision makers on the overall effects of a project.

1.1 Project Description

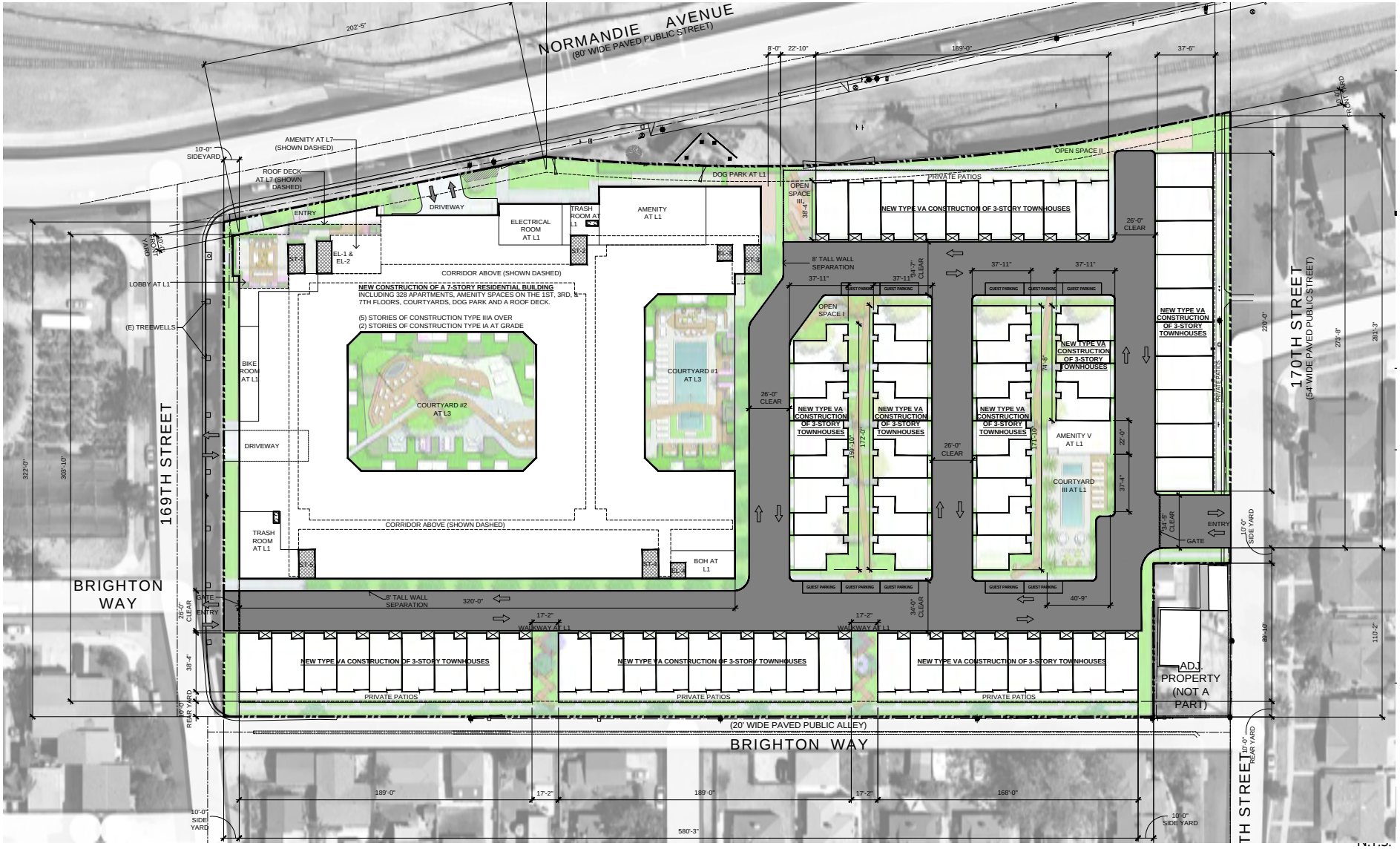
The proposed Project is located at 16829, 16835, and 16907 Normandie Avenue, bound by Normandie Avenue to the east, 170th Street to the south, Brighton Way (alleyway) to the west, and 169th Street to the north. The Project will replace 106,100 square feet (sf) of active warehousing uses with 75 low-rise townhomes and 328 dwelling units within a single 7-story mid-rise apartment building. Access to the Project Site will be provided by the following four driveways:

- Driveway 1 serves the apartment building's parking garage from 169th Street, west of Normandie Avenue.
- Driveway 2 is a right-in/right-out only driveway that also serves the apartment building's parking garage from southbound Normandie Avenue. The Project will install a 125-foot median along Normandie Avenue surrounding the Union Pacific railroad tracks (north and south of the tracks) to prevent left-turns into and out of the Project from Normandie Avenue.
- Driveway 3 serves the townhomes from 170th Street.
- Driveway 4 also serves the townhomes from 169th Street.

Internal roadways link Driveways 3 and 4 to all townhomes, but do not connect to the apartment building garage. The Project will provide 399 parking spaces within an enclosed garage on the first two levels of the apartment building and 150 attached garage parking spaces, with 10 guest parking spaces for the townhomes. **Figure 1** shows the Project site plan.

1.2 Organization of the Report

This report is divided into five chapters, including this introduction. Chapter 2 presents the existing setting in which the Project is located. Chapter 3 presents the intersection operations analysis. Chapter 4 provides a residential street segment analysis. Chapter 5 summarizes the results of the study.



N.T.S.

Figure 1

Project Site Plan
Normandie Apartments Project

2. Existing Setting

This chapter describes the existing setting for transportation, including a discussion of existing roadways, bicycle and pedestrian facilities, transit service, and roadway safety conditions. The transportation system serving this area is a complex, built-out, multimodal network designed to carry both people and goods, consisting of roadways, bicycle facilities, sidewalks, and public transit (via bus). The roadway and sidewalk network in the vicinity of the Project site is generally well-developed and complete.

2.1 Existing Roadway Facilities

The street network in Gardena is primarily gridded with good connectivity. Arterial streets in the study area generally provide two to three vehicle travel lanes in each direction, with left-turn pockets at most signalized intersections and right-turn pockets at some intersections. Posted travel speeds in the study area range from 25 to 45 miles per hour (mph). As described in detail below and illustrated in **Figure 2**, regional access to the Project site is provided by Normandie Avenue and a network of arterial and collector streets. The arterial street network that serves the proposed project area includes Artesia Boulevard. The collector streets include Normandie Avenue, Gardena Boulevard, and 166th Street. The local streets include 169th Street and 170th Street. The following describes the key roadway facilities that serve the project site:

- Normandie Avenue – Normandie Avenue is a north/south Major Collector with two lanes in each direction that runs through the City of Gardena. Normandie Avenue is designated as a truck route within the City of Gardena. Left-turn lanes are provided at major intersections. The posted speed limit is 35 mph. On-street parking is prohibited on both sides of the street. The Union Pacific Torrance Branch right-of-way (ROW) crosses Normandie Avenue and runs along the eastern frontage of the Project Site.

- Artesia Boulevard – Artesia Boulevard is an east/west Arterial with three to four lanes in each direction that is under local jurisdiction. Artesia Boulevard transitions into SR-91 (Gardena Freeway) east of Vermont Avenue under Caltrans jurisdiction. Artesia Boulevard contains a raised median and the posted speed limit is 45 mph. There are left-turn pockets at all intersections. On-street parking is prohibited on both sides of Artesia Boulevard.

- Gardena Boulevard – Gardena Boulevard is an east-west Collector that runs through Gardena with a short jog at Normandie Avenue. Gardena Boulevard has one lane in each direction and a posted speed of 30 mph east of Normandie Avenue and 25 mph west of Normandie Avenue. On- street parking is permitted on both sides of the street, with angled parking provided east of Normandie Avenue.

- 166th Street – 166th Street is an east-west street that runs from Gramercy Place in Torrance to Berendo Avenue in Gardena. 166th Street is a local street except for the segment between Western

Avenue and Normandie Avenue, where it is a Collector. On- street parking is permitted on both sides of the street, and the posted speed limit is 30 mph west of Normandie Avenue and 25 mph east of Normandie Avenue. A raised median is provided east of Normandie Avenue that contains the right of way and double tracks for the Union Pacific Railroad Torrance Branch.

- 169th Street – 169th Street is an east/west local street that runs from Denker Avenue to Normandie Avenue with one lane in each direction. On-street parking is generally provided on both sides of 169th Street.
- 170th Street – 170th Street is an east/west local street that runs from Denker Avenue to Normandie Avenue where it dead ends and Normandie Avenue to Vermont Avenue with one lane in each direction. 170th Street west of Normandie Avenue does not connect to Normandie Avenue or the segment east of it. On-street parking is generally provided on both sides of 170th Street and the posted speed limit is 25 mph.
- Brighton Way – Brighton Way is a north/south alleyway that runs from 169th Street to 170th street with a shared lane for each direction. On-street parking is not provided.

2.2 Existing Pedestrian and Bicycle Facilities

Existing sidewalks are provided along the project frontage and within a continuous and complete pedestrian network in the surrounding area. Sidewalks along the south side of 169th Street are discontinuous for a short segment from just west of the project site to Halldale Avenue. Sidewalks are also not present on Brighton Way, which is a public alleyway. Marked crosswalks, curb ramps, and pedestrian signals are provided at the nearest signalized intersections along Normandie Avenue at 166th Street and 170th Street, which provides direct access to bus transit stops and surrounding land uses.

Separated or protected bicycle facilities are not currently provided along Normandie Avenue along the project site. According to the South Bay Bicycle Master Plan,[1] Normandie Avenue is designated as a bike route (Class III) from 182nd Street to 170th Street. Additionally, 166th Street, 170th Street and Gardena Boulevard are designated as bike routes (Class III), but not on segments directly adjacent to the project site.

The following future Bicycle Friendly Street segment is proposed in the South Bay Bicycle Master Plan as a prioritized project in Gardena that is directly adjacent to the project site and may be implemented by the City in the future:

- 170th Street from Denker Avenue to Vermont Avenue (0.8 miles)

[1] Alta Planning + Design, South Bay Bicycle Master Plan prepared for Los Angeles County Bicycle Coalition and South Bay Bicycle Coalition, available at https://southbaybicyclecoalition.org/sbbcplus-master-plan/.

2.3 Existing Public Transit Facilities

The project site is located within a ¼-mile of various bus stops and is served by transit service via the City of Gardena's Transit Service, GTrans. The Project is also located approximately 0.9 miles from the Harbor Gateway Transit Center. The following bus routes provide service within a ¼-mile walking distance of the project site:

- **Route 1X (GTrans)**: Connects the LA Metro C Line Redondo Beach Station and the City of Gardena to Downtown Los Angeles. This line runs express service between Rosecrans Avenue and Downtown Los Angeles. Bus stops within a ¼ mile include: 166th Street and Brighton Avenue (eastbound and westbound).
- **Route 4 (GTrans)**: Connects the Harbor Gateway Transit Center to various destinations in Gardena and Hawthorne via Normandie Avenue, 135th Street, Van Ness Avenue, and Marine Avenue. Bus stops within a ¼-mile include: Normandie Avenue and 170th Street (southbound and northbound). Service on this line was discontinued due to the COVID-19 Pandemic and it is not known at this time whether service would be restarted.

3. Intersection Operations Analysis

3.1 Traffic Analysis Methodology

3.1.1 Intersections

The analysis of roadway operations performed for this study is based on procedures presented in the *Highway Capacity Manual 6th Edition* (HCM 6), published by the Transportation Research Board in 2016. The operations of roadway facilities are described with the term level-of-service (LOS). LOS is a qualitative description of traffic flow based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, which is the least congested operating conditions, to LOS F, which is the most congested operating conditions. LOS E represents "at-capacity" operations. Operations are designated as LOS F when volumes exceed capacity, resulting in stop-and-go conditions. The methodologies for signalized and unsignalized intersections are described below. The City of Gardena no longer has CEQA significant impact thresholds according to intersection LOS in accordance with state law.

The method described in Chapter 19 of HCM 6 was used to prepare the LOS calculations for the signalized and unsignalized study intersections. This LOS method analyzes a signalized intersection's operation based on average control delay per vehicle. Control delay alone is used to characterize LOS for the entire intersection or an approach. Control delay includes the initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay for intersections was calculated using the Synchro 11 analysis software and is correlated to a LOS designation as shown in **Table 1**. For unsignalized intersections, the control delay and LOS for the worst performing approach is used.

In addition, intersections can be evaluated by the Project's effects on queuing. Although not typically required by the City of Gardena, a turn lane queuing analysis was performed at the unsignalized intersection of Normandie Avenue and 169th Street.

3.1.2 Residential Street Segments

The analysis of residential street segments is required by the City of Gardena where projects have direct access to neighborhood residential streets. This assessment is conducted by estimating the number of project trips expected to travel on studied street segments on a daily basis and during the AM and PM peak hours. This assessment will allow the City to consider the need (if any) for relevant traffic calming projects.

3.2 Intersection Analysis Scenarios

The operations for the study intersections were evaluated during the weekday AM and PM peak hours for the following scenarios:

- Existing (2022) Conditions – The analysis of existing traffic conditions was based on 2022 intersection traffic counts collected while local schools were in session. Existing conditions are assumed to include the current warehouse use occupying the site. This analysis is intended to provide a basis for the remainder of the study. It also assumes that traffic levels around the Los Angeles region that were affected by the COVID-19 Pandemic have stabilized in 2022 since schools have resumed in-person instruction and remaining restrictions have been lifted.

- Opening Year (2027) No Project Conditions – Future traffic volumes for the anticipated opening year of the project were projected by increasing the Existing (2022) traffic volumes using an annual growth factor of one percent per year to account for ambient growth in the area, as well as the inclusion of traffic from specific related development projects. This scenario does not include any project-generated traffic.

- Opening Year (2027) Plus Project Conditions – Traffic projections from Opening Year (2027) No Project Conditions plus the addition of project-generated traffic.

3.2.1 Analysis Criteria

The analysis of future conditions compares the "no project" condition against conditions that include project-generated traffic assuming full build-out and occupancy. This approach determines whether the addition of project traffic is expected to worsen delay beyond the City's non-CEQA LOS requirements on local roadways. The City of Gardena's non-CEQA analysis criteria for signalized intersections is as follows:

- To the extent feasible, maintain traffic flows at non-residential, signalized intersections at LOS E during peak rush hours.
- To the extent feasible, maintain traffic flows at residential signalized intersections at LOS D during peak rush hours.

The City of Gardena does not have established criteria to evaluate unacceptable levels of traffic on residential street segments. Also, the City requires that projects be reviewed for potential conflicts with plans and policies related to active transportation modes (walking, biking, transit).

TABLE 1
HCM LEVEL OF SERVICE DEFINITIONS

LOS	Definition	Signalized Delay (Seconds)	Unsignalized Delay (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle length.	≤ 10.0	≤ 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 to 20.0	>10.0 to 15.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 to 35.0	>15.0 to 25.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 to 55.0	>25.0 to 35.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0	>35.0 to 50.0
F	Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	> 80.0	>50.0

Source: Highway Capacity Manual (Transportation Research Board, 2016).

3.3 Study Locations

The scope and selection of study intersections and residential street segments was developed in conjunction with City staff and documented in the LTA Scoping Memorandum, dated February 7, 2022. Five (5) study intersections and two (2) residential street segments were selected to be analyzed, as shown in **Table 2** and illustrated in **Figure 2**. All study intersections except the intersection of Normandie Avenue and 170th Street are considered non-residential signalized intersections. The LTA Scoping Memorandum can be found in **Appendix A**.

3.3.1 Freeway Ramp & Intersection Queueing at State Facilities

As detailed below in section 3.7, based on the Project's estimates trip generation and distribution, few trips are expected at the I-405 off-ramps to Normandie/190th or the I-110 off-ramps to Redondo Beach Boulevard (<25 peak hour trips at each location). Therefore, the Project is not expected to add two or more car lengths to these off-ramp queues during peak hours, exacerbate potentially unsafe ramp conditions at these locations (if such conditions exist or are projected to occur in the opening year of the Project), and analysis is not needed. At the intersection of SR-91 and Vermont Avenue, Project traffic is expected to primarily be eastbound and westbound through movements since primary Project access is from Normandie Avenue, where most turning movements would occur. As such, the Project is not expected to add substantial traffic to any left or right-turning movements at the intersection of SR-91 and Vermont Avenue, and the Project is not expected to materially affect the utilization of turn pocket storage that would lead to an impedance of through traffic. Therefore, no further analysis is needed related to queueing at these locations.

3.3.2 Pedestrian & Bicycle Volumes at State Facilities

As detailed below in section 3.7, 5% of the Project's net new trips are expected to be walking or biking in nature, which may also include a subsequent trip on transit. This amounts to less than 10 trips during either peak hour in total. Most of these non-transit biking and walking trips are expected to be local in nature, accessing nearby schools and businesses within 0.5 miles of the Project Site. Substantial bicycle and pedestrian trips generated by the Project are not expected to occur at the SR-91 and Vermont Avenue, I-405 off-ramps at Normandie/190th, or I-110 off-ramps at Redondo Beach Boulevard intersections given how far away they are from the Project Site. SR-91 and Vermont Avenue is located 0.8 miles from the Project Site, while the other two intersections are located over one mile from the Project Site. Because these locations are outside of the Project Study Area, Multi-Modal Conflict Analyses and/or Complete Street Access considerations should not be necessary.

3.4 Traffic Counts and Field Observations

Intersection turning movement and street segment counts were collected in March 2022, while local schools were in session. Counts were collected during the AM and PM peak periods of 7-9 AM and 4-6 PM, respectively. Although the COVID-19 Pandemic resulted in both temporary and permanent shifts in traffic patterns, pandemic-related restrictions that could affect travel have largely expired and/or stabilized in 2022. Therefore, these newly collected traffic counts represent conditions that are as realistic and typical as possible. Traffic counts can be found in **Appendix B**.

Field observations were conducted at study locations in March 2022 at the same time counts were collected.

TABLE 2
LIST OF STUDY INTERSECTIONS AND STREET SEGMENTS

ID	North/South Street	East/West Street	Jurisdiction
1	Normandie Avenue	Gardena Boulevard	Gardena
2	Normandie Avenue	166th Street	Gardena
3	Normandie Avenue	169th Street	Gardena
4	Normandie Avenue	170th Street	Gardena
5	Normandie Avenue	Artesia Boulevard	Gardena

ID	Segment	Jurisdiction
1	169th Street west of Brighton Avenue	Gardena
2	170th Street west of Brighton Avenue	Gardena

Project Site
Study Intersections
Study Segments
Cities

Figure 2

Study Intersections and Study Segments
Normandie Apartments Project

3.5 Existing (2022) Intersections Level of Service

Existing lane configurations and signal controls were obtained through field observations and Google Street View imagery. They can be found in **Appendix C**.

The results of the existing LOS analysis are presented in **Table 3**. Corresponding LOS calculation sheets are included in **Appendix D**. The results of the LOS calculations indicate that all study intersections operate at LOS D or better during the weekday AM and PM peak hours.

TABLE 3
EXISTING (2022) CONDITIONS INTERSECTION LEVELS OF SERVICE

NO.	INTERSECTION	CONTROL TYPE	PEAK HOUR	EXISTING	
				DELAY (S)	LOS
1	Normandie Av & Gardena Bl	Signalized	AM	8.2	A
			PM	7.0	A
2	Normandie Av & 166th St	Signalized	AM	10.3	B
			PM	10.6	B
3	Normandie Av & 169th St	TWSC	AM	20.3	C
			PM	21.5	C
4	Normandie Av & 170th St	Signalized	AM	5.6	A
			PM	5.2	A
5	Normandie Av & Artesia Bl	Signalized	AM	40.8	D
			PM	39.3	D

[a] Intersections were analyzed using HCM methodologies per City of Gardena's *SB 743 Implementation, Transportation Analysis Updates.* LOS and delay for unsiganlized intersections were reported using the worst performing approach.

[b] TWSC=Two-Way Stop-Controlled Intersection

3.6 Opening Year (2027) Volumes and Intersections Level of Service

To evaluate the potential effects of the proposed Project on the local street system, it was necessary to develop estimates of Opening Year traffic conditions both with and without the Project. Opening Year traffic volumes without the Project are first estimated, representing the Opening Year conditions. The traffic generated by the proposed Project is then estimated and separately assigned to the surrounding street system. The sum of the Opening Year and Project-generated traffic represents Opening Year Plus Project traffic conditions.

The Opening Year traffic projections reflect changes in traffic from two primary sources: background or ambient growth in the existing traffic volumes to reflect the effects of overall regional growth both in and outside of the study area, and traffic generated by specific projects in, or in the vicinity of, the study area. These factors are described below.

3.6.1 Areawide Traffic Growth

To provide a conservative estimate, traffic volumes in the vicinity of the study area were projected to increase at a rate of about 0.4% per year to the Year 2027. With the assumed completion date of 2027, the existing 2022 traffic volumes were adjusted upward by a factor of 0.4% per year for five years to reflect areawide regional growth up to Year 2027. The growth factor was derived from the SCAG Travel Demand Model for the City of Gardena.

3.6.2 Related Projects Traffic Generation

The second major source of traffic growth in the study area is from specific cumulative development projects, also called related projects, expected to be built in the vicinity of the proposed Project Site prior to Project opening. Data describing cumulative projects in the area was developed based on information obtained from the City of Gardena. A total of 7 related projects were identified in the study area, within a mile of the project site, and are estimated to generate 169 trips during the AM peak hour and 203 trips during the PM peak hour, as summarized in **Table 4**. The application of these trips to the study intersections was made on top of the 1% ambient growth projections, for a further conservative estimate of future traffic conditions. It was assumed that all 7 related projects would be completed and occupied by the opening year of this Project. Trip generation estimates for each of the cumulative projects were developed according to ITE (11th Edition) rates. **Figure 3** displays the locations of the related projects. **Appendix C** shows the assignment of this traffic at each of the study intersections. Related projects traffic was distributed across study intersections using assumptions found in their respective transportation studies or the travel demand model.

3.6.3 Opening Year (2027) Intersections Level of Service

The results of the Opening Year (2027) LOS analysis are presented in **Table 5**. Corresponding LOS calculation sheets are included in **Appendix D**. The results of the LOS calculations indicate that all study intersections operate at LOS D or better during the weekday AM and PM peak hours.

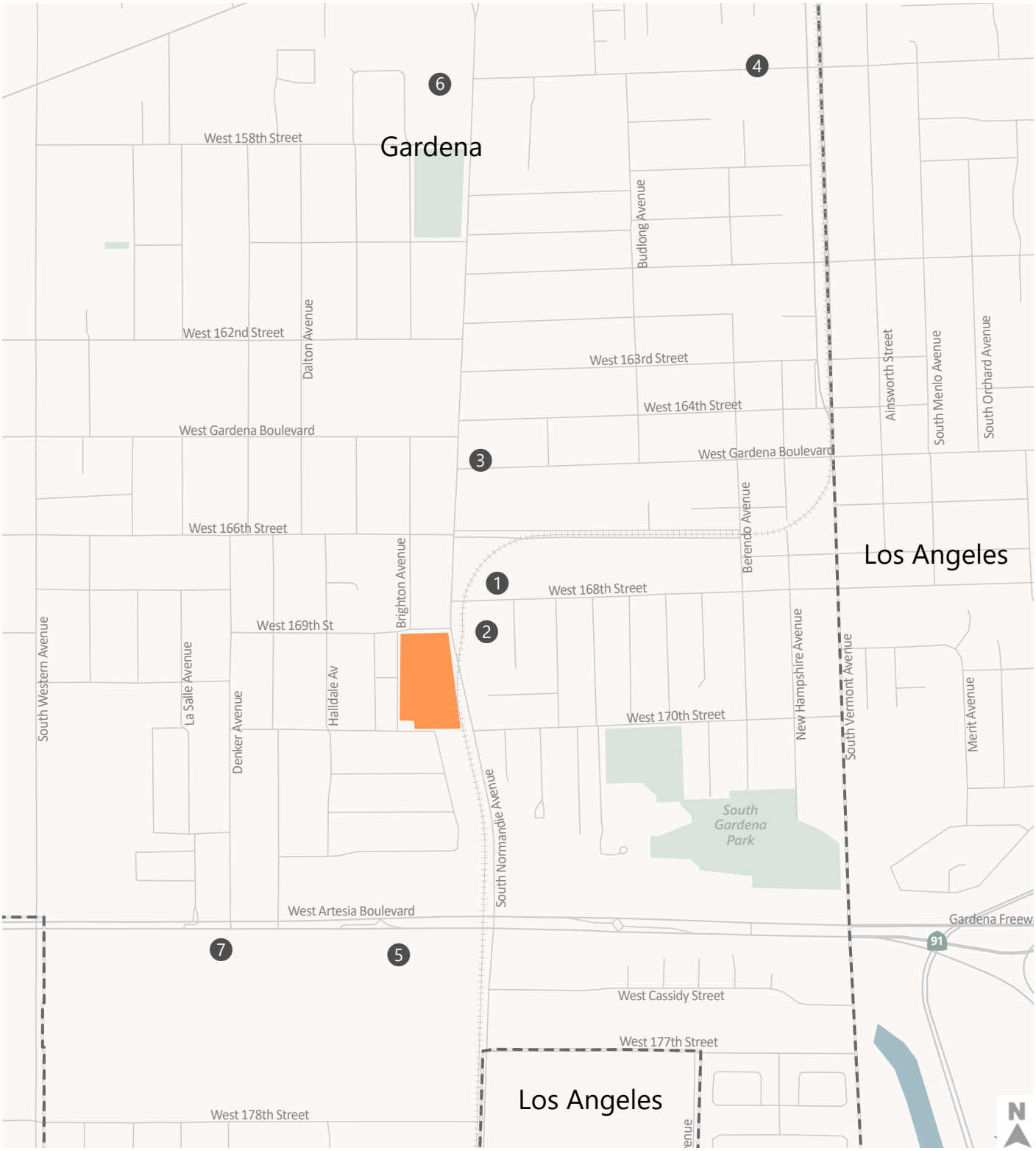
TABLE 4
16911 NORMANDIE PROJECT
RELATED PROJECTS

No.	Project Location	City	Land Use	Size		Trip Generation						
							AM			PM		
						Daily	IN	OUT	TOTAL	IN	OUT	TOTAL
1	1333 W 168th St	Gardena	Townhomes	3	du	22	0	1	1	1	1	2
2	1348 W 168th St	Gardena	Townhomes	9	du	65	1	3	4	3	2	5
3	1341 W Gardena Bl	Gardena	Apartments	14	du	205	7	6	13	10	10	20
			Commercial	3	ksf							
4	1031 Magnolia Av	Gardena	Townhomes	6	du	43	1	2	3	2	1	3
5	1450 W Artesia Bl	Gardena	Self Storage & Warehousing	258	ksf	374	14	9	23	18	21	39
6	15717 & 15725 Normandie Av	Gardena	Townhomes	30	du	216	4	10	14	10	7	17
7	1610 W Artersia Bl	Gardena	Apartments	300	du	1,362	26	85	111	71	46	117
				Total:		925	53	116	169	115	88	203

Notes:

du = dwelling unit; ksf = one-thousand square feet

Related projects list based on information provided by City of Gardena and City of Los Angeles dated June 2023.



