**Tuesday, October 28, 2025**
701 East Carson Street, Carson, CA 90745
Helen Kawagoe Council Chambers, 2nd Floor
6:30 p.m.

# AGENDA
# REGULAR MEETING OF THE
# PLANNING COMMISSION

| | | | |
|---|---|---|---|
| Members: | Dianne Thomas<br>Chair | Louie Diaz<br>Vice Chair | Frederick Docdocil |
| | Carlos Guerra | Del Huff | DeQuita Mfume |
| | Clarence Johnson | Leticia Wilson | |
| Alternates: | Jaime Monteclaro | | |
| Staff: | Nathan Freeman<br>Community and Economic Development Director | McKina Alexander<br>Planning Manager | Chris Palmer, AICP<br>Economic Dev. Manager |
| | Benjamin Jones<br>Asst. City Attorney | Laura Gonzalez<br>Planning Secretary | |

This Agenda and corresponding staff reports can be found on the City of Carson website at www.carsonca.gov

*"In accordance with the Americans with Disabilities Act of 1990, if you require a disability related modification or accommodation to attend or participate in this meeting, including auxiliary aids or services, please call the City Clerk's office at 310-952-1720 at least 48 hours prior to the meeting." (Government Code Section 54954.2)*

**PUBLIC INFORMATION**

The public may address the members of the Planning Commission on matters within the jurisdiction of the Planning Commission or on any items on the agenda of the Planning Commission during the designated public comment periods. There will be two oral communication sessions: one for Agendized Items (comment about items ON the agenda) and the other non-Agendized items (comment about items NOT on the agenda). The Oral Communications portion of the agenda is limited to a duration of one hour unless otherwise approved by the Planning Commission. Comment time is normally 3 minutes depending on the number of speakers.

**IF YOU ARE NOT ABLE TO ATTEND THE MEETING IN-PERSON, PUBLIC COMMENTS CAN BE SUBMITTED BEFORE THE MEETING VIA:**

- **Email: planning@carsonca.gov** (up to 3 hours prior to the start of the meeting).
- **Written:** Delivered to the Planning Division at City Hall (up to 3 hours prior to the start of the meeting).

Emailed and written comments received by the Planning Division may not be read aloud during the meeting but will be provided to the Board and incorporated into the record.

**PUBLIC VIEWING OF THIS MEETING WILL BE AVAILABLE BY:**

- **Livestream: www.carsonca.gov**
- **YouTube: www.youtube.com/@CityofCarsonCalifornia**

- **Cable TV: Spectrum (Channel 35) and ATT (Channel 99)**

**RULES OF DECORUM:**

1. *No person attending a Public Meeting shall engage in disorderly or boisterous conduct, including but not limited to applause, whistling, stamping of feet, booing, or making any loud, threatening, profane, abusive, personal, impertinent, or slanderous utterance-that disturbs, disrupts, or otherwise impedes the orderly conduct of the meeting.*
2. *All remarks by members of the public shall be addressed to the Mayor or the Chair and not to any other member of the public or to any single Council, Board or Commission Member unless in response to a question from that Member.*
3. *Signs, placards, banners, or other similar items shall not be permitted in the audience during a Public Meeting if the presence of such item disturbs, disrupts or otherwise impedes the orderly conduct of the meeting.*
4. *All persons attending a Public Meeting shall remain seated in the seats provided, unless addressing the body at the podium or entering or leaving the meeting.*
5. *All persons attending a Public Meeting shall obey any lawful order of the Presiding Officer to enforce the Rules of Decorum.*

- *Treat everyone courteously*
- *Listen to others respectfully*
- *Exercise self-control*
- *Give open-minded consideration to all viewpoints*
- *Focus on the issues and avoid personalizing debate*
- *Embrace respectful disagreement and dissent as democratic rights that are inherent components of an inclusive public process and rolls for forging sound decisions*

## 1. CALL TO ORDER: PLANNING COMMISSION

## 2. ROLL CALL

## 3. FLAG SALUTE

## 4. ORAL COMMUNICATIONS FOR MATTERS NOT LISTED ON THE AGENDA

The public may at this time address the members of the Planning Commission on any matters within the jurisdiction of the Planning Commission. No action may be taken on non-agendized items except as authorized by law. Speakers are requested to limit their comments to no more than three minutes each, speaking once.

## 5. ORAL COMMUNICATIONS FOR NON-PUBLIC HEARING ITEMS LISTED ON THE AGENDA (MEMBERS OF THE PUBLIC)

The public may at this time address the members of the Planning Commission on