Related Projects

Project Site

Cities

Figure 3

Related Projects
Normandie Apartments Project

TABLE 5
OPENING YEAR (2027) CONDITIONS INTERSECTION LEVELS OF SERVICE

NO.	INTERSECTION	CONTROL TYPE	PEAK HOUR	OPENING YEAR (2027)	
				DELAY (S)	LOS
1	Normandie Av & Gardena Bl	Signalized	AM	8.1	A
			PM	7.1	A
2	Normandie Av & 166th St	Signalized	AM	10.2	B
			PM	11.7	B
3	Normandie Av & 169th St	TWSC	AM	18.7	C
			PM	22.7	C
4	Normandie Av & 170th St	Signalized	AM	5.6	A
			PM	5.3	A
5	Normandie Av & Artesia Bl	Signalized	AM	41.5	D
			PM	40.5	D

[a] Intersections were analyzed using HCM methodologies per City of Gardena's *SB 743 Implementation, Transportation Analysis Updates.* LOS and delay for unsiganlized intersections were reported using the worst performing approach.

[b] TWSC=Two-Way Stop-Controlled Intersection

3.7 Project Traffic

The development of trip generation estimates for the Project was a 3-step process: trip generation, trip distribution, and traffic assignment.

3.7.1 Project Traffic Generation

As indicated previously, the Project would involve the demolition of approximately 106,100 sf of existing warehousing uses and its replacement with approximately 75 low-rise townhomes and 328 apartment dwelling units. **Table 6** presents the trip rates used to estimate trip generation for the Project. The ITE 11th Edition Trip Generation Manual was used to determine trip generation estimates for the proposed land uses. The ITE Multifamily Housing (Mid-Rise) rate (Land Use #221) was used for the proposed apartments, while the ITE Multifamily Housing (Low-Rise) rate (Land Use #220) was used for the proposed townhomes. The ITE Warehousing rate (Land Use #150) was used for the existing use as a credit. Based on the presence of transit routes near the site and the close proximity to other destinations, a combined 5% walking, biking, and transit credit was taken for the proposed land uses.

After including the credits for existing uses and non-automotive travel, the Project is estimated to generate 1,715 daily trips, 126 trips (20 inbound/106 outbound) in the AM peak hour, and 138 trips (92 inbound/46 trips outbound) in the PM peak hour.

3.7.2 Project Traffic Distribution and Assignment

The geographic distribution of trips generated by the Project is dependent on characteristics of the street system serving the Project site, the level of accessibility of routes to and from the proposed Project site, and the locations of employment and residential areas to which patrons of the Project would be drawn. The trip distribution is based on trip distribution information from the Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP) travel demand model and finalized through conversations with city staff to ensure that the assumptions are realistic and vetted. The distribution of traffic is illustrated in **Figure 4**. Project traffic (depending on residential land use type) would enter the site from the four driveways as described in Chapter 1.

The traffic expected to be generated by the proposed Project was assigned to the street network using the distribution pattern shown in Figure 4. **Appendix C** shows the Project traffic assigned at the study intersections.

TABLE 6
16911 NORMANDIE APARTMENTS PROJECT
DAILY & PEAK HOUR VEHICLE TRIP GENERATION ESTIMATES

Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]							Estimated Trip Generation						
			Daily	AM Peak Hour			PM Peak Hour			Daily	AM Peak Hour Trips			PM Peak Hour Trips		
				Rate	In%	Out%	Rate	In%	Out%		In	Out	Total	In	Out	Total
PROPOSED PROJECT																
Townhomes (Low-Rise)	220	75 du	6.74	0.4	24%	76%	0.51	63%	37%	506	7	23	30	24	14	38
Less: Walk/Bike/Transit Adjustment [b]			*5%*	*5%*			*5%*			*(25)*	*0*	*(1)*	*(1)*	*(1)*	*(1)*	*(2)*
Net External Vehicle Trips										481	7	22	29	23	13	36
Apartments (Mid-Rise)	221	328 du	4.54	0.37	23%	77%	0.39	61%	39%	1,489	28	93	121	78	50	128
Less: Walk/Bike/Transit Adjustment [b]			*5%*	*5%*			*5%*			*(74)*	*(1)*	*(5)*	*(6)*	*(4)*	*(3)*	*(7)*
Net External Vehicle Trips										1,415	27	88	115	74	47	121
TOTAL PROJECT EXTERNAL TRIPS		**403 du**								1,896	34	110	144	97	60	157
EXISTING USE ADJUSTMENT																
Warehousing	150	106.1 ksf	1.71	0.17	77%	23%	0.18	28%	72%	181	14	4	18	5	14	19
NET INCREMENTAL EXTERNAL TRIPS										1,715	20	106	126	92	46	138

Notes:

[a] Source: Institute of Transportation Engineers (ITE), Trip Generation, 11th Edition, 2021, unless otherwise noted.

[b] Although GTrans Line 4 is not currently providing service to/from the Harbor Gateway Transit Center due to the COVID-19 Pandemic, it is expected that this service would return in the future. Bus service provided by GTrans Lines 1X and 4 connect to major transit hubs and destinations, which informs the combined walking, biking, and transit trip generation credit. Base ITE rates do not take into account the usage of other modes of transportation.

Project Site
Study Intersections
Study Segments
Cities

Figure 4

Trip Distribution
Normandie Apartments Project

3.8 Opening Year Plus Project Intersections Level of Service

This section describes the analysis of potential effects on the roadway system due to future increases in traffic plus traffic generated by the project. The Opening Year (2027) Plus Project roadway network is the same network assumed under the Opening Year (2027) scenario.

The results of the Opening Year (2027) LOS analysis are presented in **Table 7**. Corresponding LOS calculation sheets are included in **Appendix D**. The results of the LOS calculations indicate that all study intersections operate at LOS D or better during the weekday AM and PM peak hours with the exception of the unsignalized intersection of Normandie Avenue and 169th Street, which is projected to operate at LOS E in the AM and PM peak hour due to the eastbound left-turn movement. The City of Gardena does not have non-CEQA analysis criteria for unsignalized intersections. It is generally typical for minor street stop-controlled approaches at unsignalized intersections to operate at LOS E/F (and higher amounts of delay) due to the nature and hierarchy of the street network, especially for drivers making left-turns.

3.9 Corrective Actions

Although there are no analysis criteria for unsignalized intersections in the City of Gardena, the City's guidance refers to the potential to install traffic signals at unsignalized intersections where traffic volumes are high enough to meet traffic signal warrants. A traffic signal warrant analysis for the unsignalized intersection of Normandie Avenue and 169th Street can be found in Section 3.11. Alternatively, the City of Gardena could consider restricting left-turn movements from 169th Street, which would reduce delay.

3.10 Queuing Analysis

A queuing analysis was performed for the unsignalized intersection of Normandie Avenue and 169th Street. **Table 8** presents AM and PM peak hour 95th percentile queues for non-free-flow turning movements. The queues are provided on the same sheets as the LOS and delay for this intersection in **Attachment D**. As shown in Table 8, Project traffic is not expected to cause any non-free-flow turning movements to exceed turn storage capacity.

TABLE 7
OPENING YEAR PLUS PROJECT CONDITIONS INTERSECTION LEVELS OF SERVICE

NO.	INTERSECTION	CONTROL TYPE	PEAK HOUR	OPENING YEAR (2027)		OPENING YEAR PLUS PROJECT		DELAY INCREASE
				DELAY (S)	LOS	DELAY (S)	LOS	
1	Normandie Av & Gardena Bl	Signalized	AM	8.1	A	8.2	A	0.1
			PM	7.1	A	7.5	A	0.4
2	Normandie Av & 166th St	Signalized	AM	10.2	B	10.3	B	0.1
			PM	11.7	B	11.8	B	0.1
3	Normandie Av & 169th St	TWSC	AM	18.7	C	**36.6**	**E**	17.9
			PM	22.7	C	**39.7**	**E**	17.0
4	Normandie Av & 170th St	Signalized	AM	5.6	A	5.6	A	0.0
			PM	5.3	A	5.3	A	0.0
5	Normandie Av & Artesia Bl	Signalized	AM	41.5	D	42.6	D	1.1
			PM	40.4	D	41.5	D	1.1

[a] Intersections were analyzed using HCM methodologies per City of Gardena's *SB 743 Implementation, Transportation Analysis Updates.* LOS and delay for unsignalized intersections were reported using the worst performing approach.

[b] TWSC=Two-Way Stop-Controlled Intersection

TABLE 8
PROJECT QUEUING ANALYSIS

NO.	INTERSECTION	CONTROL TYPE	MOVEMENT	STORAGE LENGTH (FT) [a]	PEAK HOUR	EXISTING 2022 (FT)	OPENING YEAR 2027 (FT)	OPENING YEAR PLUS PROJECT 2027 (FT)
3	Normandie Av & 169th	Unsignalized	NBL	100	AM	25	25	25
					PM	25	25	25
			EBLTR	210 [b]	AM	50	50	100
					PM	25	25	50

FT Feet

[a] An additional 60 to 90 feet of storage is typically provided in the taper area outside of the through lane, which is not reflected in the storage length above.

[b] Eastbound approach storage length measured from intersection to Project Driveway per site plans.

3.11 Traffic Signal Warrant Analysis

A traffic signal warrant analysis was conducted at the intersection of Normandie Avenue & 169th Street. Traffic volumes, as presented in **Appendix A**, were used to prepare signal warrant analyses under Existing (2022) conditions.

The traffic signal warrant analyses were conducted in accordance with the procedures described in Chapter 4C of the California Manual on Uniform Traffic Control Devices 2014 (CAMUTCD). The CAMUTCD contains nine (9) possible traffic signal warrants. Below is a summary of each traffic signal warrant, their applicability to the Project, and whether or not the applicable warrant is met under the Opening Year Plus Project scenario. In accordance with the CAMUTCD, the satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal. **Appendix E** provides the related worksheets for each traffic signal warrant.

Warrant 1, Eight-Hour Vehicular Volume

This warrant consists of meeting either Condition A or Condition B of Section 4C.02 of the CAMUTCD. Condition A is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal. Condition B is intended for application at locations where Condition A is not satisfied and where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street. Based on the worksheet calculations in Appendix E, Warrant 1 is not met under Existing (2022) conditions. This warrant is also not expected to be met under Opening Year Plus Project conditions. Minor street existing volumes would have to be more than double or triple for eight hours on a typical day in order to meet Warrant 1. Estimated peak hour minor street approach volumes under the Opening Year Plus Project scenario are also less than the minor street volume threshold to meet this warrant.

Warrant 2, Four-Hour Vehicular Volume

This signal warrant is intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal. Based on the worksheet calculations in Appendix E, Warrant 2 is not met under Existing (2022) conditions. This warrant is also not expected to be met under Opening Year Plus Project conditions either due to minor street volumes not meeting thresholds for four hours on a typical day. While the minor street approach volumes do exceed Warrant 2 thresholds during 1-hour in the morning under Opening Year Plus Project conditions, existing volume data for this eastbound approach shows a substantial drop in volumes during other hours of the day. Even after accounting for ambient growth and Project traffic, the eastbound minor street approach volume is not expected to meet Warrant 2 thresholds for four hours on a typical day.

Warrant 3, Peak Hour

This signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street. Based on the worksheet calculations in Appendix E, Warrant 3 is not met under Existing (2022) conditions. Although Category B (over 100 vehicles per hour on the minor street) of Warrant 3 is satisfied during the Opening Year Plus Project AM scenario, this warrant is still not met under Opening Year Plus Project due to the intent of Warrant 3. Warrant 3 shall be applied only in unusual cases, such as industrial and office complexes or manufacturing plants that attract and discharge large numbers of vehicles over a short period of time.

Warrant 4, Pedestrian Volume

This signal warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street. Warrant 4 was not performed at this intersection due to low pedestrian crossing volumes during peak periods as shown in the intersection counts. Existing peak hour intersection counts show less than five (5) pedestrians crossing any roadway leg during either peak hour, which is substantially less than the 75-133 crossings per hour that are necessary to meet this warrant. The Project is not expected to generate sufficient pedestrian crossing volumes to satisfy this warrant.

Warrant 5, School Crossing

This signal warrant is intended for application when schoolchildren crossing the major street is the principal reason to consider installing a traffic control signal. This warrant is not applicable to this intersection because the Project and the intersection of Normandie Avenue and 169th Street is not located in close proximity to a school and the intersection is not an established school crossing.

Warrant 6, Coordinated Signal System

This signal warrant considers progressive movement in a coordinated signal system. This sometimes necessitates installing traffic control signals at intersections where they would not otherwise be needed in order to maintain proper platooning of vehicles. This warrant is not applicable to this intersection, as the intersection analysis shows intersections along Normandie Avenue operating at acceptable LOS and without heavy congestion.

Warrant 7, Crash Experience

This signal warrant is intended for application where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal. Traffic collision data was obtained for this intersection using the CHP's Statewide Integrated Traffic Records System (see Appendix Item E). Because

there were fewer than five (5) crashes at the intersection of Normandie Avenue and 169th Street in the prior five (5) years, this warrant is not met.

Warrant 8, Roadway Network

This signal warrant considers installing a traffic control signal to encourage concentration and organization of traffic flow on a roadway network. Although volumes entering this intersection are expected to exceed thresholds for Warrant 8 as shown in Appendix E, this warrant is not met due to the requirement that both streets be considered major routes. 169th Street is not considered a principal street or major route for through traffic.

Warrant 9, Intersection Near a Grade Crossing

This signal warrant is intended for use at a location where none of the conditions described in the other eight traffic signal warrants are met, but the proximity to the intersection of a grade crossing on an intersection approach controlled by a STOP or YIELD sign is the principal reason to consider installing a traffic control signal. Warrant 9 applies to situations where a grade crossing crosses the minor street and the minor street approach is controlled by a STOP or YIELD sign. At the intersection of Normandie Avenue and 169th Street, no traffic control is provided for Normandie Avenue. Near this intersection, the railroad tracks cross the major street (Normandie Avenue). Therefore, this warrant was not performed.

Summary

Based on the signal warrant analysis performed above, a traffic signal is not warranted under Existing (2022) conditions at the intersection of Normandie Avenue and 169th Street. Based on the Project's expected traffic and areawide traffic projections, a traffic signal is also not expected to meet warrants under the Opening Year Plus Project scenario. The City of Gardena should continue to monitor traffic conditions and safety after the Project is built.

The decision to install a signal should not be based solely upon the warrants, since the installation of signals can lead to increases in the frequency of collisions (especially rear-end collisions) according to the CAMUTCD. Should the City decide to install a traffic signal at Normandie Avenue and 169th Street, further study should be conducted to analyze the safety, coordination, and interactions between the at-grade railroad crossing and traffic flows on Normandie Avenue and 169th Street. The City of Gardena should undertake regular monitoring of actual traffic conditions and collision data, and timely re-evaluation of the full set of traffic signal warrants in order to prioritize and program intersections for signalization.

4. Residential Street Segment Analysis

Table 9 shows a summary of the residential street segment analysis. Twenty-four hour street segment counts were conducted in March 2022 at both analyzed street segments, 169th Street west of Brighton Avenue and 170th Street west of Brighton Avenue. Proposed Project driveways connect to both 169th Street and 170th Street. These street segment counts were then forecasted in a similar manner as the intersection turning movement counts, to which the Project's traffic was added to create Opening Year Plus Project volumes. The Project's percentage of Opening Year (2027) scenario volumes is also shown on Table 9. The Project is expected to add 97 daily trips to 169th Street and 113 daily trips to 170th Street, about 6.6% and 33.8% of their Opening Year (2027) volumes, respectively. While the City of Gardena does not have established criteria to evaluate unacceptable levels of traffic on residential streets, both streets are designated as Local Streets in the Gardena Circulation Plan. The Circulation Plan does not provide typical ADT for Local Streets, but the City defines the larger and wider Collector Roadways to carry less than 15,000 vehicles per day. Under Opening Year Plus Project conditions, the ADT on both Local Street segments is expected to be far less than typical ADT as shown in the Gardena Circulation Plan.

TABLE 9
RESIDENTIAL STREET SEGMENT ANALYSIS - DAILY TRAFFIC VOLUMES

Location	Weekday Bidirectional Daily Volume				Segment Analysis
	Existing (2022) ADT	Opening Year (2027) ADT	Project Only ADT	Opening Year Plus Project ADT	% of Opening Year ADT
169th Street w/o Brighton Avenue	1,343	1,370	97	1,467	6.6%
170th Street w/o Brighton Avenue	217	221	113	334	33.8%

Note: ADT = Average Daily Traffic

5. Non-Motorized Modes Analysis

5.1 Effects on Active Transportation

Pedestrian access to the Project's apartment building units will be provided on the ground floor with primary pedestrian access located at the building lobby located at the northeastern corner of the site, adjacent to the intersection of Normandie Avenue & 169th Street. Additional restricted pedestrian access will also be provided to other corners of the apartment building, which will lead to internal circulation serving the townhomes. Pedestrian access to the Project's townhomes will be provided via internal circulating roadways and sidewalks leading from 169th Street and 170th Street. Some townhome units will have direct pedestrian access to City streets. The project design provides for adequate pedestrian access to the existing sidewalks provided along the project frontage. There are several bus stops within a ¼-mile of the project site, including 166th Street & Brighton Avenue (eastbound and westbound) and Normandie Avenue & 170th Street (southbound and northbound). There are commercial land uses along Normandie Avenue and Artesia Boulevard. Project traffic and site design is not anticipated to deteriorate or effect existing pedestrian facilities in the study area.

The project includes amenities for bicyclists which could encourage the use of bicycles for certain trips. Long-term, enclosed bike storage will also be provided in the garage.

Separated or protected bicycle facilities are not currently provided along Normandie Avenue along the project site. According to the South Bay Bicycle Master Plan, Normandie Avenue is designated as a bike route (Class III) from 182nd Street to 170th Street. Additionally, 166th Street , 170th Street and Gardena Boulevard are designated as bike routes (Class III), but not on segments directly adjacent to the project site.

The following future Bicycle Friendly Street segment is proposed in the South Bay Bicycle Master Plan as a prioritized project in Gardena that is directly adjacent to the project site and may be implemented by the City in the future:

- 170th Street from Denker Avenue to Vermont Avenue (0.8 miles)

Implementation of the proposed project will not conflict with any existing bicycle facilities, and it will not preclude the implementation of any other potential enhancements to planned facilities. Similarly, bicycle trips will be generated by the project, but development of the project is not expected to conflict with any existing or planned bicycle facility.

The proposed project is expected to generate bicycle and pedestrian trips to and from the project site, with some of those trips including the use of transit. Nearby land uses with retail, service, and employment opportunities are close enough to where walking and bicycling would be feasible.

5.2 Effects on Transit

The project site is located within a quarter mile of various bus stops (166th Street & Brighton Avenue and Normandie Avenue & 170th Street) and is served by transit service via the City of Gardena's Transit Service, GTrans. Project traffic and the design of the project site is not expected to affect access to or the operation of these services.

6. Summary and Conclusions

This LTA was undertaken to analyze the potential transportation effects of the proposed Project. The following summarizes the results of this analysis:

- The Project would involve the demolition of 106,100 sf of existing warehousing space and its replacement with 75 townhomes and 328 apartment dwelling units. The apartment units would be served by one right-in/right-out only driveway on Normandie Avenue and one full access driveway on 169th Street west of Normandie Avenue. The townhomes would be served by one full access driveway on 169th Street and one full access driveway on 170th Street.
- The Project would install a median along Normandie Avenue surrounding the Union Pacific railroad tracks to prevent left-turns into and out of the Project from Normandie Avenue.
- The Project would generate an estimated 1,715 daily trips, 126 trips (20 inbound/106 outbound) in the morning peak hour, and 138 trips (92 inbound/46 trips outbound) in the evening peak hour.
- The LOS analysis for the Existing, Opening Year, and Opening Year Plus Project scenarios determined that the proposed Project would result in LOS D or better conditions at all study intersections with the exception of the unsignalized intersection of Normandie Avenue and 169th Street, which is projected to operate at LOS E in the AM and PM peak hour. The City of Gardena does not have analysis criteria for unsignalized intersections.
- The queuing analysis determined that the Project would not result in intersection queues that would exceed turn pocket storage capacity at the intersection of Normandie Avenue and 169th Street.
- A full traffic signal warrant analysis at Normandie Avenue and 169th Street found that a traffic signal would not meet any CAMUTCD signal warrants under Existing (2022) conditions. Although Category B under Warrant 3 is satisfied under the Opening Year Plus Project AM scenario, this warrant shall only be applied in unusual cases as described in the CAMUTCD. Therefore, this intersection is not expected to meet warrants under the Opening Year Plus Project scenario. The City should continue to monitor traffic conditions after the Project is built and potentially re-evaluate with the full set of traffic signal warrants. Alternatively, the City could consider restricting eastbound left-turns from 169th Street to northbound Normandie Avenue to reduce vehicular delay.
- The residential street segment analysis for the Opening Year plus Project scenario determined that the proposed Project would comprise of approximately 6.4% and 33.1% of Opening Year daily segment traffic along 169th Street and 170th Street, respectively. While the City of Gardena does not have thresholds or criteria for evaluating street segments, it is recommended that the City continue to monitor traffic conditions at these street segments after the Project is built and potentially explore traffic calming measures.
- The Project will generate bicycle, pedestrian, and transit trips, and is not expected to affect access to or the operations of these facilities.

Appendix A: LTA Scoping Memorandum

FEHR PEERS

Memorandum

Date: 7 February 2022

To: Amanda Acuna & Greg Tsujiuchi, City of Gardena

From: Ryan Liu, PE & Michael Kennedy, AICP

Subject: Local Transportation Assessment Scoping Memorandum for the 16911 S Normandie Avenue Apartments Project

LB21-0048

Fehr & Peers is preparing the transportation analyses as part of project entitlements for the Normandie Apartments Project ("Project"), located at 16911 S Normandie Avenue in the City of Gardena. The purpose of this memorandum is to document the methodologies and assumptions for the Project's non-CEQA Local Transportation Assessment (LTA) in accordance with the City's transportation analysis procedures. CEQA-related transportation analyses can be found in the Project's VMT Assessment Memorandum, which is part of the Project's CEQA documentation.

Project Description

The Project consists of the replacement of 105,000 square feet of warehousing uses with 76 low-rise townhomes and 273 apartments in a separate building. Access to the Project Site will be provided by the following five driveways:

- Driveway 1 serves the apartment building's parking garage from 169th Street west of Normandie Avenue.
- Driveway 2 also serves the apartment building's parking garage from Normandie Avenue.
- Driveway 3 serves the townhomes from Normandie Avenue and travels across Union Pacific railroad tracks, which border portions of the Project Site's eastern frontage.
- Driveway 4 serves the townhomes from 170th Street.
- Driveway 5 also serves the townhomes from 169th Street.

Internal roadways link Driveways 3-5 to all townhomes, but do not connect to the apartment building garage. **Figure 1** shows the Project site plan. The Project is expected to be completed in 2026.

Regulatory Framework

In 2020, the City of Gardena updated their transportation analysis guidelines for land use development projects in accordance with Senate Bill 743 (SB 743), which requires CEQA-related transportation analyses to use vehicle miles traveled (VMT) as the primary performance metric. Local agencies such as the City of Gardena chose to retain level-of-service (LOS) to provide an additional transportation-focused project review, prepared separately from the documentation required under CEQA. According to current City guidance, projects that generate 50 or more peak hour vehicle trips would require an LTA. Any intersection to which a proposed project is expected to add 50 peak hour trips in either AM or PM peak hour would be considered a study intersection.

Project Trip Generation

Trip generation rates from Trip Generation, 11th Edition (Institute of Transportation Engineers [ITE], 2021) were used to estimate the number of trips for most uses associated with the Project. The following trip generation land uses were used:

- ITE Land Use #220 (Low-Rise Multifamily Housing) was used for the proposed townhomes.
- ITE Land Use #221 (Mid-Rise Multifamily Housing) was used for the proposed apartments.
- ITE Land Use #150 (Warehousing) was used for the existing warehouses on the Project Site.

Project Trip Generation Estimates

Table 1 presents the estimated trip generation using trip generations for the fully built project, taking into account an existing use credit for the warehousing use. As presented in Table 1, the Project is expected to generate an estimated 1,483 net new daily vehicle trips, including 107 trips (15 inbound/ 92 outbound) during the AM peak hour and 119 trips (81 inbound/ 38 outbound) during the PM peak hour.

Because the Project is expected to generate more than 50 peak hour vehicle trips, an LTA is required. This LTA will provide an existing transportation conditions overview, LOS analysis, a residential street segment analysis, and an active transportation review.

LOS Analysis Assumptions

Study Intersections

The following study intersections were selected in consultation with City of Gardena staff, based on the expected number of vehicle trips to be added to nearby intersections. **Figure 2** identifies the five intersections that were approved by City staff for data collection:

1. Normandie Avenue & Gardena Boulevard (signalized)
2. Normandie Avenue & 166th Street (signalized)
3. Normandie Avenue & 169th Street (unsignalized)
4. Normandie Avenue & 170th Street (signalized)
5. Normandie Avenue & Artesia Boulevard (signalized)

Artesia Boulevard is an arterial street under local jurisdiction, which then transitions into SR-91 (Gardena Freeway) east of Vermont Avenue under Caltrans jurisdiction. Although the Project is located near freeway ramp intersections such as Vermont Avenue and the SR-91 terminus, none are proposed for analysis since the Project is not expected to add 50 or more trips at these locations.

Traffic Counts

Existing morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak period intersection counts will be conducted at the study intersections when local schools are in session, on good days of weather, on Tuesdays through Thursdays.

Fehr & Peers requests the following information from City of Gardena staff:

- Pending and approved development projects in Gardena that should be included in the forecasting effort. Pending and approved development projects will also be obtained from the City of Los Angeles.
- Signal timing information at the signalized study intersections

Trip Distribution and Assignment

The geographic distribution of trips generated by the Project is dependent on characteristics of the street system serving the Project site, the level of accessibility of routes to and from the proposed Project site, and the locations of employment and residential areas to which patrons of the Project would be drawn. The trip distribution is based on trip distribution information from the 2016 Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP) travel demand model and finalized through conversations with city staff to ensure that the assumptions are realistic and vetted. The 2020 SCAG RTP model is an activity based model (ABM) rather than a trip model, and has not been validated for project level CEQA clearance at this time,

which is why Fehr & Peers proposes to use the 2016 RTP Model. The 2016 RTP Model was also used to prepare the City's CEQA VMT impact metrics. However, the choice of model is up to the lead agency's discretion. The distribution of Project trips is illustrated in **Figure 3**.

Analysis Methodology

Fehr & Peers will conduct capacity analysis at the study intersections during morning and evening peak hours. The Highway Capacity Manual 6th Edition (HCM) methodology using Synchro 11 will be used to evaluate LOS at both signalized and unsignalized study intersections. Heavy vehicle percentages and peak hour factors (PHF) for HCM intersection analysis for existing scenarios will be determined based on the traffic counts, while a PHF of 0.95 will be used for HCM intersection analysis for future conditions.

Analysis Scenarios

The following scenarios will be analyzed:

- Existing (2021 or 2022) Conditions – Traffic counts conducted for this study will be analyzed to develop an existing baseline scenario.
- Opening Year – Existing traffic conditions plus ambient growth and traffic from all the developments within the study area for which an application has been submitted ("pending projects), or that have been approved but not yet constructed.
    - Based on information from the SCAG travel demand model, the ambient growth rate for the City Gardena through 2040 would be 0.4% per year.
- Opening Year plus Project – Traffic conditions of existing plus ambient growth and approved and pending developments, plus traffic generated by the proposed project.

Residential Street Assessment Assumptions

The City recommends that a residential street assessment be conducted when projects have direct access or are located adjacent to a neighborhood residential street. Because the Project is located adjacent to other residential developments and provides driveway access onto residential streets, a residential street assessment will be conducted. 24-hour two-way street segment counts will be collected at the same time as counts are collected at study intersections. The street segments proposed for assessment are:

- 169th Street west of Brighton Way
- 170th Street west of Brighton Way

The assessment will estimate the number of project trips expected to travel on these residential street segments on a daily basis and during AM and PM peak hours under plus-project conditions. If necessary, the City will consider the need for relevant traffic calming solutions.

Active Transportation Assessment Assumptions

The Project will also be reviewed for potential conflicts with adopted plans and policies related to active transportation, such as the South Bay Bicycle Master Plan. Any planned active transportation improvements in the immediate vicinity of the Project Site will be noted and documented in the Project site plan as necessary.

Next Steps

Once the proposed assumptions and methodology are approved, Fehr & Peers will collect counts and begin the transportation analyses.

CADD FILE: \\fpb03\Data\Projects\Active\2021\0048_16911 S. Normandie Avenue\Graphics\CAD\0048_Site Plan.dwg

Nov 12, 2021

Figure 1

Project Site Plan
Normandie Apartments Project

CONCEPTUAL - NOT FOR CONSTRUCTION.

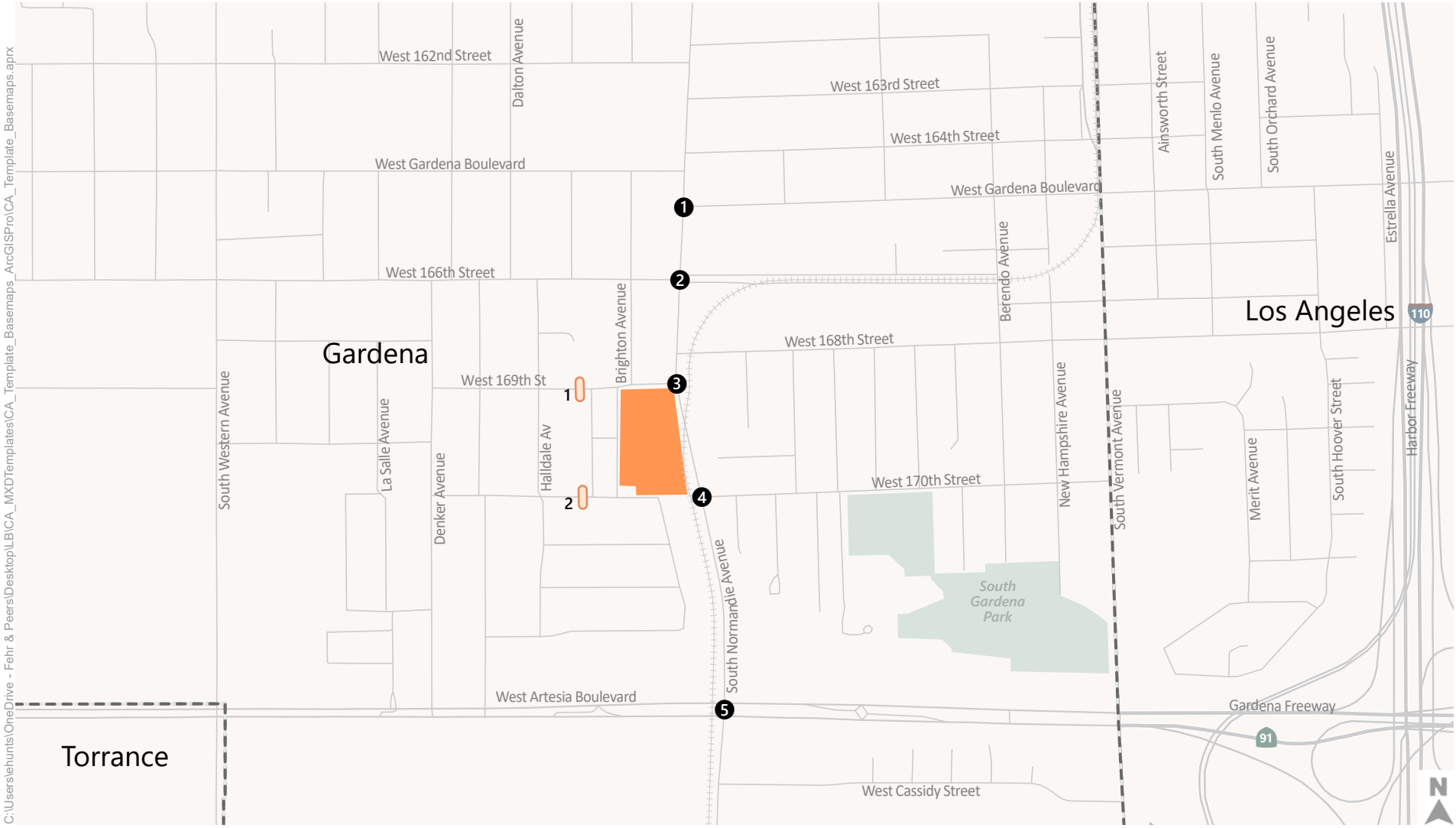
TABLE 1
NORMANDIE APARTMENTS PROJECT
DAILY & PEAK HOUR VEHICLE TRIP GENERATION ESTIMATES

Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]							Estimated Trip Generation						
			Daily	AM Peak Hour			PM Peak Hour			Daily	AM Peak Hour Trips			PM Peak Hour Trips		
				Rate	In%	Out%	Rate	In%	Out%		In	Out	Total	In	Out	Total
PROPOSED PROJECT																
Townhomes (Low-Rise)	220	76 du	6.74	0.4	24%	76%	0.51	63%	37%	512	7	23	30	25	14	39
Less: Walk/Bike/Transit Adjustment [b]			*5%*	*5%*			*5%*			*(26)*	*0*	*(1)*	*(1)*	*(1)*	*(1)*	*(2)*
Net External Vehicle Trips										486	7	22	29	24	13	37
Apartments (Mid-Rise)	221	273 du	4.54	0.37	23%	77%	0.39	61%	39%	1,239	23	78	101	65	41	106
Less: Walk/Bike/Transit Adjustment [b]			*5%*	*5%*			*5%*			*(62)*	*(1)*	*(4)*	*(5)*	*(3)*	*(2)*	*(5)*
Net External Vehicle Trips										1,177	22	74	96	62	39	101
TOTAL PROJECT EXTERNAL TRIPS		**349 du**								1,663	29	96	125	86	52	138
EXISTING USE ADJUSTMENT																
Warehousing	150	105.00 ksf	1.71	0.17	77%	23%	0.18	28%	72%	180	14	4	18	5	14	19
NET INCREMENTAL EXTERNAL TRIPS										1,483	15	92	107	81	38	119

Notes:

[a] Source: Institute of Transportation Engineers (ITE), Trip Generation, 11th Edition, 2021, unless otherwise noted.

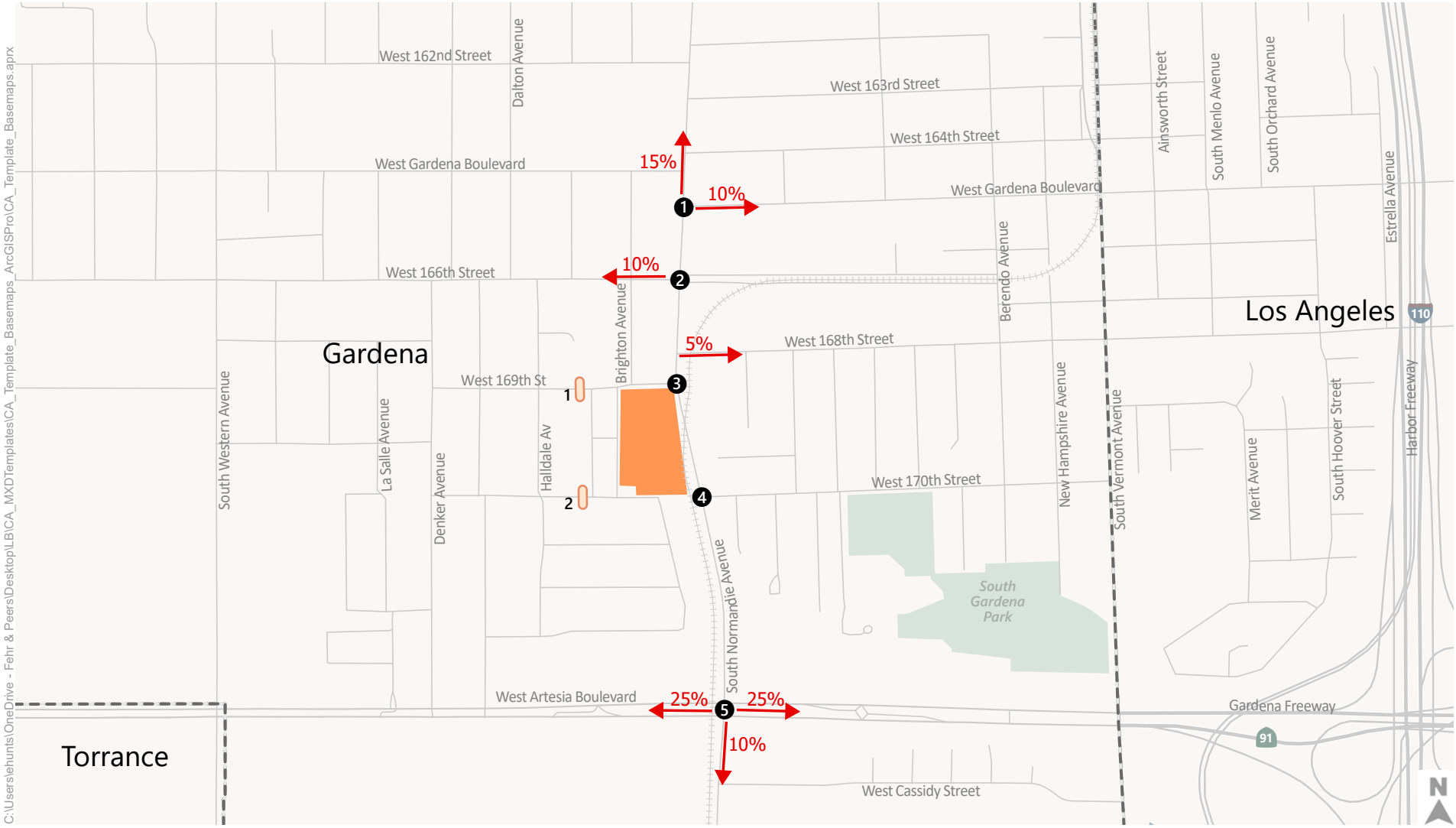
[b] Although GTrans Line 4 is not currently providing service to/from the Harbor Gateway Transit Center due to the COVID-19 Pandemic, it is expected that this service would return in the future. Bus service provided by GTrans Lines 1X and 4 connect to major transit hubs and destinations, which informs the combined walking, biking, and transit trip generation credit. Base ITE rates do not take into account the usage of other modes of transportation.



Project Site
Study Intersections
Study Segments
Cities

Figure 2

Study Intersections and Study Segments
Normandie Apartments Project



Project Site
Study Intersections
Study Segments
Cities

Figure 3

Trip Distribution
Normandie Apartments Project

Appendix B: Traffic Counts

Prepared by National Data & Surveying Services

Normandie Ave & Gardena blvd

Peak Hour Turning Movement Count

ID: 22-020099-001
City: Gardena

Day: Tuesday
Date: 3/29/2022

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

COUNT PERIODS

AM: 7:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 06:00 PM

SOUTHBOUND (Normandie Ave)

AM	2	782	110	0	1032	AM
NOON	0	0	0	0	0	NOON
PM	1	764	100	0	1250	PM
	0	2	1	0		

EASTBOUND (Gardena blvd)

AM	NOON	PM	
4	0	2	
0	0	0	0
1	0	0	0
0	0	0	1
0	0	5	0
AM	NOON	PM	

WESTBOUND (Gardena blvd)

	PM	NOON	AM
1	118	0	133
0	0	0	1
1	121	0	154
0	0	0	0
	263	0	221
	PM	NOON	AM

CONTROL

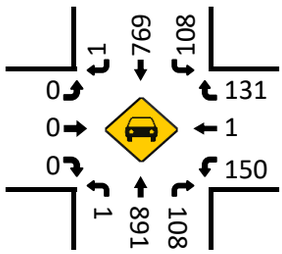
Signalized

TEV	2194	0	2406
	AM	NOON	PM
PHF	0.93		0.98

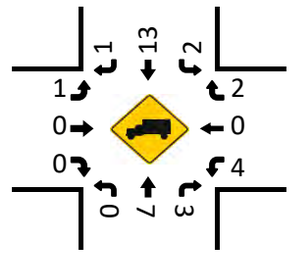
NORTHBOUND (Normandie Ave)

PM	891	1	1	1132	163	PM
NOON	0	0	0	0	0	NOON
AM	937	1	1	898	111	AM
		0	0.5	2.5	0	

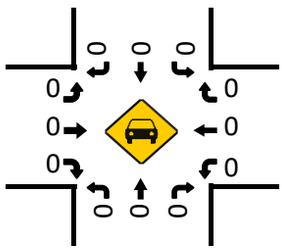
Cars (AM)



HT (AM)



Cars (NOON)



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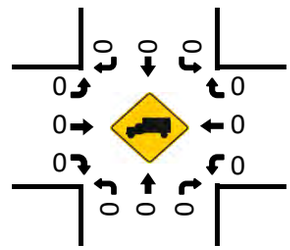
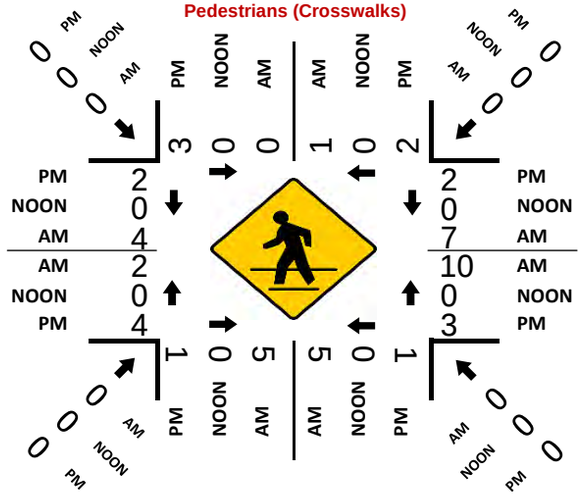


Pedestrians (Crosswalks)



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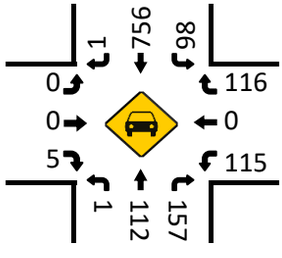

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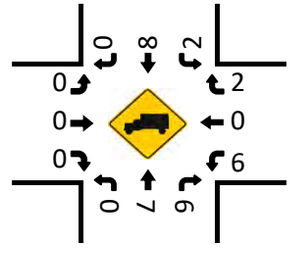


Prepared by National Data & Surveying Services

Normandie Ave & 166th st

Peak Hour Turning Movement Count

ID: 22-020099-002
City: Gardena

Day: Tuesday
Date: 3/29/2022

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

COUNT PERIODS

AM: 7:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 06:00 PM

SOUTHBOUND (Normandie Ave)

AM	109	820	10	1	1009	AM
NOON	0	0	0	0	0	NOON
PM	88	770	36	0	1300	PM

0 2 1 0

EASTBOUND (166th st)

AM	NOON	PM	
298	0	252	
0	0	0	0
103	0	139	0
60	0	108	1
200	0	144	0

WESTBOUND (166th st)

	PM	NOON	AM
1	29	0	21
1	54	0	66
1	19	0	29
0	11	0	5
	209	0	105

CONTROL

Signalized

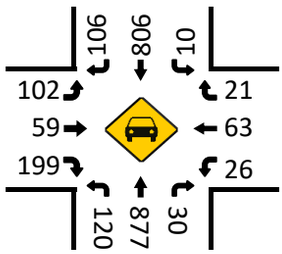
TEV	2461 AM	0 NOON	2694 PM
PHF	0.92		0.98

0 1 2 0

NORTHBOUND (Normandie Ave)

PM	933	0	110	1132	54	PM
NOON	0	0	0	0	0	NOON
AM	1049	0	123	884	30	AM

Cars (AM)



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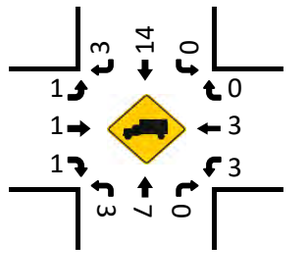
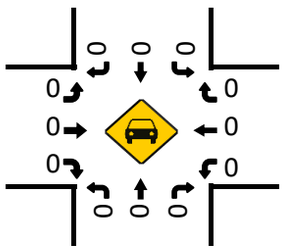


Cars (NOON)



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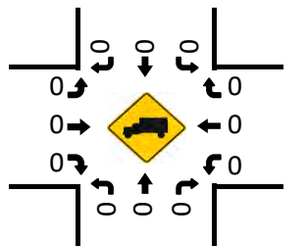
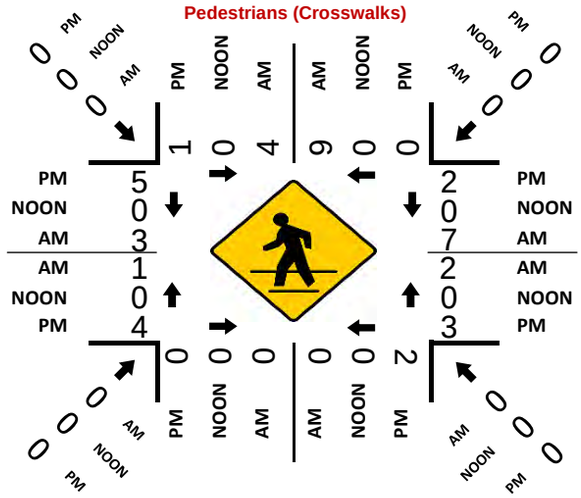


Pedestrians (Crosswalks)



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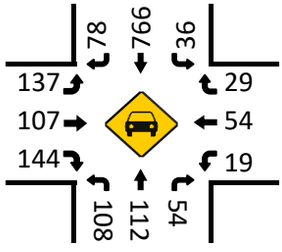

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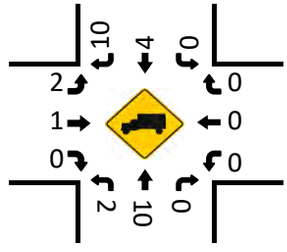


Prepared by National Data & Surveying Services

Normandie Ave & 169th st

Peak Hour Turning Movement Count

ID: 22-020099-003
City: Gardena

Day: Tuesday
Date: 4/5/2022

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 04:30 PM - 05:30 PM

COUNT PERIODS

AM: 7:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 06:00 PM

SOUTHBOUND (Normandie Ave)

AM	17	980	0	0	1036	AM
NOON	0	0	0	0	0	NOON
PM	32	859	0	0	1212	PM

EASTBOUND (169th st)

AM	NOON	PM	
56	0	75	
0	0	0	0
6	0	8	0
0	0	0	1
84	0	30	0
AM	NOON	PM	

WESTBOUND (169th st)

PM	NOON	AM	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	
PM	NOON	AM	

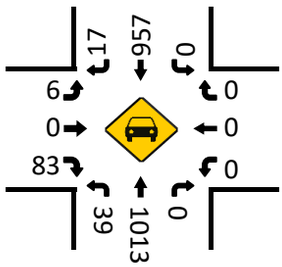
NORTHBOUND (Normandie Ave)

PM	889	0	43	1204	0	PM
NOON	0	0	0	0	0	NOON
AM	1064	0	39	1030	0	AM

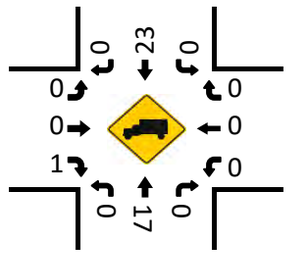
CONTROL: 1-Way Stop(EB)

TEV	2156 AM	0 NOON	2176 PM
PHF	0.89		0.96

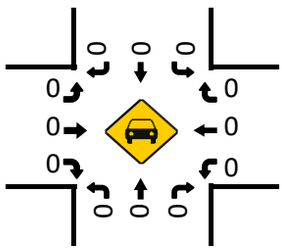
Cars (AM)



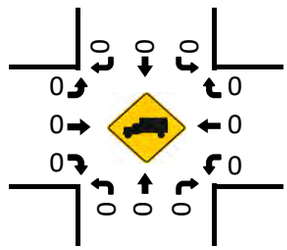
HT (AM)



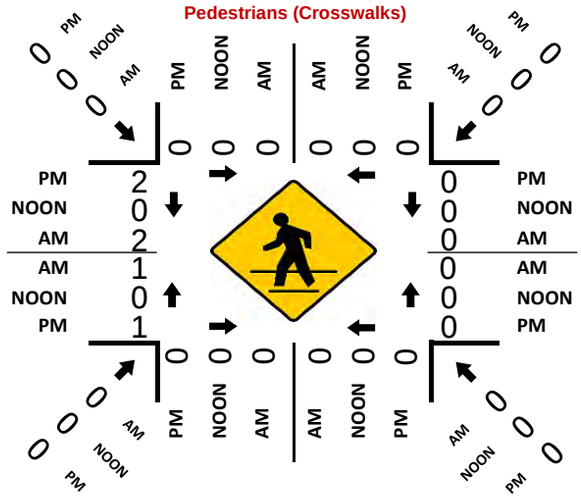
Cars (NOON)



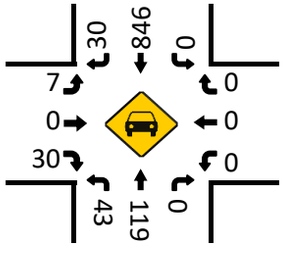
HT (NOON)



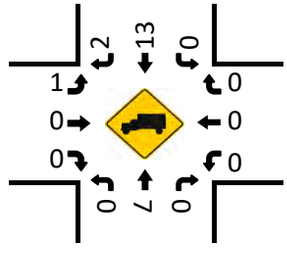
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Normandie Ave & 170th st

Peak Hour Turning Movement Count

ID: 22-020099-004
City: Gardena

Day: Tuesday
Date: 3/29/2022

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

COUNT PERIODS

AM: 7:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 06:00 PM

SOUTHBOUND (Normandie Ave)

AM	0	1008	43	0	1054	AM
NOON	0	0	0	0	0	NOON
PM	0	809	65	0	1365	PM
	0	2	1	0		

EASTBOUND (170th st)

AM	NOON	PM	
0	0	0	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
AM	NOON	PM	

WESTBOUND (170th st)

	PM	NOON	AM
0	58	0	59
1	0	0	0
0	70	0	100
0	0	0	0
	172	0	97
	PM	NOON	AM

CONTROL

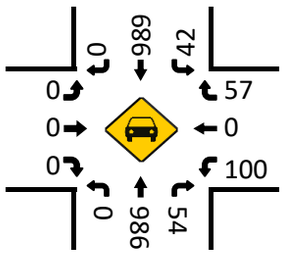
Signalized

TEV	2259 AM	0 NOON	2417 PM
PHF	0.92		0.94

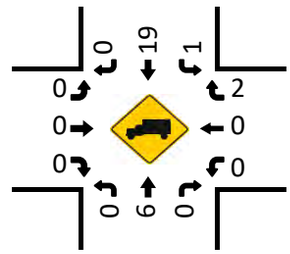
NORTHBOUND (Normandie Ave)

PM	880	1	0	1307	107	PM
NOON	0	0	0	0	0	NOON
AM	1108	0	0	995	54	AM
		0	0	2	0	

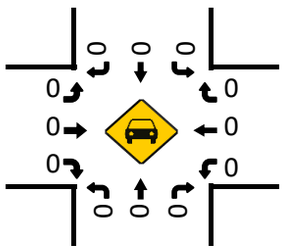
Cars (AM)



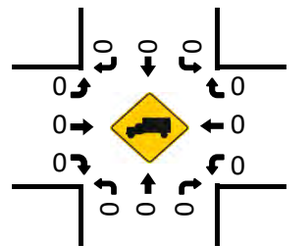
HT (AM)



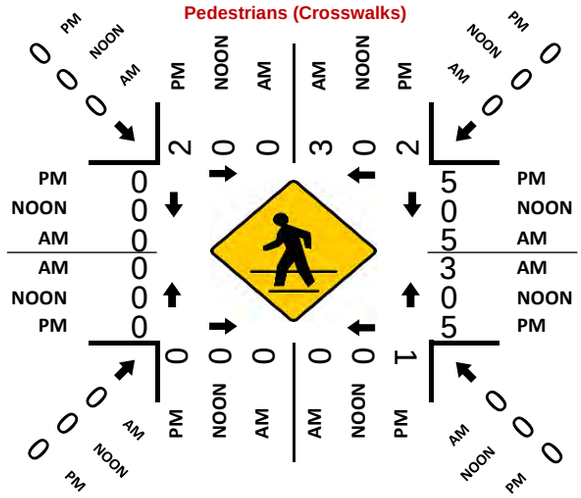
Cars (NOON)



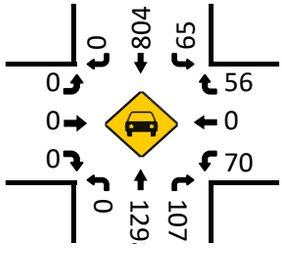
HT (NOON)



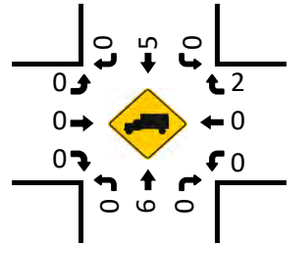
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Normandie Ave & Artesia Blvd

Peak Hour Turning Movement Count

ID: 22-020099-005
City: Gardena

Day: Tuesday
Date: 3/29/2022

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

COUNT PERIODS

AM: 7:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 06:00 PM

SOUTHBOUND (Normandie Ave)

AM	120	716	249	0	1021	AM
NOON	0	0	0	0	0	NOON
PM	125	479	234	0	1341	PM
	0	2	2	0		

EASTBOUND (Artesia Blvd)

AM	NOON	PM		
1827	0	1548		
4	0	5	0	
76	0	208	2	
864	0	1467	4	
114	0	143	0	
AM	NOON	PM		

WESTBOUND (Artesia Blvd)

PM	NOON	AM		
379	0	300	0	
1274	0	1580	4	
144	0	235	2	
17	0	15	0	
2013	0	1399		
PM	NOON	AM		

NORTHBOUND (Normandie Ave)

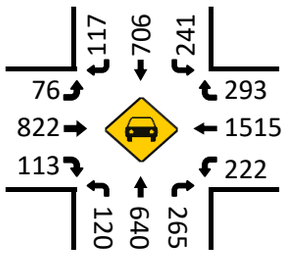
PM	767	1	144	754	295	PM
NOON	0	0	0	0	0	NOON
AM	1065	0	123	645	271	AM
		0	1	2	1	

CONTROL

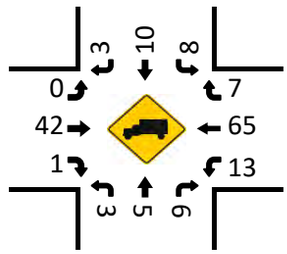
Signalized

TEV	5312 AM	0 NOON	5669 PM
PHF	0.95		0.96

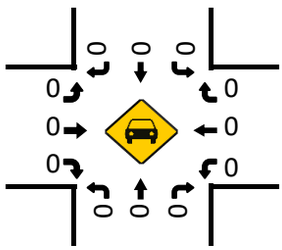
Cars (AM)



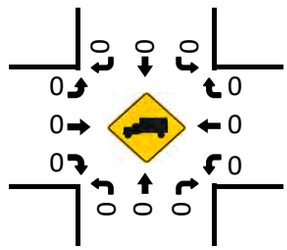
HT (AM)



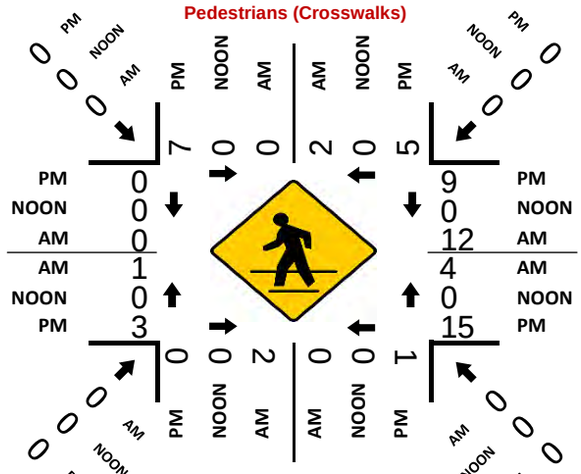
Cars (NOON)



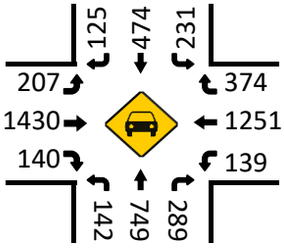
HT (NOON)



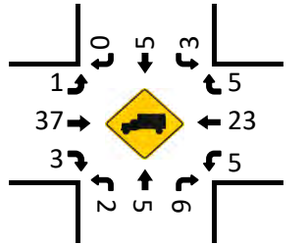
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

VOLUME

169th St W/O Brighton Way

Day: Tuesday
Date: 3/29/2022

City: Gardena
Project #: CA22_020100_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	637	706	1,343

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			0		0		0		12:00			8		10		18	
00:15			0		2		2		12:15			8		8		16	
00:30			0		4		4		12:30			8		8		16	
00:45			1	1	0	6	1	7	12:45			11	35	11	37	22	72
01:00			0		0		0		13:00			8		15		23	
01:15			0		0		0		13:15			12		15		27	
01:30			0		1		1		13:30			8		11		19	
01:45			1	1	0	1	1	2	13:45			9	37	7	48	16	85
02:00			0		1		1		14:00			10		10		20	
02:15			0		0		0		14:15			7		12		19	
02:30			0		0		0		14:30			8		18		26	
02:45			0		0	1	0	1	14:45			14	39	13	53	27	92
03:00			0		1		1		15:00			8		22		30	
03:15			0		1		1		15:15			8		6		14	
03:30			2		0		2		15:30			16		15		31	
03:45			1	3	1	3	2	6	15:45			12	44	15	58	27	102
04:00			0		0		0		16:00			11		19		30	
04:15			0		1		1		16:15			12		15		27	
04:30			0		0		0		16:30			9		20		29	
04:45			4	4	1	2	5	6	16:45			8	40	11	65	19	105
05:00			5		2		7		17:00			15		20		35	
05:15			2		1		3		17:15			11		18		29	
05:30			4		3		7		17:30			11		19		30	
05:45			5	16	1	7	6	23	17:45			8	45	12	69	20	114
06:00			3		2		5		18:00			8		11		19	
06:15			3		2		5		18:15			10		12		22	
06:30			11		3		14		18:30			11		6		17	
06:45			14	31	5	12	19	43	18:45			5	34	8	37	13	71
07:00			12		7		19		19:00			9		15		24	
07:15			13		6		19		19:15			5		11		16	
07:30			15		12		27		19:30			8		13		21	
07:45			16	56	12	37	28	93	19:45			6	28	8	47	14	75
08:00			24		15		39		20:00			1		8		9	
08:15			22		8		30		20:15			5		5		10	
08:30			12		11		23		20:30			0		8		8	
08:45			13	71	10	44	23	115	20:45			5	11	2	23	7	34
09:00			9		7		16		21:00			6		7		13	
09:15			8		7		15		21:15			5		8		13	
09:30			14		11		25		21:30			5		7		12	
09:45			11	42	5	30	16	72	21:45			4	20	6	28	10	48
10:00			15		10		25		22:00			1		1		2	
10:15			8		7		15		22:15			1		5		6	
10:30			6		9		15		22:30			0		1		1	
10:45			4	33	8	34	12	67	22:45			0	2	3	10	3	12
11:00			2		9		11		23:00			0		3		3	
11:15			11		14		25		23:15			2		3		5	
11:30			14		7		21		23:30			1		1		2	
11:45			12	39	14	44	26	83	23:45			2	5	3	10	5	15
TOTALS				297		221		518	TOTALS				340		485		825
SPLIT %				57.3%		42.7%		38.6%	SPLIT %				41.2%		58.8%		61.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	637	706	1,343

AM Peak Hour				07:30	07:30	07:30			PM Peak Hour				15:30	15:45	15:30		
AM Pk Volume				77	47	124			PM Pk Volume				51	69	115		
Pk Hr Factor				0.802	0.783	0.795			Pk Hr Factor				0.797	0.863	0.927		
7 - 9 Volume	0	0		127	81	208			4 - 6 Volume	0	0		85	134	219		
7 - 9 Peak Hour				07:30	07:30	07:30			4 - 6 Peak Hour				16:45	16:30	17:00		
7 - 9 Pk Volume	0	0		77	47	124			4 - 6 Pk Volume	0	0		45	69	114		
Pk Hr Factor	0.000	0.000		0.802	0.783	0.795			Pk Hr Factor	0.000	0.000		0.750	0.863	0.814		

Prepared by National Data & Surveying Services

VOLUME

170th St W/O Brighton Way

Day: Tuesday
Date: 3/29/2022

City: Gardena
Project #: CA22_020100_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	115	102	217

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			0		0		0		12:00			1		1		2	
00:15			0		0		0		12:15			1		3		4	
00:30			1		0		1		12:30			3		2		5	
00:45			1	2	0		1	2	12:45			0	5	1	7	1	12
01:00			0		0		0		13:00			1		2		3	
01:15			0		0		0		13:15			3		1		4	
01:30			1		0		1		13:30			7		3		10	
01:45			0	1	0		0	1	13:45			1	12	2	8	3	20
02:00			0		0		0		14:00			1		1		2	
02:15			0		0		0		14:15			3		2		5	
02:30			0		0		0		14:30			1		2		3	
02:45			0		0		0		14:45			3	8	3	8	6	16
03:00			0		0		0		15:00			1		4		5	
03:15			0		0		0		15:15			0		1		1	
03:30			0		0		0		15:30			2		0		2	
03:45			0		0		0		15:45			1	4	0	5	1	9
04:00			1		0		1		16:00			3		2		5	
04:15			0		0		0		16:15			1		1		2	
04:30			0		0		0		16:30			2		3		5	
04:45			0	1	0		0	1	16:45			2	8	2	8	4	16
05:00			0		0		0		17:00			5		4		9	
05:15			0		0		0		17:15			4		5		9	
05:30			0		1		1		17:30			4		3		7	
05:45			0		0	1	0	1	17:45			3	16	0	12	3	28
06:00			0		0		0		18:00			5		1		6	
06:15			0		1		1		18:15			1		4		5	
06:30			0		0		0		18:30			1		1		2	
06:45			0		0	1	0	1	18:45			0	7	1	7	1	14
07:00			2		1		3		19:00			1		1		2	
07:15			2		2		4		19:15			0		1		1	
07:30			0		2		2		19:30			3		0		3	
07:45			4	8	3	8	7	16	19:45			1	5	1	3	2	8
08:00			2		2		4		20:00			3		2		5	
08:15			1		0		1		20:15			2		0		2	
08:30			1		0		1		20:30			0		0		0	
08:45			0	4	0	2	0	6	20:45			0	5	2	4	2	9
09:00			2		1		3		21:00			1		1		2	
09:15			1		1		2		21:15			1		1		2	
09:30			0		2		2		21:30			1		1		2	
09:45			0	3	2	6	2	9	21:45			2	5	0	3	2	8
10:00			2		3		5		22:00			0		2		2	
10:15			3		2		5		22:15			0		0		0	
10:30			2		2		4		22:30			0		0		0	
10:45			2	9	1	8	3	17	22:45			0		0	2	0	2
11:00			1		1		2		23:00			1		0		1	
11:15			4		4		8		23:15			0		2		2	
11:30			2		2		4		23:30			0		0		0	
11:45			4	11	0	7	4	18	23:45			0	1	0	2	0	3
TOTALS				39		33		72	TOTALS				76		69		145
SPLIT %				54.2%		45.8%		33.2%	SPLIT %				52.4%		47.6%		66.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	115	102	217

AM Peak Hour				11:00		07:15		11:00	PM Peak Hour				17:00		16:30		16:45
AM Pk Volume				11		9		18	PM Pk Volume				16		14		29
Pk Hr Factor				0.688		0.750		0.563	Pk Hr Factor				0.800		0.700		0.806
7 - 9 Volume	0	0		12		10		22	4 - 6 Volume	0	0		24		20		44
7 - 9 Peak Hour				07:00		07:15		07:15	4 - 6 Peak Hour				17:00		16:30		16:45
7 - 9 Pk Volume	0	0		8		9		17	4 - 6 Pk Volume	0	0		16		14		29
Pk Hr Factor	0.000	0.000		0.500		0.750		0.607	Pk Hr Factor	0.000	0.000		0.800		0.700		0.806

Prepared by National Data & Surveying Services

VOLUME

Normandie Ave N/O 169th St

Day: Tuesday
Date: 5/10/2022

City: Gardena
Project #: CA22_020160_001

DAILY TOTALS	NB	SB	EB	WB	Total
	13,366	11,224	0	0	24,590

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
0:00	36		11				47		**12:00**	206		175				381	
0:15	16		9				25		**12:15**	219		190				409	
0:30	17		3				20		**12:30**	202		159				361	
0:45	15	84	7	30			22	114	**12:45**	187	814	184	708			371	1522
1:00	9		7				16		**13:00**	185		191				376	
1:15	9		4				13		**13:15**	219		178				397	
1:30	6		8				14		**13:30**	210		217				427	
1:45	8	32	3	22			11	54	**13:45**	204	818	182	768			386	1586
2:00	9		2				11		**14:00**	216		171				387	
2:15	10		4				14		**14:15**	206		163				369	
2:30	8		6				14		**14:30**	211		185				396	
2:45	7	34	4	16			11	50	**14:45**	241	874	178	697			419	1571
3:00	12		4				16		**15:00**	216		238				454	
3:15	4		5				9		**15:15**	235		217				452	
3:30	4		4				8		**15:30**	282		232				514	
3:45	8	28	11	24			19	52	**15:45**	310	1043	222	909			532	1952
4:00	8		14				22		**16:00**	306		199				505	
4:15	20		16				36		**16:15**	274		208				482	
4:30	15		27				42		**16:30**	304		241				545	
4:45	21	64	30	87			51	151	**16:45**	322	1206	224	872			546	2078
5:00	19		24				43		**17:00**	282		218				500	
5:15	31		52				83		**17:15**	276		201				477	
5:30	44		65				109		**17:30**	322		246				568	
5:45	55	149	75	216			130	365	**17:45**	326	1206	207	872			533	2078
6:00	59		73				132		**18:00**	287		174				461	
6:15	73		83				156		**18:15**	273		154				427	
6:30	103		115				218		**18:30**	204		170				374	
6:45	103	338	140	411			243	749	**18:45**	216	980	143	641			359	1621
7:00	162		124				286		**19:00**	208		142				350	
7:15	171		175				346		**19:15**	164		135				299	
7:30	186		189				375		**19:30**	153		134				287	
7:45	225	744	281	769			506	1513	**19:45**	147	672	107	518			254	1190
8:00	248		304				552		**20:00**	135		91				226	
8:15	256		246				502		**20:15**	157		101				258	
8:30	250		187				437		**20:30**	117		86				203	
8:45	215	969	175	912			390	1881	**20:45**	96	505	59	337			155	842
9:00	176		136				312		**21:00**	71		53				124	
9:15	186		150				336		**21:15**	75		64				139	
9:30	170		166				336		**21:30**	73		70				143	
9:45	177	709	161	613			338	1322	**21:45**	77	296	71	258			148	554
10:00	162		152				314		**22:00**	62		61				123	
10:15	184		140				324		**22:15**	66		52				118	
10:30	197		166				363		**22:30**	60		40				100	
10:45	189	732	147	605			336	1337	**22:45**	41	229	43	196			84	425
11:00	175		159				334		**23:00**	40		26				66	
11:15	172		183				355		**23:15**	40		20				60	
11:30	169		160				329		**23:30**	31		16				47	
11:45	184	700	159	661			343	1361	**23:45**	29	140	20	82			49	222
TOTALS		4583		4366				**8949**	**TOTALS**		8783		6858				**15641**
SPLIT %		51.2%		48.8%				**36.4%**	**SPLIT %**		56.2%		43.8%				**63.6%**

DAILY TOTALS	NB	SB	EB	WB	Total
	13,366	11,224	0	0	24,590

AM Peak Hour	7:45	7:30			**7:45**				**PM Peak Hour**	17:15	15:00				**16:45**		
AM Pk Volume	979	1020			**1997**				**PM Pk Volume**	1211	909				**2091**		
Pk Hr Factor	0.956	0.839			**0.904**				**Pk Hr Factor**	0.929	0.955				**0.920**		
7 - 9 Volume	1713	1681	0	0	**3394**				**4 - 6 Volume**	2412	1744	0	0		**4156**		
7 - 9 Peak Hour	7:45	7:30			**7:45**				**4 - 6 Peak Hour**	16:00	16:15				**16:45**		
7 - 9 Pk Volume	979	1020	0	0	**1997**				**4 - 6 Pk Volume**	1206	891	0	0		**2091**		
Pk Hr Factor	0.956	0.839	0.000	0.000	**0.904**				**Pk Hr Factor**	0.936	0.924	0.000	0.000		**0.920**		

Prepared by National Data & Surveying Services

VOLUME

Normandie Ave N/O 169th St

Day: Wednesday
Date: 5/11/2022

City: Gardena
Project #: CA22_020160_001

DAILY TOTALS	NB	SB	EB	WB	Total
	13,189	11,142	0	0	24,331

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
0:00	20		16						36		**12:00**	166		174						340	
0:15	24		5						29		**12:15**	201		184						385	
0:30	26		8						34		**12:30**	183		178						361	
0:45	22	92	10	39					32	131	**12:45**	198	748	181	717					379	1465
1:00	17		5						22		**13:00**	175		192						367	
1:15	15		8						23		**13:15**	173		168						341	
1:30	8		7						15		**13:30**	207		162						369	
1:45	13	53	2	22					15	75	**13:45**	222	777	171	693					393	1470
2:00	12		5						17		**14:00**	206		185						391	
2:15	8		9						17		**14:15**	201		174						375	
2:30	11		5						16		**14:30**	241		213						454	
2:45	12	43	6	25					18	68	**14:45**	244	892	189	761					433	1653
3:00	8		3						11		**15:00**	240		291						531	
3:15	7		8						15		**15:15**	233		229						462	
3:30	4		9						13		**15:30**	296		230						526	
3:45	5	24	5	25					10	49	**15:45**	309	1078	222	972					531	2050
4:00	9		6						15		**16:00**	279		203						482	
4:15	11		18						29		**16:15**	293		213						506	
4:30	22		27						49		**16:30**	260		230						490	
4:45	20	62	16	67					36	129	**16:45**	303	1135	233	879					536	2014
5:00	26		39						65		**17:00**	302		228						530	
5:15	30		47						77		**17:15**	314		196						510	
5:30	32		62						94		**17:30**	299		227						526	
5:45	67	155	57	205					124	360	**17:45**	270	1185	218	869					488	2054
6:00	73		72						145		**18:00**	271		175						446	
6:15	79		77						156		**18:15**	235		177						412	
6:30	94		109						203		**18:30**	224		167						391	
6:45	116	362	112	370					228	732	**18:45**	185	915	130	649					315	1564
7:00	157		125						282		**19:00**	178		144						322	
7:15	162		176						338		**19:15**	177		132						309	
7:30	204		195						399		**19:30**	148		108						256	
7:45	222	745	269	765					491	1510	**19:45**	144	647	109	493					253	1140
8:00	255		320						575		**20:00**	131		106						237	
8:15	244		235						479		**20:15**	149		80						229	
8:30	253		191						444		**20:30**	122		81						203	
8:45	234	986	161	907					395	1893	**20:45**	122	524	51	318					173	842
9:00	178		162						340		**21:00**	124		75						199	
9:15	171		139						310		**21:15**	82		68						150	
9:30	145		139						284		**21:30**	78		67						145	
9:45	163	657	142	582					305	1239	**21:45**	74	358	58	268					132	626
10:00	147		137						284		**22:00**	69		49						118	
10:15	185		158						343		**22:15**	61		37						98	
10:30	167		140						307		**22:30**	52		34						86	
10:45	170	669	157	592					327	1261	**22:45**	50	232	25	145					75	377
11:00	169		173						342		**23:00**	42		34						76	
11:15	180		176						356		**23:15**	46		32						78	
11:30	164		167						331		**23:30**	38		21						59	
11:45	182	695	159	675					341	1370	**23:45**	29	155	17	104					46	259
TOTALS		4543		4274						**8817**	**TOTALS**		8646		6868						**15514**
SPLIT %		51.5%		48.5%						**36.2%**	**SPLIT %**		55.7%		44.3%						**63.8%**

DAILY TOTALS	NB	SB	EB	WB	Total
	13,189	11,142	0	0	24,331

AM Peak Hour	8:00	7:30			**7:45**	**PM Peak Hour**	16:45	15:00			**16:45**
AM Pk Volume	986	1019			**1989**	**PM Pk Volume**	1218	972			**2102**
Pk Hr Factor	0.967	0.796			**0.865**	**Pk Hr Factor**	0.970	0.835			**0.980**
7 - 9 Volume	1731	1672	0	0	**3403**	**4 - 6 Volume**	2320	1748	0	0	**4068**
7 - 9 Peak Hour	8:00	7:30			**7:45**	**4 - 6 Peak Hour**	16:45	16:15			**16:45**
7 - 9 Pk Volume	986	1019	0	0	**1989**	**4 - 6 Pk Volume**	1218	904	0	0	**2102**
Pk Hr Factor	0.967	0.796	0.000	0.000	**0.865**	**Pk Hr Factor**	0.970	0.970	0.000	0.000	**0.980**

Prepared by National Data & Surveying Services

VOLUME

169th St W/O Normandie Ave

Day: Tuesday
Date: 5/10/2022

City: Gardena
Project #: CA22_020160_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	715	853	1,568

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
0:00			0		1		1		12:00			14		17		31	
0:15			0		0		0		12:15			16		12		28	
0:30			2		0		2		12:30			7		10		17	
0:45			0	2	0	1	0	3	12:45			6	43	6	45	12	88
1:00			0		0		0		13:00			10		9		19	
1:15			0		1		1		13:15			11		6		17	
1:30			1		2		3		13:30			12		15		27	
1:45			1	2	0	3	1	5	13:45			9	42	12	42	21	84
2:00			0		1		1		14:00			12		8		20	
2:15			0		0		0		14:15			15		13		28	
2:30			0		1		1		14:30			11		18		29	
2:45			1	1	1	3	2	4	14:45			10	48	8	47	18	95
3:00			0		1		1		15:00			8		15		23	
3:15			0		2		2		15:15			14		18		32	
3:30			2		2		4		15:30			12		11		23	
3:45			2	4	2	7	4	11	15:45			10	44	12	56	22	100
4:00			1		2		3		16:00			17		18		35	
4:15			3		1		4		16:15			10		14		24	
4:30			3		2		5		16:30			13		17		30	
4:45			3	10	1	6	4	16	16:45			10	50	16	65	26	115
5:00			3		4		7		17:00			9		32		41	
5:15			12		4		16		17:15			5		23		28	
5:30			2		3		5		17:30			14		12		26	
5:45			7	24	3	14	10	38	17:45			16	44	19	86	35	130
6:00			5		3		8		18:00			10		15		25	
6:15			5		8		13		18:15			4		13		17	
6:30			6		8		14		18:30			12		13		25	
6:45			10	26	11	30	21	56	18:45			9	35	14	55	23	90
7:00			10		8		18		19:00			6		18		24	
7:15			11		7		18		19:15			4		14		18	
7:30			19		6		25		19:30			8		13		21	
7:45			22	62	18	39	40	101	19:45			7	25	12	57	19	82
8:00			27		19		46		20:00			6		10		16	
8:15			18		11		29		20:15			8		17		25	
8:30			17		14		31		20:30			10		13		23	
8:45			13	75	5	49	18	124	20:45			3	27	14	54	17	81
9:00			9		15		24		21:00			5		8		13	
9:15			4		9		13		21:15			2		10		12	
9:30			12		10		22		21:30			5		8		13	
9:45			7	32	11	45	18	77	21:45			6	18	6	32	12	50
10:00			11		11		22		22:00			5		5		10	
10:15			8		9		17		22:15			2		4		6	
10:30			8		10		18		22:30			1		5		6	
10:45			7	34	12	42	19	76	22:45			2	10	1	15	3	25
11:00			14		7		21		23:00			2		8		10	
11:15			12		17		29		23:15			5		1		6	
11:30			9		13		22		23:30			3		1		4	
11:45			10	45	11	48	21	93	23:45			2	12	2	12	4	24
TOTALS				317		287		604	TOTALS				398		566		964
SPLIT %				52.5%		47.5%		38.5%	SPLIT %				41.3%		58.7%		61.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	715	853	1,568

AM Peak Hour				7:30	7:45	7:45		PM Peak Hour				15:15	16:30	17:00
AM Pk Volume				86	62	146		PM Pk Volume				53	88	130
Pk Hr Factor				0.796	0.816	0.793		Pk Hr Factor				0.779	0.688	0.793
7 - 9 Volume	0	0		137	88	225		4 - 6 Volume	0	0		94	151	245
7 - 9 Peak Hour				7:30	7:45	7:45		4 - 6 Peak Hour				16:00	16:30	17:00
7 - 9 Pk Volume	0	0		86	62	146		4 - 6 Pk Volume	0	0		50	88	130
Pk Hr Factor	0.000	0.000		0.796	0.816	0.793		Pk Hr Factor	0.000	0.000		0.735	0.688	0.793

Prepared by National Data & Surveying Services

VOLUME

169th St W/O Normandie Ave

Day: Wednesday
Date: 5/11/2022

City: Gardena
Project #: CA22_020160_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	706	850	1,556

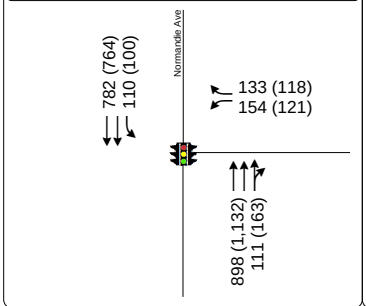
AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
0:00			1		2		3		12:00			9		9		18	
0:15			0		1		1		12:15			6		9		15	
0:30			1		1		2		12:30			6		12		18	
0:45			2	4	2	6	4	10	12:45			7	28	16	46	23	74
1:00			1		1		2		13:00			11		16		27	
1:15			0		1		1		13:15			14		11		25	
1:30			1		0		1		13:30			8		14		22	
1:45			2	4	1	3	3	7	13:45			9	42	9	50	18	92
2:00			1		1		2		14:00			11		20		31	
2:15			1		0		1		14:15			12		11		23	
2:30			0		0		0		14:30			14		16		30	
2:45			2	4	2	3	4	7	14:45			12	49	14	61	26	110
3:00			2		1		3		15:00			14		15		29	
3:15			1		0		1		15:15			10		11		21	
3:30			1		1		2		15:30			22		22		44	
3:45			0	4	2	4	2	8	15:45			7	53	12	60	19	113
4:00			0		2		2		16:00			11		21		32	
4:15			3		2		5		16:15			13		21		34	
4:30			1		0		1		16:30			16		16		32	
4:45			4	8	3	7	7	15	16:45			10	50	14	72	24	122
5:00			1		5		6		17:00			9		24		33	
5:15			7		2		9		17:15			9		17		26	
5:30			6		2		8		17:30			11		18		29	
5:45			7	21	4	13	11	34	17:45			12	41	13	72	25	113
6:00			4		3		7		18:00			17		14		31	
6:15			5		7		12		18:15			7		14		21	
6:30			15		7		22		18:30			4		15		19	
6:45			12	36	11	28	23	64	18:45			9	37	9	52	18	89
7:00			16		9		25		19:00			8		13		21	
7:15			11		9		20		19:15			11		12		23	
7:30			14		7		21		19:30			5		11		16	
7:45			21	62	21	46	42	108	19:45			11	35	13	49	24	84
8:00			29		16		45		20:00			5		5		10	
8:15			16		12		28		20:15			6		10		16	
8:30			17		13		30		20:30			4		11		15	
8:45			9	71	10	51	19	122	20:45			3	18	6	32	9	50
9:00			12		8		20		21:00			6		8		14	
9:15			10		8		18		21:15			1		8		9	
9:30			6		11		17		21:30			3		9		12	
9:45			4	32	9	36	13	68	21:45			6	16	8	33	14	49
10:00			7		12		19		22:00			2		3		5	
10:15			11		10		21		22:15			3		4		7	
10:30			9		13		22		22:30			4		7		11	
10:45			7	34	5	40	12	74	22:45			2	11	1	15	3	26
11:00			15		11		26		23:00			1		3		4	
11:15			10		18		28		23:15			2		4		6	
11:30			6		11		17		23:30			1		2		3	
11:45			10	41	18	58	28	99	23:45			1	5	4	13	5	18
TOTALS				321		295		616	TOTALS				385		555		940
SPLIT %				52.1%		47.9%		39.6%	SPLIT %				41.0%		59.0%		60.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	706	850	1,556

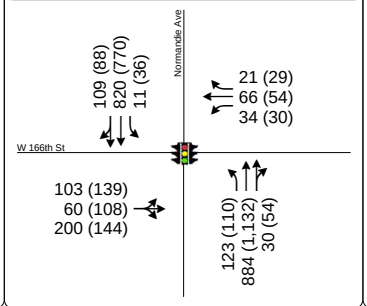
AM Peak Hour				7:45		7:45		**7:45**	PM Peak Hour				14:45		15:30		**15:30**
AM Pk Volume				83		62		**145**	PM Pk Volume				58		76		**129**
Pk Hr Factor				0.716		0.738		**0.806**	Pk Hr Factor				0.659		0.864		**0.733**
7 - 9 Volume	0	0		133		97		**230**	4 - 6 Volume	0	0		91		144		**235**
7 - 9 Peak Hour				7:45		7:45		**7:45**	4 - 6 Peak Hour				16:00		16:15		**16:15**
7 - 9 Pk Volume	0	0		83		62		**145**	4 - 6 Pk Volume	0	0		50		75		**123**
Pk Hr Factor	0.000	0.000		0.716		0.738		**0.806**	Pk Hr Factor	0.000	0.000		0.781		0.781		**0.904**

Appendix C: Traffic Volumes and Lane Configurations

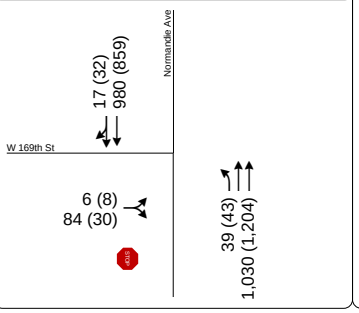
1. Normandie Ave/W Gardena Blvd



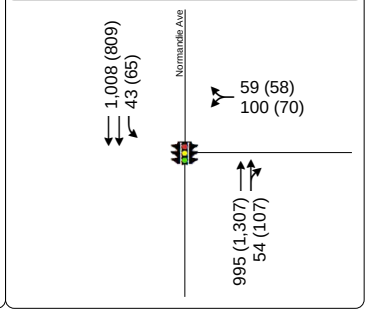
2. Normandie Ave/W 166th St



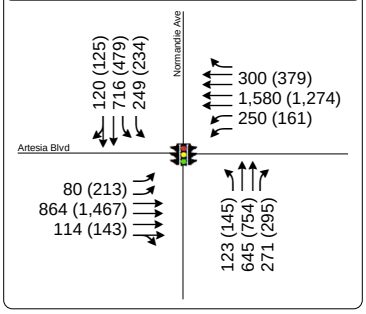
3. Normandie Ave/W 169th St

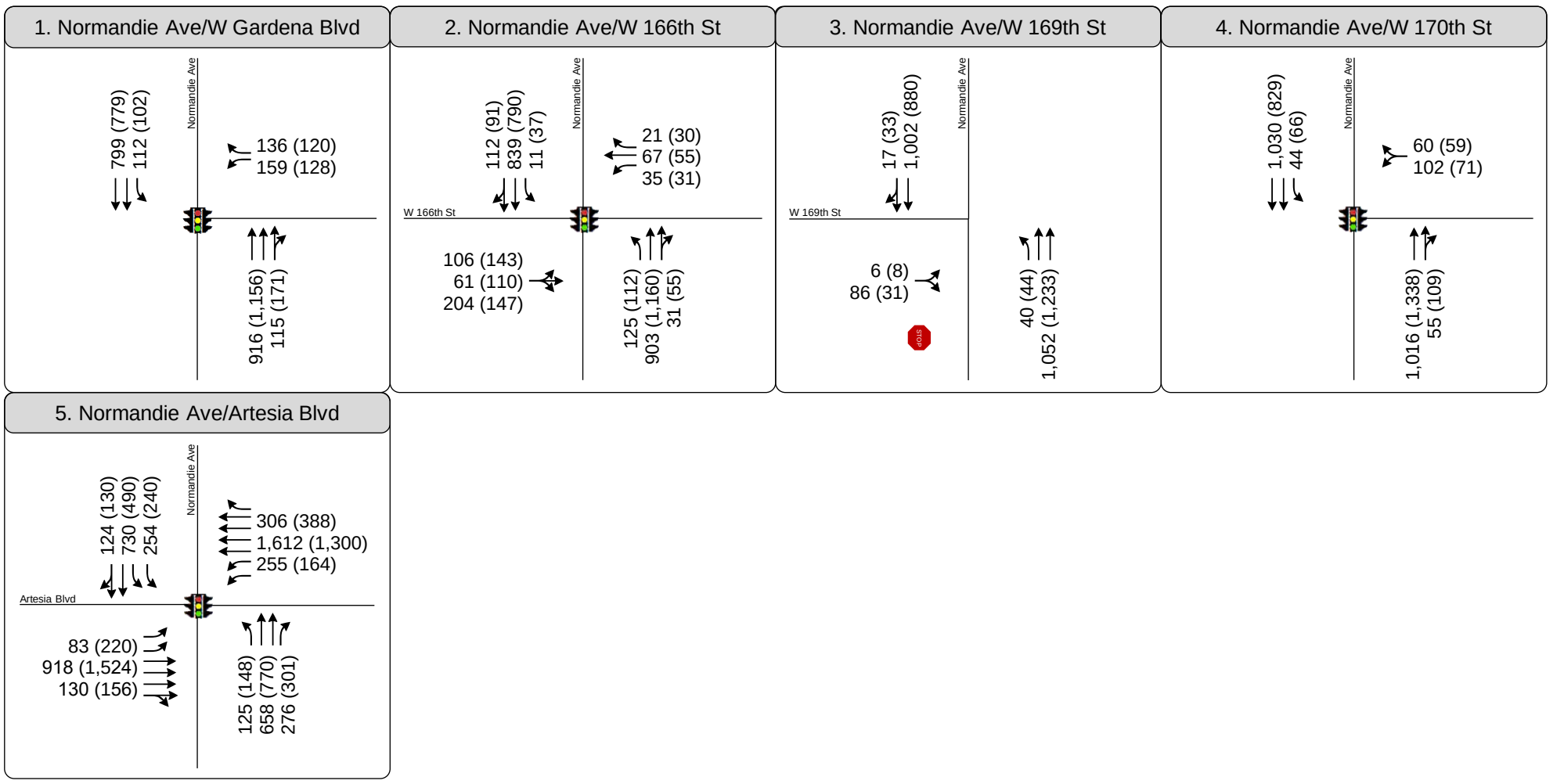


4. Normandie Ave/W 170th St



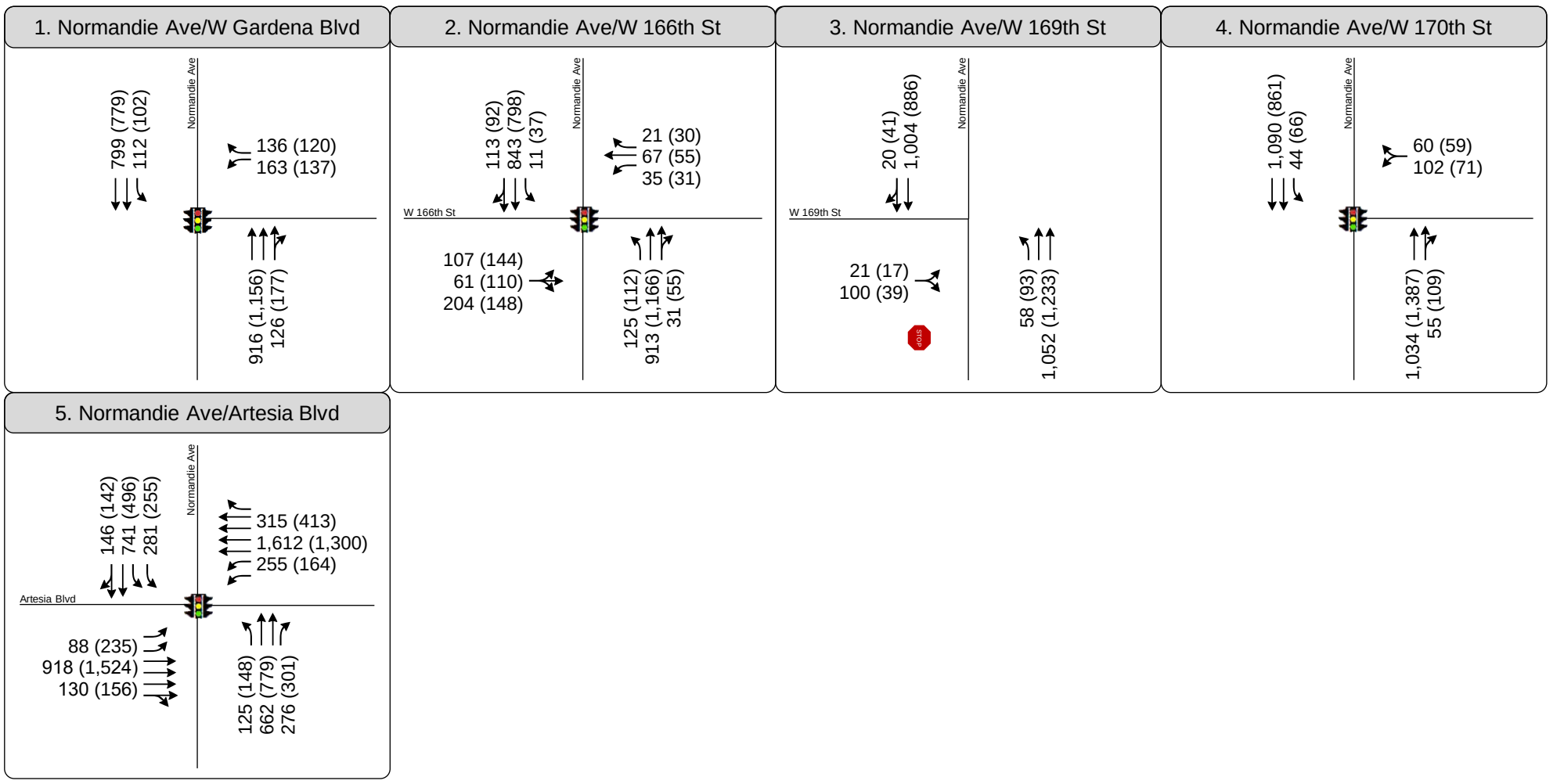
5. Normandie Ave/Artesia Blvd



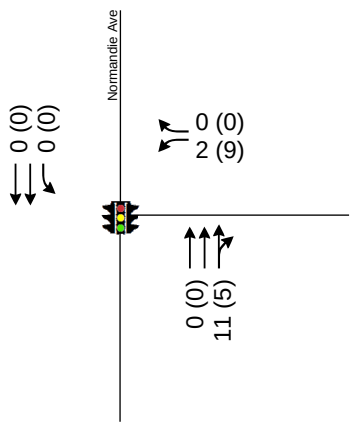


Peak Hour Traffic Volumes & Lane Configurations
Opening Year 2027 AM (PM)

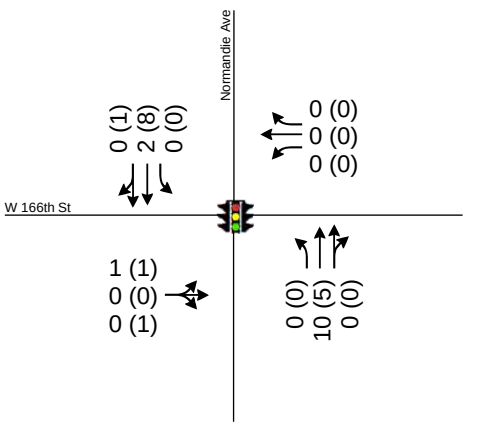

West Gardena Boulevard
West Gardena Boulevard
West 166th Street
Gardena
West 169th St
West 168th Street
West 170th Street
West Artesia Boulevard
South Western Avenue
La Salle Avenue
Denker Avenue
Halldale Av
Brighton Avenue
Berendo Avenue
New Hampshire Avenue
South Vermont Avenue
South Normandie Avenue
South Gardena Park
1
2
3
4
5
N


1. Normandie Ave/W Gardena Blvd
Normandie Ave
799 (779)
112 (102)
136 (120)
163 (137)
916 (1,156)
126 (177)
2. Normandie Ave/W 166th St
Normandie Ave
W 166th St
113 (92)
843 (798)
11 (37)
21 (30)
67 (55)
35 (31)
107 (144)
61 (110)
204 (148)
125 (112)
913 (1,166)
31 (55)
3. Normandie Ave/W 169th St
Normandie Ave
W 169th St
20 (41)
1,004 (886)
21 (17)
100 (39)
58 (93)
1,052 (1,233)
4. Normandie Ave/W 170th St
Normandie Ave
1,090 (861)
44 (66)
60 (59)
102 (71)
1,034 (1,387)
55 (109)
5. Normandie Ave/Artesia Blvd
Normandie Ave
Artesia Blvd
146 (142)
741 (496)
281 (255)
315 (413)
1,612 (1,300)
255 (164)
88 (235)
918 (1,524)
130 (156)
125 (148)
662 (779)
276 (301)

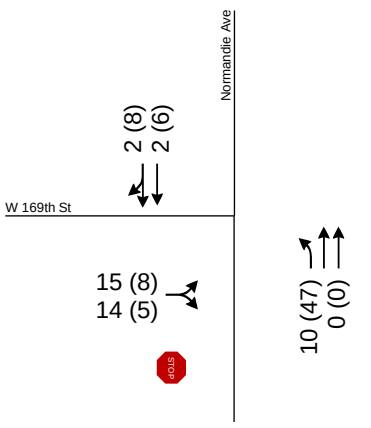
1. Normandie Ave/W Gardena Blvd



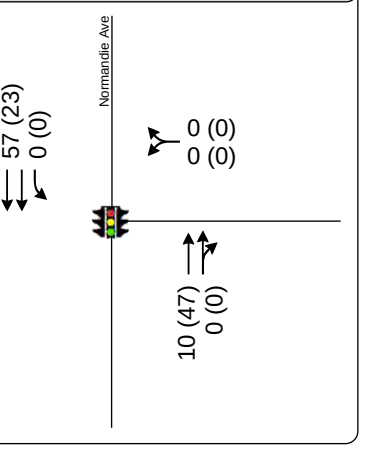
2. Normandie Ave/W 166th St



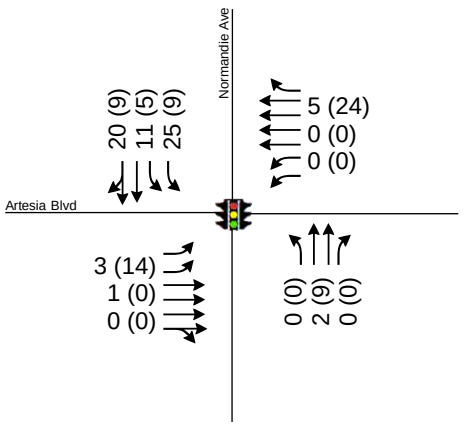
3. Normandie Ave/W 169th St



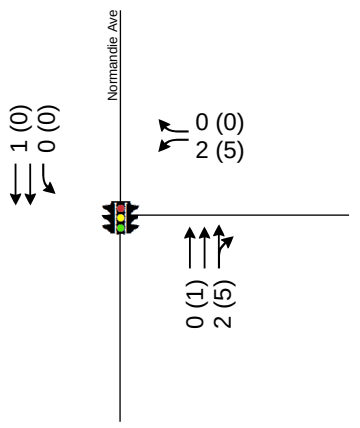
4. Normandie Ave/W 170th St



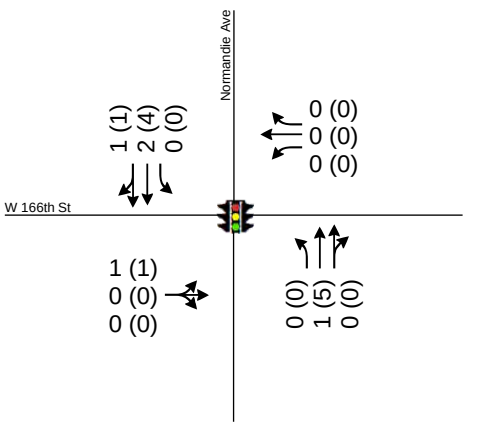
5. Normandie Ave/Artesia Blvd



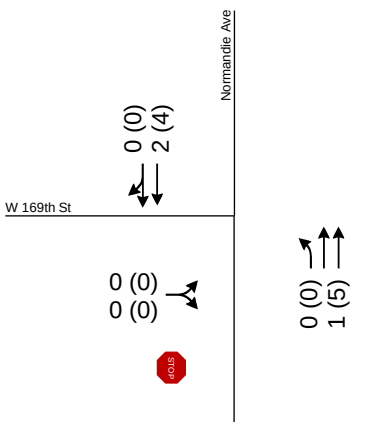
1. Normandie Ave/W Gardena Blvd



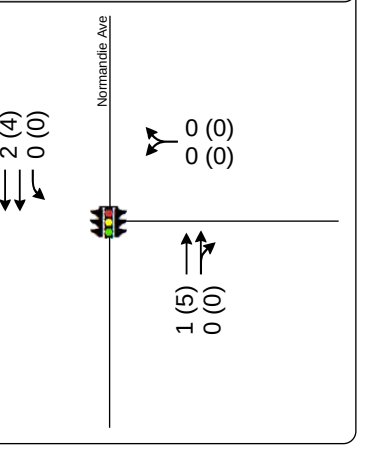
2. Normandie Ave/W 166th St



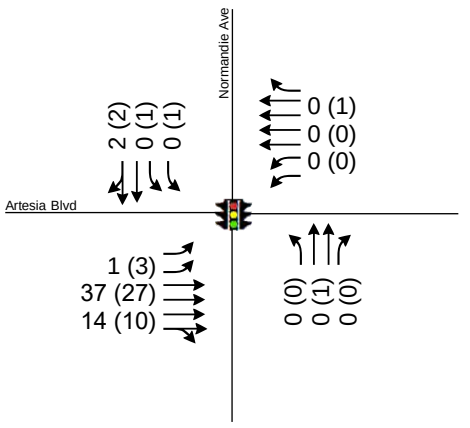
3. Normandie Ave/W 169th St



4. Normandie Ave/W 170th St



5. Normandie Ave/Artesia Blvd



Appendix D: LOS and Queuing Worksheets

Existing (2022) Conditions

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	154	133	898	111	110	782
Future Volume (veh/h)	154	133	898	111	110	782
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1945	1870	1870	1870	1870
Adj Flow Rate, veh/h	166	28	966	102	118	841
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	207	192	3206	337	474	2745
Arrive On Green	0.12	0.12	0.69	0.69	0.04	0.77
Sat Flow, veh/h	1781	1648	4842	492	1781	3647
Grp Volume(v), veh/h	166	28	703	365	118	841
Grp Sat Flow(s),veh/h/ln	1781	1648	1702	1762	1781	1777
Q Serve(g_s), s	8.2	1.4	7.4	7.4	1.6	6.3
Cycle Q Clear(g_c), s	8.2	1.4	7.4	7.4	1.6	6.3
Prop In Lane	1.00	1.00		0.28	1.00	
Lane Grp Cap(c), veh/h	207	192	2335	1209	474	2745
V/C Ratio(X)	0.80	0.15	0.30	0.30	0.25	0.31
Avail Cap(c_a), veh/h	416	385	2335	1209	616	2745
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.79	0.79	1.00	1.00
Uniform Delay (d), s/veh	38.7	35.7	5.6	5.6	3.6	3.1
Incr Delay (d2), s/veh	7.0	0.3	0.3	0.5	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.6	2.2	2.4	0.4	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	45.7	36.1	5.9	6.1	3.7	3.3
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	194		1068			959
Approach Delay, s/veh	44.3		5.9			3.4
Approach LOS	D		A			A

Timer - Assigned Phs	2	4	7	8
Phs Duration (G+Y+Rc), s	15.5	74.5	7.8	66.7
Change Period (Y+Rc), s	5.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	21.0	59.0	11.0	44.0
Max Q Clear Time (g_c+I1), s	10.2	8.3	3.6	9.4
Green Ext Time (p_c), s	0.4	10.4	0.0	5.2

Intersection Summary	
HCM 6th Ctrl Delay	8.2
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	60	200	34	66	21	123	884	30	11	820	109
Future Volume (veh/h)	103	60	200	34	66	21	123	884	30	11	820	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1945	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	112	65	154	37	72	6	134	961	30	12	891	104
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	211	114	202	417	524	455	333	1850	58	337	1681	196
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.53	0.53	0.53	0.53	0.53	0.53
Sat Flow, veh/h	421	405	719	1154	1870	1625	565	3514	110	567	3193	373
Grp Volume(v), veh/h	331	0	0	37	72	6	134	486	505	12	496	499
Grp Sat Flow(s),veh/h/ln	1546	0	0	1154	1870	1625	565	1777	1847	567	1777	1789
Q Serve(g_s), s	7.5	0.0	0.0	0.0	1.5	0.1	10.6	9.2	9.2	0.7	9.5	9.5
Cycle Q Clear(g_c), s	10.0	0.0	0.0	1.6	1.5	0.1	20.0	9.2	9.2	9.9	9.5	9.5
Prop In Lane	0.34		0.47	1.00		1.00	1.00		0.06	1.00		0.21
Lane Grp Cap(c), veh/h	526	0	0	417	524	455	333	935	972	337	935	942
V/C Ratio(X)	0.63	0.00	0.00	0.09	0.14	0.01	0.40	0.52	0.52	0.04	0.53	0.53
Avail Cap(c_a), veh/h	892	0	0	697	977	849	386	1100	1143	389	1100	1108
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.9	0.0	0.0	14.0	13.9	13.4	14.6	8.0	8.0	11.2	8.0	8.0
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.1	0.1	0.0	0.8	0.4	0.4	0.0	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.0	0.0	0.3	0.6	0.0	1.2	2.6	2.7	0.1	2.7	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.1	0.0	0.0	14.0	14.0	13.5	15.4	8.4	8.4	11.3	8.5	8.5
LnGrp LOS	B	A	A	B	B	B	B	A	A	B	A	A
Approach Vol, veh/h		331			115			1125			1007	
Approach Delay, s/veh		18.1			14.0			9.2			8.5	
Approach LOS		B			B			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	19.5	32.2	19.5	32.2
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	27.0	32.0	27.0	32.0
Max Q Clear Time (g_c+I1), s	3.6	11.9	12.0	22.0
Green Ext Time (p_c), s	0.5	6.5	1.8	5.2

Intersection Summary	
HCM 6th Ctrl Delay	10.3
HCM 6th LOS	B

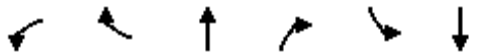
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	84	39	1030	980	17
Future Vol, veh/h	6	84	39	1030	980	17
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	94	44	1157	1101	19

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1781	563	1123	0	-	0
Stage 1	1114	-	-	-	-	-
Stage 2	667	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	73	470	618	-	-	-
Stage 1	276	-	-	-	-	-
Stage 2	472	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	67	469	616	-	-	-
Mov Cap-2 Maneuver	67	-	-	-	-	-
Stage 1	256	-	-	-	-	-
Stage 2	471	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.3	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	616	-	335	-	-
HCM Lane V/C Ratio	0.071	-	0.302	-	-
HCM Control Delay (s)	11.3	-	20.3	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.2	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	100	59	995	54	43	1008
Future Volume (veh/h)	100	59	995	54	43	1008
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.99		0.99	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	109	35	1082	55	47	1096
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	155	50	2045	104	398	2113
Arrive On Green	0.12	0.12	0.59	0.59	0.59	0.59
Sat Flow, veh/h	1298	417	3533	175	494	3647
Grp Volume(v), veh/h	145	0	559	578	47	1096
Grp Sat Flow(s),veh/h/ln	1727	0	1777	1838	494	1777
Q Serve(g_s), s	3.0	0.0	6.8	6.8	2.3	6.6
Cycle Q Clear(g_c), s	3.0	0.0	6.8	6.8	9.1	6.6
Prop In Lane	0.75	0.24		0.10	1.00	
Lane Grp Cap(c), veh/h	206	0	1057	1093	398	2113
V/C Ratio(X)	0.70	0.00	0.53	0.53	0.12	0.52
Avail Cap(c_a), veh/h	1411	0	2394	2476	770	4789
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.5	0.0	4.4	4.4	7.1	4.4
Incr Delay (d2), s/veh	4.3	0.0	0.4	0.4	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.9	1.0	0.2	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.9	0.0	4.8	4.8	7.2	4.6
LnGrp LOS	B	A	A	A	A	A
Approach Vol, veh/h	145		1137			1143
Approach Delay, s/veh	19.9		4.8			4.7
Approach LOS	B		A			A

Timer - Assigned Phs				4		6	8
Phs Duration (G+Y+Rc), s				27.3		9.4	27.3
Change Period (Y+Rc), s				5.5		5.0	5.5
Max Green Setting (Gmax), s				49.5		30.0	49.5
Max Q Clear Time (g_c+I1), s				11.1		5.0	8.8
Green Ext Time (p_c), s				10.7		0.4	9.3

Intersection Summary	
HCM 6th Ctrl Delay	5.6
HCM 6th LOS	A

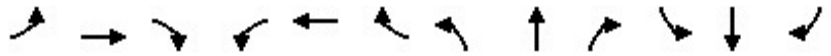
Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	864	114	250	1580	300	123	645	271	249	716	120
Future Volume (veh/h)	80	864	114	250	1580	300	123	645	271	249	716	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1945	1870	1870	1870
Adj Flow Rate, veh/h	84	909	99	263	1663	134	129	679	158	262	754	114
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	216	2151	231	302	2493	613	155	1007	459	316	889	134
Arrive On Green	0.06	0.36	0.36	0.09	0.39	0.39	0.09	0.28	0.28	0.09	0.29	0.29
Sat Flow, veh/h	3456	5932	638	3456	6434	1583	1781	3554	1621	3456	3088	467
Grp Volume(v), veh/h	84	737	271	263	1663	134	129	679	158	262	434	434
Grp Sat Flow(s),veh/h/ln	1728	1609	1745	1728	1609	1583	1781	1777	1621	1728	1777	1777
Q Serve(g_s), s	2.8	13.8	14.1	9.0	25.6	6.8	8.6	20.3	9.3	8.9	27.6	27.6
Cycle Q Clear(g_c), s	2.8	13.8	14.1	9.0	25.6	6.8	8.6	20.3	9.3	8.9	27.6	27.6
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	216	1749	633	302	2493	613	155	1007	459	316	512	512
V/C Ratio(X)	0.39	0.42	0.43	0.87	0.67	0.22	0.83	0.67	0.34	0.83	0.85	0.85
Avail Cap(c_a), veh/h	302	1749	633	302	2493	613	171	1140	520	331	570	570
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.80	0.80	0.80
Uniform Delay (d), s/veh	54.0	28.8	28.9	54.1	30.4	24.6	53.9	38.1	34.1	53.6	40.2	40.2
Incr Delay (d2), s/veh	0.4	0.7	2.1	22.0	1.4	0.8	24.2	1.8	0.8	11.8	9.6	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.2	6.0	4.7	9.7	2.7	4.8	9.0	3.7	4.4	13.2	13.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.5	29.5	31.0	76.1	31.8	25.4	78.2	39.9	34.9	65.4	49.8	49.9
LnGrp LOS	D	C	C	E	C	C	E	D	C	E	D	D
Approach Vol, veh/h		1092			2060			966			1130	
Approach Delay, s/veh		31.8			37.0			44.2			53.4	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	49.0	14.9	40.1	13.0	52.0	15.5	39.5
Change Period (Y+Rc), s	5.5	5.5	4.5	5.5	5.5	5.5	4.5	5.5
Max Green Setting (Gmax), s	10.5	38.5	11.5	38.5	10.5	38.5	11.5	38.5
Max Q Clear Time (g_c+I1), s	11.0	16.1	10.6	29.6	4.8	27.6	10.9	22.3
Green Ext Time (p_c), s	0.0	10.1	0.0	5.0	0.0	9.3	0.0	7.0

Intersection Summary	
HCM 6th Ctrl Delay	40.8
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	864	114	250	1580	300	123	645	271	249	716	120
Future Volume (veh/h)	80	864	114	250	1580	300	123	645	271	249	716	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1945	1870	1870	1870
Adj Flow Rate, veh/h	87	939	102	272	1717	138	134	701	163	271	778	118
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	218	2101	226	302	2436	599	160	1029	469	324	906	137
Arrive On Green	0.06	0.35	0.35	0.09	0.38	0.38	0.09	0.29	0.29	0.09	0.29	0.29
Sat Flow, veh/h	3456	5933	637	3456	6434	1583	1781	3554	1621	3456	3086	468
Grp Volume(v), veh/h	87	762	279	272	1717	138	134	701	163	271	448	448
Grp Sat Flow(s),veh/h/ln	1728	1609	1745	1728	1609	1583	1781	1777	1621	1728	1777	1777
Q Serve(g_s), s	2.9	14.5	14.8	9.4	27.1	7.1	8.9	21.0	9.5	9.3	28.6	28.6
Cycle Q Clear(g_c), s	2.9	14.5	14.8	9.4	27.1	7.1	8.9	21.0	9.5	9.3	28.6	28.6
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	218	1709	618	302	2436	599	160	1029	469	324	522	522
V/C Ratio(X)	0.40	0.45	0.45	0.90	0.70	0.23	0.84	0.68	0.35	0.84	0.86	0.86
Avail Cap(c_a), veh/h	302	1709	618	302	2436	599	171	1140	520	331	570	570
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.80	0.80	0.80
Uniform Delay (d), s/veh	54.0	29.7	29.8	54.2	31.6	25.4	53.8	37.7	33.7	53.5	40.0	40.0
Incr Delay (d2), s/veh	0.4	0.8	2.4	27.1	1.7	0.9	26.0	1.9	0.8	12.8	10.5	10.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.5	6.4	5.1	10.3	2.8	5.1	9.3	3.8	4.6	13.8	13.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.5	30.6	32.2	81.4	33.3	26.3	79.7	39.6	34.4	66.2	50.5	50.6
LnGrp LOS	D	C	C	F	C	C	E	D	C	E	D	D
Approach Vol, veh/h		1128			2127			998			1167	
Approach Delay, s/veh		32.8			39.0			44.2			54.2	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	48.0	15.3	40.7	13.1	50.9	15.8	40.2
Change Period (Y+Rc), s	5.5	5.5	4.5	5.5	5.5	5.5	4.5	5.5
Max Green Setting (Gmax), s	10.5	38.5	11.5	38.5	10.5	38.5	11.5	38.5
Max Q Clear Time (g_c+I1), s	11.4	16.8	10.9	30.6	4.9	29.1	11.3	23.0
Green Ext Time (p_c), s	0.0	10.3	0.0	4.7	0.0	8.2	0.0	7.1

Intersection Summary	
HCM 6th Ctrl Delay	41.9
HCM 6th LOS	D

HCM 6th Signalized Intersection Summary
1: Normandie Ave & W Gardena Blvd

04/28/2022

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	121	118	1132	163	100	764
Future Volume (veh/h)	121	118	1132	163	100	764
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1961	1885	1885	1885	1885
Adj Flow Rate, veh/h	123	23	1155	150	102	780
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	159	147	3373	438	414	2907
Arrive On Green	0.09	0.09	0.73	0.73	0.04	0.81
Sat Flow, veh/h	1795	1662	4765	596	1795	3676
Grp Volume(v), veh/h	123	23	862	443	102	780
Grp Sat Flow(s),veh/h/ln	1795	1662	1716	1760	1795	1791
Q Serve(g_s), s	6.7	1.3	8.9	8.9	1.3	5.2
Cycle Q Clear(g_c), s	6.7	1.3	8.9	8.9	1.3	5.2
Prop In Lane	1.00	1.00		0.34	1.00	
Lane Grp Cap(c), veh/h	159	147	2518	1292	414	2907
V/C Ratio(X)	0.78	0.16	0.34	0.34	0.25	0.27
Avail Cap(c_a), veh/h	377	349	2518	1292	544	2907
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.59	0.59	1.00	1.00
Uniform Delay (d), s/veh	44.6	42.1	4.7	4.7	3.1	2.3
Incr Delay (d2), s/veh	7.9	0.5	0.2	0.4	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.5	2.5	2.7	0.3	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	52.5	42.6	4.9	5.2	3.2	2.5
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	146		1305			882
Approach Delay, s/veh	50.9		5.0			2.6
Approach LOS	D		A			A

Timer - Assigned Phs	2	4	7	8
Phs Duration (G+Y+Rc), s	13.8	86.2	7.8	78.4
Change Period (Y+Rc), s	5.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	21.0	69.0	11.0	54.0
Max Q Clear Time (g_c+I1), s	8.7	7.2	3.3	10.9
Green Ext Time (p_c), s	0.3	9.5	0.0	7.0

Intersection Summary	
HCM 6th Ctrl Delay	7.0
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	108	144	30	54	29	110	1132	54	36	770	88
Future Volume (veh/h)	139	108	144	30	54	29	110	1132	54	36	770	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1961	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	142	110	113	31	55	10	112	1155	50	37	786	78
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
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	257	167	144	450	551	485	370	1749	76	267	1647	163
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.50	0.50	0.50	0.50	0.50	0.50
Sat Flow, veh/h	524	570	491	1166	1885	1658	644	3492	151	467	3288	326
Grp Volume(v), veh/h	365	0	0	31	55	10	112	592	613	37	428	436
Grp Sat Flow(s),veh/h/ln	1585	0	0	1166	1885	1658	644	1791	1853	467	1791	1823
Q Serve(g_s), s	8.3	0.0	0.0	0.0	1.0	0.2	6.7	11.9	11.9	3.1	7.6	7.6
Cycle Q Clear(g_c), s	10.1	0.0	0.0	1.1	1.0	0.2	14.3	11.9	11.9	15.1	7.6	7.6
Prop In Lane	0.39		0.31	1.00		1.00	1.00		0.08	1.00		0.18
Lane Grp Cap(c), veh/h	567	0	0	450	551	485	370	897	928	267	897	913
V/C Ratio(X)	0.64	0.00	0.00	0.07	0.10	0.02	0.30	0.66	0.66	0.14	0.48	0.48
Avail Cap(c_a), veh/h	979	0	0	759	1052	925	473	1184	1225	342	1184	1205
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.6	0.0	0.0	12.5	12.5	12.2	12.6	9.0	9.0	14.6	7.9	7.9
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.1	0.1	0.0	0.5	0.8	0.8	0.2	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	0.0	0.2	0.4	0.1	0.8	3.4	3.5	0.3	2.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.8	0.0	0.0	12.6	12.6	12.2	13.1	9.8	9.8	14.9	8.3	8.3
LnGrp LOS	B	A	A	B	B	B	B	A	A	B	A	A
Approach Vol, veh/h		365			96			1317			901	
Approach Delay, s/veh		16.8			12.5			10.1			8.6	
Approach LOS		B			B			B			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	19.2	29.2	19.2	29.2
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	27.0	32.0	27.0	32.0
Max Q Clear Time (g_c+I1), s	3.1	17.1	12.1	16.3
Green Ext Time (p_c), s	0.4	5.1	2.0	8.0

Intersection Summary	
HCM 6th Ctrl Delay	10.6
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	30	43	1204	859	32
Future Vol, veh/h	8	30	43	1204	859	32
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	8	31	45	1254	895	33

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1632	467	931	0	-	0
Stage 1	915	-	-	-	-	-
Stage 2	717	-	-	-	-	-
Critical Hdwy	6.82	6.92	4.12	-	-	-
Critical Hdwy Stg 1	5.82	-	-	-	-	-
Critical Hdwy Stg 2	5.82	-	-	-	-	-
Follow-up Hdwy	3.51	3.31	2.21	-	-	-
Pot Cap-1 Maneuver	93	545	737	-	-	-
Stage 1	353	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	87	543	735	-	-	-
Mov Cap-2 Maneuver	87	-	-	-	-	-
Stage 1	330	-	-	-	-	-
Stage 2	446	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.5	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	735	-	258	-	-
HCM Lane V/C Ratio	0.061	-	0.153	-	-
HCM Control Delay (s)	10.2	-	21.5	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	-	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	70	58	1307	107	65	809
Future Volume (veh/h)	70	58	1307	107	65	809
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.99		0.99	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	74	29	1390	110	69	861
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	116	45	2186	172	317	2330
Arrive On Green	0.09	0.09	0.65	0.65	0.65	0.65
Sat Flow, veh/h	1232	483	3456	265	353	3676
Grp Volume(v), veh/h	104	0	738	762	69	861
Grp Sat Flow(s),veh/h/ln	1731	0	1791	1836	353	1791
Q Serve(g_s), s	2.4	0.0	10.1	10.2	6.0	4.5
Cycle Q Clear(g_c), s	2.4	0.0	10.1	10.2	16.2	4.5
Prop In Lane	0.71	0.28		0.14	1.00	
Lane Grp Cap(c), veh/h	162	0	1165	1194	317	2330
V/C Ratio(X)	0.64	0.00	0.63	0.64	0.22	0.37
Avail Cap(c_a), veh/h	1265	0	2159	2213	513	4318
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.9	0.0	4.3	4.3	9.1	3.3
Incr Delay (d2), s/veh	4.2	0.0	0.6	0.6	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	1.3	1.3	0.3	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.1	0.0	4.8	4.9	9.5	3.4
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	104		1500			930
Approach Delay, s/veh	22.1		4.9			3.9
Approach LOS	C		A			A

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	32.2	8.9	32.2
Change Period (Y+Rc), s	5.5	5.0	5.5
Max Green Setting (Gmax), s	49.5	30.0	49.5
Max Q Clear Time (g_c+I1), s	18.2	4.4	12.2
Green Ext Time (p_c), s	8.5	0.3	14.4

Intersection Summary	
HCM 6th Ctrl Delay	5.2
HCM 6th LOS	A

Notes

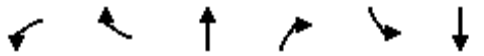
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	213	1467	143	161	1274	379	145	754	295	234	479	125
Future Volume (veh/h)	213	1467	143	161	1274	379	145	754	295	234	479	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1961	1885	1885	1885
Adj Flow Rate, veh/h	222	1528	135	168	1327	236	151	785	188	244	499	109
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	276	2341	207	231	2405	579	178	1036	463	298	806	175
Arrive On Green	0.08	0.38	0.38	0.07	0.37	0.37	0.10	0.29	0.29	0.09	0.28	0.28
Sat Flow, veh/h	3483	6104	539	3483	6485	1561	1795	3582	1599	3483	2924	635
Grp Volume(v), veh/h	222	1217	446	168	1327	236	151	785	188	244	305	303
Grp Sat Flow(s),veh/h/ln	1742	1621	1779	1742	1621	1561	1795	1791	1599	1742	1791	1768
Q Serve(g_s), s	7.5	24.7	24.7	5.7	19.4	13.4	9.9	23.9	11.4	8.3	17.8	18.0
Cycle Q Clear(g_c), s	7.5	24.7	24.7	5.7	19.4	13.4	9.9	23.9	11.4	8.3	17.8	18.0
Prop In Lane	1.00		0.30	1.00		1.00	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	276	1866	682	231	2405	579	178	1036	463	298	494	488
V/C Ratio(X)	0.81	0.65	0.65	0.73	0.55	0.41	0.85	0.76	0.41	0.82	0.62	0.62
Avail Cap(c_a), veh/h	276	1866	682	276	2405	579	232	1149	513	305	500	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94
Uniform Delay (d), s/veh	54.3	30.4	30.4	54.9	29.9	28.0	53.2	38.8	34.3	53.9	37.9	38.0
Incr Delay (d2), s/veh	14.8	1.8	4.8	5.6	0.9	2.1	16.3	3.2	1.0	13.8	2.8	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	9.5	11.0	2.6	7.4	5.3	5.2	10.8	4.5	4.2	8.1	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.1	32.2	35.2	60.5	30.8	30.1	69.4	42.0	35.3	67.8	40.7	40.9
LnGrp LOS	E	C	D	E	C	C	E	D	D	E	D	D
Approach Vol, veh/h		1885			1731			1124			852	
Approach Delay, s/veh		37.3			33.6			44.5			48.5	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	51.5	16.4	38.6	15.0	50.0	14.8	40.2
Change Period (Y+Rc), s	5.5	5.5	4.5	5.5	5.5	5.5	4.5	5.5
Max Green Setting (Gmax), s	8.0	40.5	15.5	33.5	9.5	40.5	10.5	38.5
Max Q Clear Time (g_c+I1), s	11.7	26.7	11.9	20.0	9.5	21.4	10.3	25.9
Green Ext Time (p_c), s	0.0	11.0	0.1	4.6	0.0	13.4	0.0	6.9

Intersection Summary	
HCM 6th Ctrl Delay	39.3
HCM 6th LOS	D

Opening Year (2027) Conditions



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	159	136	916	115	112	799
Future Volume (veh/h)	159	136	916	115	112	799
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1945	1870	1870	1870	1870
Adj Flow Rate, veh/h	167	16	964	107	118	841
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	207	192	3188	353	473	2745
Arrive On Green	0.12	0.12	0.69	0.69	0.04	0.77
Sat Flow, veh/h	1781	1648	4815	514	1781	3647
Grp Volume(v), veh/h	167	16	705	366	118	841
Grp Sat Flow(s),veh/h/ln	1781	1648	1702	1757	1781	1777
Q Serve(g_s), s	8.2	0.8	7.4	7.4	1.6	6.3
Cycle Q Clear(g_c), s	8.2	0.8	7.4	7.4	1.6	6.3
Prop In Lane	1.00	1.00		0.29	1.00	
Lane Grp Cap(c), veh/h	207	192	2335	1205	473	2745
V/C Ratio(X)	0.81	0.08	0.30	0.30	0.25	0.31
Avail Cap(c_a), veh/h	416	385	2335	1205	615	2745
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.79	0.79	1.00	1.00
Uniform Delay (d), s/veh	38.8	35.5	5.6	5.6	3.6	3.1
Incr Delay (d2), s/veh	7.2	0.2	0.3	0.5	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.3	2.2	2.4	0.4	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	46.0	35.7	5.9	6.1	3.7	3.3
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	183		1071			959
Approach Delay, s/veh	45.1		5.9			3.4
Approach LOS	D		A			A

Timer - Assigned Phs	2	4	7	8
Phs Duration (G+Y+Rc), s	15.5	74.5	7.8	66.7
Change Period (Y+Rc), s	5.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	21.0	59.0	11.0	44.0
Max Q Clear Time (g_c+I1), s	10.2	8.3	3.6	9.4
Green Ext Time (p_c), s	0.4	10.4	0.0	5.2

Intersection Summary	
HCM 6th Ctrl Delay	8.1
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	61	204	35	67	21	125	903	31	11	839	112
Future Volume (veh/h)	106	61	204	35	67	21	125	903	31	11	839	112
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1945	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	112	64	153	37	71	6	132	951	30	12	883	103
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	213	113	201	422	523	455	336	1841	58	340	1674	195
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.52	0.52	0.52	0.52	0.52	0.52
Sat Flow, veh/h	423	404	719	1156	1870	1625	570	3512	111	573	3193	373
Grp Volume(v), veh/h	329	0	0	37	71	6	132	481	500	12	491	495
Grp Sat Flow(s),veh/h/ln	1546	0	0	1156	1870	1625	570	1777	1846	573	1777	1789
Q Serve(g_s), s	7.3	0.0	0.0	0.0	1.4	0.1	10.1	9.0	9.0	0.7	9.3	9.3
Cycle Q Clear(g_c), s	9.8	0.0	0.0	1.5	1.4	0.1	19.4	9.0	9.0	9.7	9.3	9.3
Prop In Lane	0.34		0.47	1.00		1.00	1.00		0.06	1.00		0.21
Lane Grp Cap(c), veh/h	527	0	0	422	523	455	336	931	968	340	931	938
V/C Ratio(X)	0.62	0.00	0.00	0.09	0.14	0.01	0.39	0.52	0.52	0.04	0.53	0.53
Avail Cap(c_a), veh/h	904	0	0	711	990	861	395	1115	1159	399	1115	1123
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.6	0.0	0.0	13.8	13.7	13.3	14.4	7.9	7.9	11.1	8.0	8.0
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.1	0.1	0.0	0.7	0.4	0.4	0.0	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	0.3	0.6	0.0	1.1	2.5	2.6	0.1	2.6	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	0.0	0.0	13.9	13.9	13.3	15.1	8.4	8.3	11.1	8.4	8.4
LnGrp LOS	B	A	A	B	B	B	B	A	A	B	A	A
Approach Vol, veh/h		329			114			1113			998	
Approach Delay, s/veh		17.9			13.8			9.2			8.5	
Approach LOS		B			B			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	19.3	31.7	19.3	31.7
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	27.0	32.0	27.0	32.0
Max Q Clear Time (g_c+I1), s	3.5	11.7	11.8	21.4
Green Ext Time (p_c), s	0.5	6.5	1.8	5.3

Intersection Summary		
HCM 6th Ctrl Delay	10.2	
HCM 6th LOS	B	

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	86	40	1052	1002	17
Future Vol, veh/h	6	86	40	1052	1002	17
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	91	42	1107	1055	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1705	540	1076	0	-	0
Stage 1	1067	-	-	-	-	-
Stage 2	638	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	82	486	644	-	-	-
Stage 1	292	-	-	-	-	-
Stage 2	488	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	76	485	642	-	-	-
Mov Cap-2 Maneuver	76	-	-	-	-	-
Stage 1	272	-	-	-	-	-
Stage 2	487	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.7	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	642	-	359	-	-
HCM Lane V/C Ratio	0.066	-	0.27	-	-
HCM Control Delay (s)	11	-	18.7	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.1	-	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	102	60	1016	55	44	1030
Future Volume (veh/h)	102	60	1016	55	44	1030
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.99		0.99	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	107	35	1069	54	46	1084
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	152	50	2035	103	403	2102
Arrive On Green	0.12	0.12	0.59	0.59	0.59	0.59
Sat Flow, veh/h	1292	423	3534	174	501	3647
Grp Volume(v), veh/h	143	0	552	571	46	1084
Grp Sat Flow(s),veh/h/ln	1726	0	1777	1838	501	1777
Q Serve(g_s), s	2.9	0.0	6.7	6.7	2.2	6.5
Cycle Q Clear(g_c), s	2.9	0.0	6.7	6.7	8.8	6.5
Prop In Lane	0.75	0.24		0.09	1.00	
Lane Grp Cap(c), veh/h	204	0	1051	1087	403	2102
V/C Ratio(X)	0.70	0.00	0.53	0.53	0.11	0.52
Avail Cap(c_a), veh/h	1433	0	2434	2518	793	4868
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.3	0.0	4.4	4.4	7.0	4.3
Incr Delay (d2), s/veh	4.4	0.0	0.4	0.4	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.9	0.9	0.2	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.7	0.0	4.8	4.8	7.1	4.5
LnGrp LOS	B	A	A	A	A	A
Approach Vol, veh/h	143		1123			1130
Approach Delay, s/veh	19.7		4.8			4.6
Approach LOS	B		A			A

Timer - Assigned Phs				4		6	8
Phs Duration (G+Y+Rc), s				26.9		9.3	26.9
Change Period (Y+Rc), s				5.5		5.0	5.5
Max Green Setting (Gmax), s				49.5		30.0	49.5
Max Q Clear Time (g_c+I1), s				10.8		4.9	8.7
Green Ext Time (p_c), s				10.5		0.4	9.1

Intersection Summary	
HCM 6th Ctrl Delay	5.6
HCM 6th LOS	A

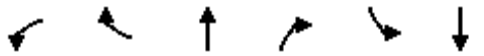
Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	918	130	255	1612	306	125	658	276	254	730	124
Future Volume (veh/h)	83	918	130	255	1612	306	125	658	276	254	730	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1945	1870	1870	1870
Adj Flow Rate, veh/h	87	966	117	268	1697	140	132	693	164	267	768	118
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	218	2092	250	302	2456	604	158	1022	466	321	898	138
Arrive On Green	0.06	0.36	0.36	0.09	0.38	0.38	0.09	0.29	0.29	0.09	0.29	0.29
Sat Flow, veh/h	3456	5857	701	3456	6434	1583	1781	3554	1621	3456	3080	473
Grp Volume(v), veh/h	87	794	289	268	1697	140	132	693	164	267	443	443
Grp Sat Flow(s),veh/h/ln	1728	1609	1732	1728	1609	1583	1781	1777	1621	1728	1777	1776
Q Serve(g_s), s	2.9	15.2	15.5	9.2	26.6	7.2	8.8	20.7	9.6	9.1	28.2	28.2
Cycle Q Clear(g_c), s	2.9	15.2	15.5	9.2	26.6	7.2	8.8	20.7	9.6	9.1	28.2	28.2
Prop In Lane	1.00		0.40	1.00		1.00	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	218	1724	619	302	2456	604	158	1022	466	321	518	518
V/C Ratio(X)	0.40	0.46	0.47	0.89	0.69	0.23	0.84	0.68	0.35	0.83	0.85	0.86
Avail Cap(c_a), veh/h	302	1724	619	302	2456	604	171	1140	520	331	570	570
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.81	0.81
Uniform Delay (d), s/veh	54.0	29.7	29.8	54.2	31.2	25.2	53.8	37.8	33.9	53.5	40.1	40.1
Incr Delay (d2), s/veh	0.4	0.9	2.5	24.7	1.6	0.9	25.3	1.9	0.8	12.5	10.3	10.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.8	6.6	4.9	10.1	2.8	5.0	9.1	3.9	4.5	13.6	13.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.5	30.6	32.3	78.9	32.8	26.1	79.1	39.7	34.7	66.0	50.4	50.4
LnGrp LOS	D	C	C	E	C	C	E	D	C	E	D	D
Approach Vol, veh/h		1170			2105			989			1153	
Approach Delay, s/veh		32.8			38.2			44.1			54.0	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	48.4	15.1	40.5	13.1	51.3	15.6	40.0
Change Period (Y+Rc), s	5.5	5.5	4.5	5.5	5.5	5.5	4.5	5.5
Max Green Setting (Gmax), s	10.5	38.5	11.5	38.5	10.5	38.5	11.5	38.5
Max Q Clear Time (g_c+I1), s	11.2	17.5	10.8	30.2	4.9	28.6	11.1	22.7
Green Ext Time (p_c), s	0.0	10.5	0.0	4.8	0.0	8.7	0.0	7.1

Intersection Summary	
HCM 6th Ctrl Delay	41.5
HCM 6th LOS	D



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	128	120	1156	171	102	779
Future Volume (veh/h)	128	120	1156	171	102	779
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1961	1885	1885	1885	1885
Adj Flow Rate, veh/h	135	11	1217	165	107	820
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	170	157	3322	450	388	2885
Arrive On Green	0.09	0.09	0.73	0.73	0.04	0.81
Sat Flow, veh/h	1795	1662	4737	619	1795	3676
Grp Volume(v), veh/h	135	11	914	468	107	820
Grp Sat Flow(s),veh/h/ln	1795	1662	1716	1755	1795	1791
Q Serve(g_s), s	7.4	0.6	9.9	9.9	1.4	5.8
Cycle Q Clear(g_c), s	7.4	0.6	9.9	9.9	1.4	5.8
Prop In Lane	1.00	1.00		0.35	1.00	
Lane Grp Cap(c), veh/h	170	157	2496	1277	388	2885
V/C Ratio(X)	0.79	0.07	0.37	0.37	0.28	0.28
Avail Cap(c_a), veh/h	377	349	2496	1277	518	2885
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.54	0.54	1.00	1.00
Uniform Delay (d), s/veh	44.3	41.3	5.1	5.1	3.4	2.5
Incr Delay (d2), s/veh	8.1	0.2	0.2	0.4	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.3	2.9	3.0	0.3	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	52.4	41.4	5.3	5.5	3.6	2.7
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	146		1382			927
Approach Delay, s/veh	51.6		5.4			2.8
Approach LOS	D		A			A

Timer - Assigned Phs	2	4	7	8
Phs Duration (G+Y+Rc), s	14.5	85.5	7.8	77.7
Change Period (Y+Rc), s	5.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	21.0	69.0	11.0	54.0
Max Q Clear Time (g_c+I1), s	9.4	7.8	3.4	11.9
Green Ext Time (p_c), s	0.3	10.2	0.0	7.6

Intersection Summary	
HCM 6th Ctrl Delay	7.1
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	110	147	31	55	30	112	1160	55	37	790	91
Future Volume (veh/h)	143	110	147	31	55	30	112	1160	55	37	790	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1961	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	151	116	120	33	58	10	118	1221	53	39	832	83
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	257	168	148	433	570	502	346	1768	77	243	1664	166
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	534	555	490	1152	1885	1658	614	3492	151	438	3286	328
Grp Volume(v), veh/h	387	0	0	33	58	10	118	626	648	39	453	462
Grp Sat Flow(s),veh/h/ln	1579	0	0	1152	1885	1658	614	1791	1853	438	1791	1823
Q Serve(g_s), s	9.9	0.0	0.0	0.0	1.2	0.2	8.2	13.9	13.9	3.9	8.8	8.8
Cycle Q Clear(g_c), s	11.8	0.0	0.0	1.4	1.2	0.2	17.0	13.9	13.9	17.8	8.8	8.8
Prop In Lane	0.39		0.31	1.00		1.00	1.00		0.08	1.00		0.18
Lane Grp Cap(c), veh/h	573	0	0	433	570	502	346	907	938	243	907	923
V/C Ratio(X)	0.67	0.00	0.00	0.08	0.10	0.02	0.34	0.69	0.69	0.16	0.50	0.50
Avail Cap(c_a), veh/h	904	0	0	679	972	855	410	1095	1132	289	1095	1114
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	0.0	13.2	13.1	12.8	14.2	9.8	9.8	16.6	8.5	8.5
Incr Delay (d2), s/veh	1.4	0.0	0.0	0.1	0.1	0.0	0.6	1.4	1.4	0.3	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.0	0.0	0.3	0.5	0.1	1.0	4.3	4.4	0.4	2.6	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.1	0.0	0.0	13.3	13.2	12.8	14.7	11.2	11.2	16.9	9.0	9.0
LnGrp LOS	B	A	A	B	B	B	B	B	B	B	A	A
Approach Vol, veh/h		387			101			1392			954	
Approach Delay, s/veh		18.1			13.2			11.5			9.3	
Approach LOS		B			B			B			A	

Timer - Assigned Phs	2		4		6		8	
Phs Duration (G+Y+Rc), s	20.8		31.5		20.8		31.5	
Change Period (Y+Rc), s	5.0		5.0		5.0		5.0	
Max Green Setting (Gmax), s	27.0		32.0		27.0		32.0	
Max Q Clear Time (g_c+I1), s	3.4		19.8		13.8		19.0	
Green Ext Time (p_c), s	0.4		4.9		2.0		7.5	

Intersection Summary		
HCM 6th Ctrl Delay		11.7
HCM 6th LOS		B

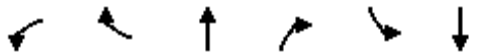
Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	31	44	1233	880	33
Future Vol, veh/h	8	31	44	1233	880	33
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	8	33	46	1298	926	35

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1688	484	964	0	-	0
Stage 1	947	-	-	-	-	-
Stage 2	741	-	-	-	-	-
Critical Hdwy	6.82	6.92	4.12	-	-	-
Critical Hdwy Stg 1	5.82	-	-	-	-	-
Critical Hdwy Stg 2	5.82	-	-	-	-	-
Follow-up Hdwy	3.51	3.31	2.21	-	-	-
Pot Cap-1 Maneuver	85	531	716	-	-	-
Stage 1	340	-	-	-	-	-
Stage 2	435	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	79	529	714	-	-	-
Mov Cap-2 Maneuver	79	-	-	-	-	-
Stage 1	317	-	-	-	-	-
Stage 2	434	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.7	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	714	-	244	-	-
HCM Lane V/C Ratio	0.065	-	0.168	-	-
HCM Control Delay (s)	10.4	-	22.7	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	71	59	1338	109	66	829
Future Volume (veh/h)	71	59	1338	109	66	829
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.99		0.99	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	75	33	1408	111	69	873
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	113	50	2200	173	312	2343
Arrive On Green	0.09	0.09	0.65	0.65	0.65	0.65
Sat Flow, veh/h	1187	522	3457	264	346	3676
Grp Volume(v), veh/h	109	0	747	772	69	873
Grp Sat Flow(s),veh/h/ln	1726	0	1791	1836	346	1791
Q Serve(g_s), s	2.6	0.0	10.4	10.5	6.2	4.7
Cycle Q Clear(g_c), s	2.6	0.0	10.4	10.5	16.7	4.7
Prop In Lane	0.69	0.30		0.14	1.00	
Lane Grp Cap(c), veh/h	164	0	1172	1201	312	2343
V/C Ratio(X)	0.66	0.00	0.64	0.64	0.22	0.37
Avail Cap(c_a), veh/h	1236	0	2117	2170	494	4235
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.3	0.0	4.3	4.3	9.3	3.3
Incr Delay (d2), s/veh	4.6	0.0	0.6	0.6	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	1.4	1.4	0.4	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.9	0.0	4.9	4.9	9.7	3.4
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	109		1519			942
Approach Delay, s/veh	22.9		4.9			3.9
Approach LOS	C		A			A

Timer - Assigned Phs		4		6	8
Phs Duration (G+Y+Rc), s		32.9		9.0	32.9
Change Period (Y+Rc), s		5.5		5.0	5.5
Max Green Setting (Gmax), s		49.5		30.0	49.5
Max Q Clear Time (g_c+I1), s		18.7		4.6	12.5
Green Ext Time (p_c), s		8.7		0.3	14.7

Intersection Summary	
HCM 6th Ctrl Delay	5.3
HCM 6th LOS	A

Notes

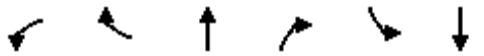
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	1524	156	164	1300	388	148	770	301	240	490	130
Future Volume (veh/h)	220	1524	156	164	1300	388	148	770	301	240	490	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1961	1885	1885	1885
Adj Flow Rate, veh/h	232	1604	150	173	1368	248	156	811	197	253	516	116
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	276	2292	214	231	2366	570	183	1051	469	305	811	181
Arrive On Green	0.08	0.38	0.38	0.07	0.36	0.36	0.10	0.29	0.29	0.09	0.28	0.28
Sat Flow, veh/h	3483	6070	567	3483	6485	1561	1795	3582	1599	3483	2906	650
Grp Volume(v), veh/h	232	1285	469	173	1368	248	156	811	197	253	317	315
Grp Sat Flow(s),veh/h/ln	1742	1621	1774	1742	1621	1561	1795	1791	1599	1742	1791	1766
Q Serve(g_s), s	7.9	26.8	26.8	5.9	20.4	14.4	10.3	24.8	11.9	8.6	18.6	18.8
Cycle Q Clear(g_c), s	7.9	26.8	26.8	5.9	20.4	14.4	10.3	24.8	11.9	8.6	18.6	18.8
Prop In Lane	1.00		0.32	1.00		1.00	1.00		1.00	1.00		0.37
Lane Grp Cap(c), veh/h	276	1837	670	231	2366	570	183	1051	469	305	499	492
V/C Ratio(X)	0.84	0.70	0.70	0.75	0.58	0.44	0.85	0.77	0.42	0.83	0.63	0.64
Avail Cap(c_a), veh/h	276	1837	670	276	2366	570	232	1149	513	305	500	493
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93
Uniform Delay (d), s/veh	54.5	31.6	31.6	55.0	30.7	28.8	53.0	38.7	34.2	53.9	37.9	38.0
Incr Delay (d2), s/veh	19.3	2.2	6.0	6.8	1.0	2.4	17.7	3.5	1.0	15.4	3.1	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	10.4	12.1	2.7	7.8	5.7	5.5	11.2	4.7	4.4	8.5	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.8	33.8	37.6	61.8	31.7	31.2	70.7	42.2	35.2	69.2	41.0	41.2
LnGrp LOS	E	C	D	E	C	C	E	D	D	E	D	D
Approach Vol, veh/h		1986			1789			1164			885	
Approach Delay, s/veh		39.4			34.5			44.9			49.1	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	50.8	16.7	39.0	15.0	49.3	15.0	40.7
Change Period (Y+Rc), s	5.5	5.5	4.5	5.5	5.5	5.5	4.5	5.5
Max Green Setting (Gmax), s	9.5	40.5	15.5	33.5	9.5	40.5	10.5	38.5
Max Q Clear Time (g_c+I1), s	7.9	28.8	12.3	20.8	9.9	22.4	10.6	26.8
Green Ext Time (p_c), s	0.0	9.8	0.1	4.7	0.0	13.3	0.0	6.7

Intersection Summary	
HCM 6th Ctrl Delay	40.5
HCM 6th LOS	D

Opening Year Plus Project Conditions



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	163	136	916	126	112	799
Future Volume (veh/h)	163	136	916	126	112	799
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1945	1870	1870	1870	1870
Adj Flow Rate, veh/h	172	17	964	117	118	841
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	213	197	3139	380	467	2735
Arrive On Green	0.12	0.12	0.68	0.68	0.04	0.77
Sat Flow, veh/h	1781	1648	4764	556	1781	3647
Grp Volume(v), veh/h	172	17	713	368	118	841
Grp Sat Flow(s),veh/h/ln	1781	1648	1702	1748	1781	1777
Q Serve(g_s), s	8.5	0.8	7.6	7.6	1.6	6.4
Cycle Q Clear(g_c), s	8.5	0.8	7.6	7.6	1.6	6.4
Prop In Lane	1.00	1.00		0.32	1.00	
Lane Grp Cap(c), veh/h	213	197	2325	1194	467	2735
V/C Ratio(X)	0.81	0.09	0.31	0.31	0.25	0.31
Avail Cap(c_a), veh/h	416	385	2325	1194	610	2735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.79	0.79	1.00	1.00
Uniform Delay (d), s/veh	38.6	35.3	5.7	5.7	3.7	3.1
Incr Delay (d2), s/veh	7.2	0.2	0.3	0.5	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.3	2.3	2.4	0.4	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	45.8	35.5	6.0	6.3	3.8	3.4
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	189		1081			959
Approach Delay, s/veh	44.9		6.1			3.5
Approach LOS	D		A			A

Timer - Assigned Phs	2	4	7	8
Phs Duration (G+Y+Rc), s	15.7	74.3	7.8	66.5
Change Period (Y+Rc), s	5.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	21.0	59.0	11.0	44.0
Max Q Clear Time (g_c+I1), s	10.5	8.4	3.6	9.6
Green Ext Time (p_c), s	0.4	10.4	0.0	5.3

Intersection Summary	
HCM 6th Ctrl Delay	8.2
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	61	204	35	67	21	125	913	31	11	843	113
Future Volume (veh/h)	107	61	204	35	67	21	125	913	31	11	843	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1945	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	113	64	154	37	71	6	132	961	30	12	887	104
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	213	112	202	420	525	456	334	1844	58	336	1675	196
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.52	0.52	0.52	0.52	0.52	0.52
Sat Flow, veh/h	426	401	719	1155	1870	1626	567	3514	110	567	3191	374
Grp Volume(v), veh/h	331	0	0	37	71	6	132	486	505	12	494	497
Grp Sat Flow(s),veh/h/ln	1545	0	0	1155	1870	1626	567	1777	1847	567	1777	1789
Q Serve(g_s), s	7.4	0.0	0.0	0.0	1.5	0.1	10.3	9.2	9.2	0.7	9.4	9.4
Cycle Q Clear(g_c), s	9.9	0.0	0.0	1.5	1.5	0.1	19.7	9.2	9.2	9.9	9.4	9.4
Prop In Lane	0.34		0.47	1.00		1.00	1.00		0.06	1.00		0.21
Lane Grp Cap(c), veh/h	528	0	0	420	525	456	334	932	969	336	932	939
V/C Ratio(X)	0.63	0.00	0.00	0.09	0.14	0.01	0.40	0.52	0.52	0.04	0.53	0.53
Avail Cap(c_a), veh/h	898	0	0	703	983	854	390	1107	1150	392	1107	1114
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.8	0.0	0.0	13.8	13.8	13.3	14.5	8.0	8.0	11.2	8.0	8.0
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.1	0.1	0.0	0.8	0.5	0.4	0.0	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.0	0.0	0.3	0.6	0.0	1.2	2.6	2.7	0.1	2.6	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.0	0.0	0.0	13.9	13.9	13.4	15.3	8.4	8.4	11.3	8.5	8.5
LnGrp LOS	B	A	A	B	B	B	B	A	A	B	A	A
Approach Vol, veh/h		331			114			1123			1003	
Approach Delay, s/veh		18.0			13.9			9.2			8.5	
Approach LOS		B			B			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	19.4	32.0	19.4	32.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	27.0	32.0	27.0	32.0
Max Q Clear Time (g_c+I1), s	3.5	11.9	11.9	21.7
Green Ext Time (p_c), s	0.5	6.5	1.8	5.3

Intersection Summary	
HCM 6th Ctrl Delay	10.3
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	100	58	1052	1004	20
Future Vol, veh/h	21	100	58	1052	1004	20
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	105	61	1107	1057	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1747	542	1081	0	-	0
Stage 1	1071	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	77	485	641	-	-	-
Stage 1	290	-	-	-	-	-
Stage 2	467	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	69	484	639	-	-	-
Mov Cap-2 Maneuver	69	-	-	-	-	-
Stage 1	262	-	-	-	-	-
Stage 2	466	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	36.6	0.6	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	639	-	237	-	-
HCM Lane V/C Ratio	0.096	-	0.537	-	-
HCM Control Delay (s)	11.2	-	36.6	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.3	-	2.9	-	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	102	60	1034	55	44	1090
Future Volume (veh/h)	102	60	1034	55	44	1090
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.99		0.99	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	107	34	1088	54	46	1147
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	152	48	2074	103	398	2140
Arrive On Green	0.12	0.12	0.60	0.60	0.60	0.60
Sat Flow, veh/h	1302	414	3538	171	492	3647
Grp Volume(v), veh/h	142	0	561	581	46	1147
Grp Sat Flow(s),veh/h/ln	1728	0	1777	1838	492	1777
Q Serve(g_s), s	3.0	0.0	6.9	6.9	2.2	7.1
Cycle Q Clear(g_c), s	3.0	0.0	6.9	6.9	9.1	7.1
Prop In Lane	0.75	0.24		0.09	1.00	
Lane Grp Cap(c), veh/h	202	0	1070	1107	398	2140
V/C Ratio(X)	0.70	0.00	0.52	0.52	0.12	0.54
Avail Cap(c_a), veh/h	1386	0	2353	2434	754	4705
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.9	0.0	4.3	4.3	7.0	4.4
Incr Delay (d2), s/veh	4.4	0.0	0.4	0.4	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	1.0	1.0	0.2	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.3	0.0	4.7	4.7	7.1	4.6
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	142		1142			1193
Approach Delay, s/veh	20.3		4.7			4.7
Approach LOS	C		A			A

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	28.0	9.4	28.0
Change Period (Y+Rc), s	5.5	5.0	5.5
Max Green Setting (Gmax), s	49.5	30.0	49.5
Max Q Clear Time (g_c+I1), s	11.1	5.0	8.9
Green Ext Time (p_c), s	11.4	0.4	9.4

Intersection Summary	
HCM 6th Ctrl Delay	5.6
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	919	130	255	1612	315	125	662	276	281	741	146
Future Volume (veh/h)	88	919	130	255	1612	315	125	662	276	281	741	146
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1945	1870	1870	1870
Adj Flow Rate, veh/h	93	967	117	268	1697	139	132	697	165	296	780	139
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	2053	245	302	2408	592	158	1035	472	331	897	160
Arrive On Green	0.06	0.35	0.35	0.09	0.37	0.37	0.09	0.29	0.29	0.10	0.30	0.30
Sat Flow, veh/h	3456	5858	700	3456	6434	1583	1781	3554	1621	3456	3005	535
Grp Volume(v), veh/h	93	795	289	268	1697	139	132	697	165	296	461	458
Grp Sat Flow(s),veh/h/ln	1728	1609	1732	1728	1609	1583	1781	1777	1621	1728	1777	1764
Q Serve(g_s), s	3.1	15.4	15.6	9.2	26.9	7.2	8.8	20.8	9.6	10.2	29.5	29.5
Cycle Q Clear(g_c), s	3.1	15.4	15.6	9.2	26.9	7.2	8.8	20.8	9.6	10.2	29.5	29.5
Prop In Lane	1.00		0.40	1.00		1.00	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	220	1691	607	302	2408	592	158	1035	472	331	530	526
V/C Ratio(X)	0.42	0.47	0.48	0.89	0.70	0.23	0.84	0.67	0.35	0.89	0.87	0.87
Avail Cap(c_a), veh/h	302	1691	607	302	2408	592	171	1140	520	331	570	566
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.79	0.79	0.79
Uniform Delay (d), s/veh	54.1	30.3	30.4	54.2	31.9	25.8	53.8	37.5	33.6	53.6	39.9	39.9
Incr Delay (d2), s/veh	0.5	0.9	2.7	24.7	1.8	0.9	25.3	1.8	0.8	20.4	11.4	11.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	5.9	6.7	4.9	10.3	2.9	5.0	9.2	3.9	5.3	14.3	14.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.5	31.2	33.1	78.9	33.7	26.7	79.1	39.3	34.3	74.0	51.3	51.4
LnGrp LOS	D	C	C	E	C	C	E	D	C	E	D	D
Approach Vol, veh/h		1177			2104			994			1215	
Approach Delay, s/veh		33.5			39.0			43.8			56.8	
Approach LOS		C			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	47.6	15.1	41.3	13.1	50.4	16.0	40.4
Change Period (Y+Rc), s	5.5	5.5	4.5	5.5	5.5	5.5	4.5	5.5
Max Green Setting (Gmax), s	10.5	38.5	11.5	38.5	10.5	38.5	11.5	38.5
Max Q Clear Time (g_c+I1), s	11.2	17.6	10.8	31.5	5.1	28.9	12.2	22.8
Green Ext Time (p_c), s	0.0	10.5	0.0	4.3	0.1	8.4	0.0	7.1

Intersection Summary	
HCM 6th Ctrl Delay	42.6
HCM 6th LOS	D

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	137	120	1156	177	102	779
Future Volume (veh/h)	137	120	1156	177	102	779
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1961	1885	1885	1885	1885
Adj Flow Rate, veh/h	144	11	1217	170	107	820
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	180	166	3284	459	384	2865
Arrive On Green	0.10	0.10	0.72	0.72	0.04	0.80
Sat Flow, veh/h	1795	1662	4718	635	1795	3676
Grp Volume(v), veh/h	144	11	918	469	107	820
Grp Sat Flow(s),veh/h/ln	1795	1662	1716	1752	1795	1791
Q Serve(g_s), s	7.8	0.6	10.2	10.2	1.4	5.9
Cycle Q Clear(g_c), s	7.8	0.6	10.2	10.2	1.4	5.9
Prop In Lane	1.00	1.00		0.36	1.00	
Lane Grp Cap(c), veh/h	180	166	2477	1265	384	2865
V/C Ratio(X)	0.80	0.07	0.37	0.37	0.28	0.29
Avail Cap(c_a), veh/h	377	349	2477	1265	513	2865
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.53	0.53	1.00	1.00
Uniform Delay (d), s/veh	44.0	40.8	5.3	5.3	3.6	2.6
Incr Delay (d2), s/veh	8.1	0.2	0.2	0.4	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.3	3.0	3.1	0.4	1.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	52.1	40.9	5.5	5.7	3.7	2.8
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	155		1387			927
Approach Delay, s/veh	51.3		5.6			2.9
Approach LOS	D		A			A

Timer - Assigned Phs	2	4	7	8
Phs Duration (G+Y+Rc), s	15.0	85.0	7.8	77.2
Change Period (Y+Rc), s	5.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	21.0	69.0	11.0	54.0
Max Q Clear Time (g_c+I1), s	9.8	7.9	3.4	12.2
Green Ext Time (p_c), s	0.3	10.2	0.0	7.6

Intersection Summary	
HCM 6th Ctrl Delay	7.5
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	110	148	31	55	30	112	1166	55	37	798	92
Future Volume (veh/h)	144	110	148	31	55	30	112	1166	55	37	798	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1961	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	152	116	121	33	58	10	118	1227	53	39	840	84
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	257	167	149	432	572	503	342	1771	76	241	1666	167
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	536	552	491	1151	1885	1658	609	3493	151	435	3285	328
Grp Volume(v), veh/h	389	0	0	33	58	10	118	629	651	39	458	466
Grp Sat Flow(s),veh/h/ln	1578	0	0	1151	1885	1658	609	1791	1853	435	1791	1823
Q Serve(g_s), s	10.1	0.0	0.0	0.0	1.2	0.2	8.4	14.1	14.1	3.9	8.9	8.9
Cycle Q Clear(g_c), s	11.9	0.0	0.0	1.4	1.2	0.2	17.3	14.1	14.1	18.1	8.9	8.9
Prop In Lane	0.39		0.31	1.00		1.00	1.00		0.08	1.00		0.18
Lane Grp Cap(c), veh/h	574	0	0	432	572	503	342	908	939	241	908	924
V/C Ratio(X)	0.68	0.00	0.00	0.08	0.10	0.02	0.34	0.69	0.69	0.16	0.50	0.50
Avail Cap(c_a), veh/h	897	0	0	672	965	849	403	1086	1124	284	1086	1105
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.8	0.0	0.0	13.3	13.2	12.9	14.4	9.9	9.9	16.8	8.6	8.6
Incr Delay (d2), s/veh	1.4	0.0	0.0	0.1	0.1	0.0	0.6	1.5	1.5	0.3	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	0.0	0.3	0.5	0.1	1.0	4.4	4.5	0.4	2.7	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.3	0.0	0.0	13.4	13.3	12.9	15.0	11.4	11.4	17.1	9.0	9.0
LnGrp LOS	B	A	A	B	B	B	B	B	B	B	A	A
Approach Vol, veh/h		389			101			1398			963	
Approach Delay, s/veh		18.3			13.3			11.7			9.4	
Approach LOS		B			B			B			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	21.0	31.8	21.0	31.8
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	27.0	32.0	27.0	32.0
Max Q Clear Time (g_c+I1), s	3.4	20.1	13.9	19.3
Green Ext Time (p_c), s	0.4	4.9	2.0	7.4

Intersection Summary	
HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

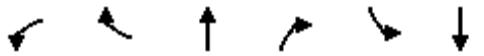
Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	39	93	1233	886	41
Future Vol, veh/h	17	39	93	1233	886	41
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	18	41	98	1298	933	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1803	491	979	0	-	0
Stage 1	958	-	-	-	-	-
Stage 2	845	-	-	-	-	-
Critical Hdwy	6.82	6.92	4.12	-	-	-
Critical Hdwy Stg 1	5.82	-	-	-	-	-
Critical Hdwy Stg 2	5.82	-	-	-	-	-
Follow-up Hdwy	3.51	3.31	2.21	-	-	-
Pot Cap-1 Maneuver	72	526	707	-	-	-
Stage 1	335	-	-	-	-	-
Stage 2	384	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	62	524	705	-	-	-
Mov Cap-2 Maneuver	62	-	-	-	-	-
Stage 1	287	-	-	-	-	-
Stage 2	383	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	39.7	0.8	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	705	-	161	-	-
HCM Lane V/C Ratio	0.139	-	0.366	-	-
HCM Control Delay (s)	10.9	-	39.7	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.5	-	1.5	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	71	59	1387	109	66	861
Future Volume (veh/h)	71	59	1387	109	66	861
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.99		0.99	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	75	36	1460	111	69	906
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	109	53	2244	170	299	2383
Arrive On Green	0.09	0.09	0.67	0.67	0.67	0.67
Sat Flow, veh/h	1152	553	3467	255	329	3676
Grp Volume(v), veh/h	112	0	772	799	69	906
Grp Sat Flow(s),veh/h/ln	1721	0	1791	1837	329	1791
Q Serve(g_s), s	2.8	0.0	11.1	11.3	6.9	5.0
Cycle Q Clear(g_c), s	2.8	0.0	11.1	11.3	18.2	5.0
Prop In Lane	0.67	0.32		0.14	1.00	
Lane Grp Cap(c), veh/h	163	0	1192	1223	299	2383
V/C Ratio(X)	0.69	0.00	0.65	0.65	0.23	0.38
Avail Cap(c_a), veh/h	1178	0	2023	2076	451	4046
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	0.0	4.3	4.3	9.7	3.3
Incr Delay (d2), s/veh	5.0	0.0	0.6	0.6	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	1.5	1.6	0.4	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.2	0.0	4.9	4.9	10.1	3.4
LnGrp LOS	C	A	A	A	B	A
Approach Vol, veh/h	112		1571			975
Approach Delay, s/veh	24.2		4.9			3.9
Approach LOS	C		A			A

Timer - Assigned Phs		4		6	8
Phs Duration (G+Y+Rc), s		34.7		9.2	34.7
Change Period (Y+Rc), s		5.5		5.0	5.5
Max Green Setting (Gmax), s		49.5		30.0	49.5
Max Q Clear Time (g_c+I1), s		20.2		4.8	13.3
Green Ext Time (p_c), s		9.0		0.3	15.4

Intersection Summary	
HCM 6th Ctrl Delay	5.3
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	1524	156	164	1300	413	148	779	301	255	496	142
Future Volume (veh/h)	235	1524	156	164	1300	413	148	779	301	255	496	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1961	1885	1885	1885
Adj Flow Rate, veh/h	247	1604	150	173	1368	277	156	820	199	268	522	126
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	276	2284	214	231	2358	568	183	1056	471	305	802	193
Arrive On Green	0.08	0.38	0.38	0.07	0.36	0.36	0.10	0.29	0.29	0.09	0.28	0.28
Sat Flow, veh/h	3483	6070	567	3483	6485	1561	1795	3582	1599	3483	2862	688
Grp Volume(v), veh/h	247	1285	469	173	1368	277	156	820	199	268	326	322
Grp Sat Flow(s),veh/h/ln	1742	1621	1774	1742	1621	1561	1795	1791	1599	1742	1791	1759
Q Serve(g_s), s	8.4	26.9	26.9	5.9	20.4	16.5	10.3	25.1	12.0	9.1	19.2	19.4
Cycle Q Clear(g_c), s	8.4	26.9	26.9	5.9	20.4	16.5	10.3	25.1	12.0	9.1	19.2	19.4
Prop In Lane	1.00		0.32	1.00		1.00	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	276	1830	667	231	2358	568	183	1056	471	305	502	493
V/C Ratio(X)	0.90	0.70	0.70	0.75	0.58	0.49	0.85	0.78	0.42	0.88	0.65	0.65
Avail Cap(c_a), veh/h	276	1830	667	276	2358	568	232	1149	513	305	502	493
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	54.8	31.7	31.7	55.0	30.8	29.5	53.0	38.7	34.1	54.1	38.0	38.1
Incr Delay (d2), s/veh	28.3	2.3	6.1	6.8	1.0	3.0	17.7	3.7	1.0	21.9	3.3	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	10.4	12.1	2.7	7.8	6.6	5.5	11.4	4.8	4.9	8.8	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.0	34.0	37.8	61.8	31.8	32.5	70.7	42.4	35.1	76.1	41.3	41.6
LnGrp LOS	F	C	D	E	C	C	E	D	D	E	D	D
Approach Vol, veh/h		2001			1818			1175			916	
Approach Delay, s/veh		41.0			34.8			44.9			51.6	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	50.7	16.7	39.1	15.0	49.1	15.0	40.9
Change Period (Y+Rc), s	5.5	5.5	4.5	5.5	5.5	5.5	4.5	5.5
Max Green Setting (Gmax), s	9.5	40.5	15.5	33.5	9.5	40.5	10.5	38.5
Max Q Clear Time (g_c+I1), s	7.9	28.9	12.3	21.4	10.4	22.4	11.1	27.1
Green Ext Time (p_c), s	0.0	9.7	0.1	4.7	0.0	13.4	0.0	6.7

Intersection Summary	
HCM 6th Ctrl Delay	41.5
HCM 6th LOS	D

Appendix E: Traffic Signal Warrant Analysis Worksheets

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE 10 May 2022

DIST ____ CO ____ RTE ____ PM ____

CALC ____ DATE ____

CHK ____ DATE ____

Major St: Normandie Av — Critical Approach Speed 35 mph

Minor St: 169th St — Critical Approach Speed 25 mph

Speed limit or critical speed on major street traffic > 40 mph..... ☐
or
In built up area of isolated community of < 10,000 population..... ☐ } RURAL (R)

☒ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☒
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				7 AM	8 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM
	U	R	U	R	Hour							
APPROACH LANES	1		2 or More									
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	1,513	1,881	1,522	1,586	1,571	1,952	2,078	2,078
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	62	75	43	42	48	44	50	44

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				7 AM	8 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM
	U	R	U	R	Hour							
APPROACH LANES	1		2 or More									
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1,513	1,881	1,522	1,586	1,571	1,952	2,078	2,078
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	62	75	43	42	48	44	50	44

Combination of Conditions A & B SATISFIED YES ☐ NO ☒

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☒
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7 AM	8 AM	2 PM	4 PM
			Hour			
Both Approaches - Major Street		X	1,513	1,881	1,571	2,078
Higher Approach - Minor Street	X		62	75	48	50

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☒
~~OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)~~	Yes ☐	No ☐

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☒**
(Part A or Part B must be satisfied)

Not met in Existing

PART A **SATISFIED YES ☐ NO ☒**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐	No ☐
2. The volume on the same minor [illegible]ly) equals or exceeds 100 vph for one moving lane of t[illegible]anes; AND	Yes ☐	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐	No ☐

See Attachment A

PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street			
Higher Approach - Minor Street			

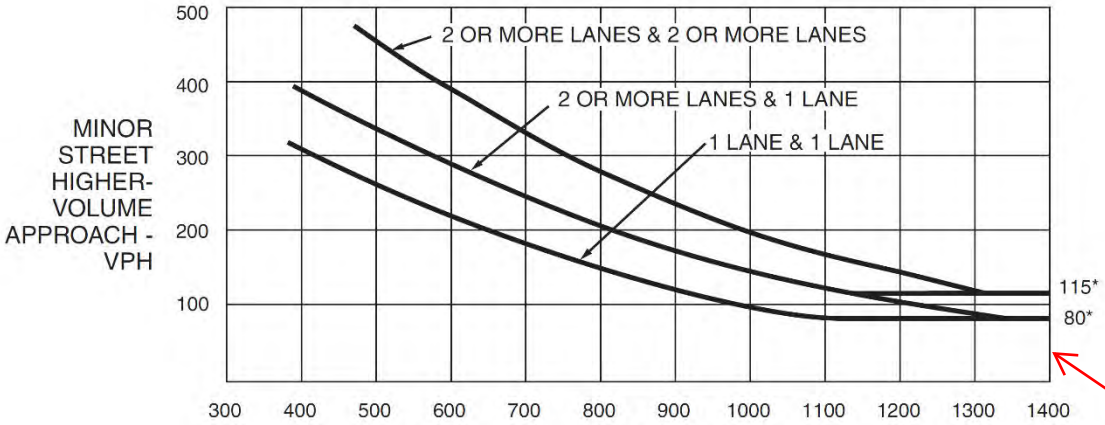
See Attachment A

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐	No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Warrant 3 is projected to be met in the Opening Year Plus Project AM scenario

Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume

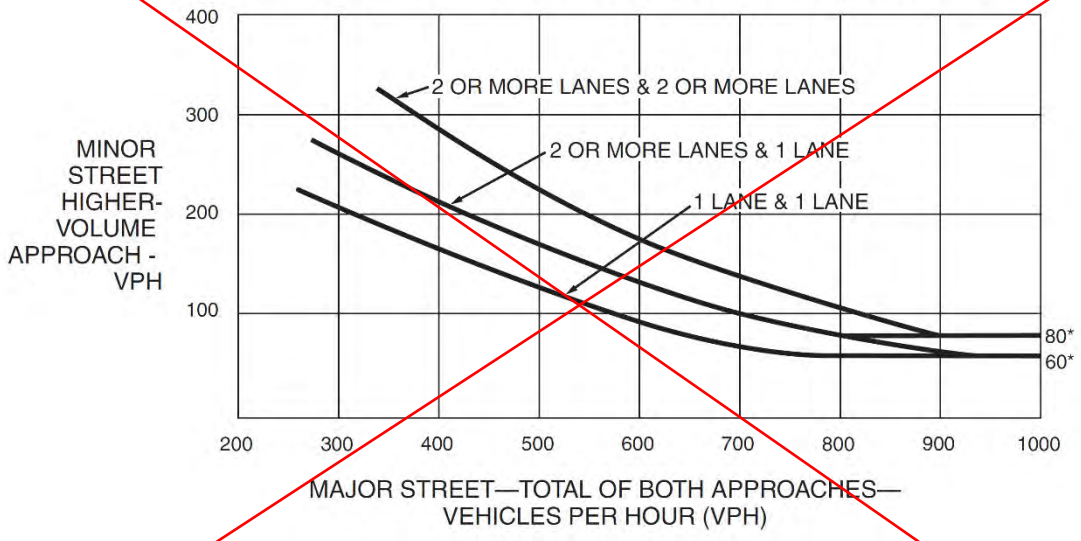


*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Minor street highest approach volume does not exceed 80 vph during any hour.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 3 of 5)

WARRANT 4 - Pedestrian Volume
(Parts 1 and 2 Must Be Satisfied)

SATISFIED YES ☐ NO ☐

Part 1 (Parts A or B must be satisfied)

	Hours - - ->				
A.	Vehicles per hour for any 4 hours				
	Pedestrians per hour for any 4 hours				

Figure 4C-5 or Figure 4C-6
SATISFIED YES ☐ NO ☐

Warrant was not performed due to low pedestrian crossing volumes per intersection turning movement counts.

	Hours - - ->				
B.	Vehicles per hour for any 1 hour				
	Pedestrians per hour for any 1 hour				

C-7 or Figure 4C-8
ED YES ☐ NO ☐

Part 2 **SATISFIED YES ☐ NO ☐**

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☐ No ☐
OR, The proposed traffic signal will not restrict progressive traffic flow along the major street.	Yes ☐ No ☐

WARRANT 5 - School Crossing
(Parts A and B Must Be Satisfied)

SATISFIED YES ☐ NO ☐

Part A **SATISFIED YES ☐ NO ☐**
Gap/Minutes and # of Children

		Hour
Gaps vs Minutes	Minutes Children Using Crossing	
	Number of Adequate Gaps	
School Age Pedestrians		

Gaps < Minutes YES ☐ NO ☐

0/hr YES ☐ NO ☐

Warrant was not performed due to no school in close proximity to Project site and Normandie/169th intersection.

AND, Consideration has	Yes ☐ No ☐

Part B **SATISFIED YES ☐ NO ☐**

The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☐ No ☐
OR, The proposed signal will not restrict the progressive movement of traffic.	Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 4 of 5)

WARRANT 6 - Coordinated Signal System **SATISFIED YES ☐ NO ☐**
(All Parts Must Be Satisfied)

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	
≥ 1000 ft	___ ft	Yes ☐ No ☐
On a one-way street or a traffic control signals are vehicular platooning.	adjacent ee of	Yes ☐ No ☐
OR, On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.		

Warrant was not performed due to acceptable operating conditions along Normandie Avenue per LOS analysis.

WARRANT 7 - Crash Experience Warrant **SATISFIED YES ☐ NO ☒**
(All Parts Must Be Satisfied)

Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency.			Yes ☐ No ☐ N/A
REQUIREMENTS	Number of crashes reported within a 12 month period susceptible to correction by a traffic signal, and involving injury or damage exceeding the requirements for a reportable crash.		Yes ☐ No ☒
5 OR MORE			
REQUIREMENTS	CONDITIONS	✓	Yes ☐ No ☒
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic		
	OR, Warrant 4, Pedestrian Volume Condition Ped Vol ≥ 80% of Figure 4C-5 through Figure 4C-8		

WARRANT 8 - Roadway Network **SATISFIED YES ☐ NO ☒**
(All Parts Must Be Satisfied)

MINIMUM VOLUME REQUIREMENTS	7:45 AM ENTERING VOLUMES - ALL APPROACHES	✓	FULFILLED
1000 Veh/Hr Yes	During Typical Weekday Peak Hour See Att. B Veh/Hr and has 5-year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday.	x	Yes ☒ No ☐
	OR During Each of Any 5 Hrs. of a Sat. or Sun _____ Veh/Hr	N/A	

CHARACTERISTICS OF MAJOR ROUTES	MAJOR ROUTE A	MAJOR ROUTE B	
Hwy. System Serving as Principal Network for Through Traffic			169th Street not a major route
Rural or Suburban Highway Outside Of, Entering, or Traversing a City			
Appears as Major Route on an Official Plan			
Any Major Route Characteristics Met, Both Streets			Yes ☐ No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 5 of 5)

WARRANT 9 - Intersection Near a Grade Crossing **SATISFIED YES ☐ NO ☐**
(Both Parts A and B Must Be Satisfied)

PART A A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach. Track Center Line to Limit Line _____ ft	Yes ☐ No ☐
PART B **There is one minor street approach lane at the track crossing -** During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-9. Major Street - Total of both approaches: _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calculate AF) = _____ VPH	Yes ☐ No ☐
OR, There are two or more minor street approach lanes at the track crossing - During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-10. Major Street - Total of both approaches : _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calcualte AF) = _____ VPH	

The minor street approach[illegible] ent factors (AF)
as described in Section 4[illegible]

Warrant not performed. Warrant 9 pertains to grade crossings on minor streets. Railroad crosses the major street near Normandie/169th.

1- Number of Rail Traffic p[illegible] t factor from table 4C-2____

2- Percentage of High-Oc[illegible] t factor from table 4C-3____

3- Percentage of Tractor-Trailer Trucks on Minor Street Approach_____ Adjustment factor from table 4C-4____

NOTE: If no data is availale or known, then use AF = 1 (no adjustment)

Attachment A

FEHR PEERS

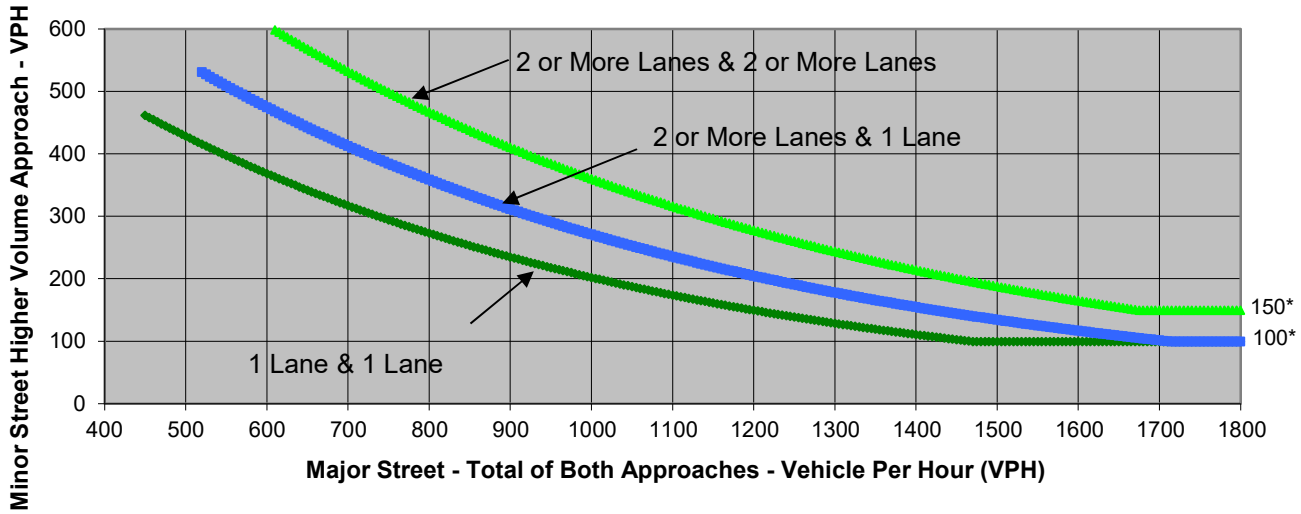
Major Street	Normandie Avenue	Project	16911 Normandie Avenue Project
Minor Street	169th Street	Scenario	Existing Conditions
		Peak Hour	AM (7:45 AM)

Turn Movement Volumes

	NB	SB	EB	WB
Approach Volume	979	1,018	84	
Total	979	1,018	84	0

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Normandie Avenue	169th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,997**	**84**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Normandie Avenue
Minor Street	169th Street

Project	16911 Normandie Avenue Project
Scenario	Existing Conditions
Peak Hour	AM (7:45 AM)

Turn Movement Volumes

	NB	SB	EB	WB
Approach Volume	979	1,018	84	
Total	979	1,018	84	0

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	20.3
Approach with Worst Case Delay	EB
Total Vehicles on Approach	84

See Appendix D

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing Conditions	**0.5**	**84**	**2,081**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

Major Street	Normandie Avenue
Minor Street	169th Street

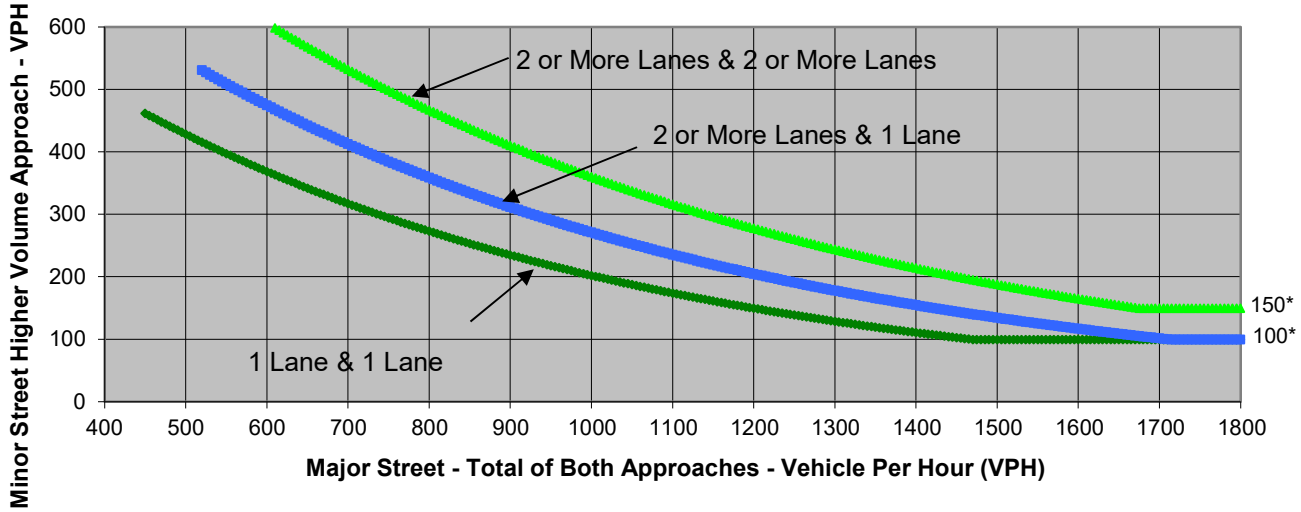
Project	16911 Normandie Avenue Project
Scenario	Existing Conditions
Peak Hour	PM (4 PM)

Turn Movement Volumes

	NB	SB	EB	WB
Approach Volume	1,206	872	50	
Total	1,206	872	50	0

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Normandie Avenue	169th Street	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**2,078**	**50**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Normandie Avenue
Minor Street	169th Street

Project	16911 Normandie Avenue Project
Scenario	Existing Conditions
Peak Hour	PM (4 PM)

Turn Movement Volumes

	NB	SB	EB	WB
Approach Volume	1,206	872	50	
Total	1,206	872	50	0

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	21.5
Approach with Worst Case Delay	EB
Total Vehicles on Approach	50

See Appendix D

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing Conditions	**0.3**	**50**	**2,128**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

Attachment B

FEHR & PEERS

Major Street	Normandie Avenue
Minor Street	169th Street

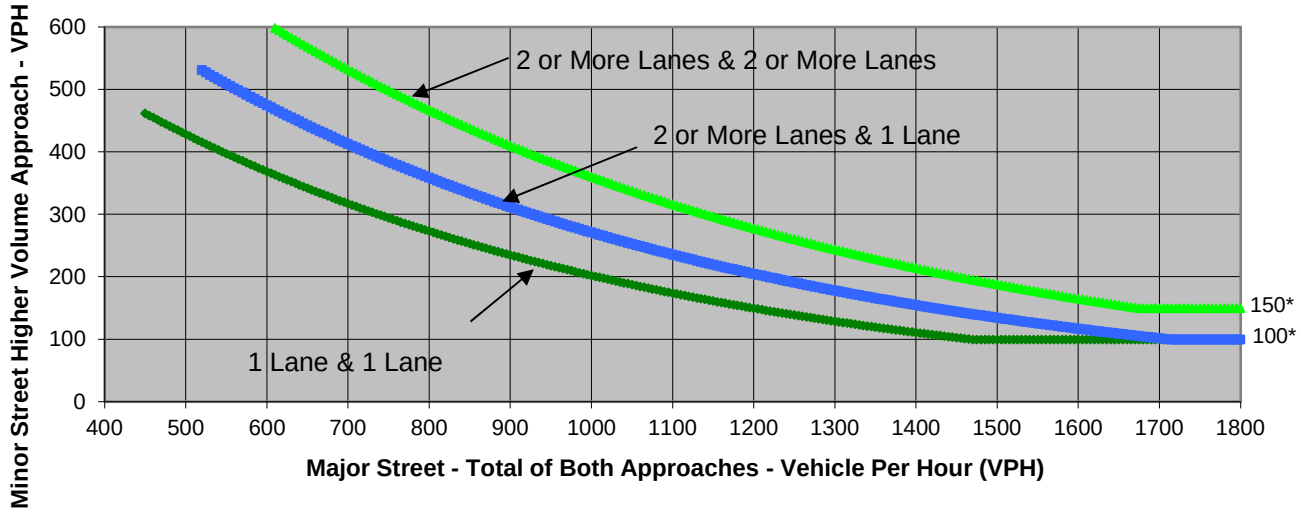
Project	16911 Normandie Avenue Project
Scenario	Opening Year Plus Project
Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Approach Volume	1,110	1,023	121	
Total	1,110	1,023	121	0

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	Normandie Avenue	169th Street	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**2,133**	**121**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.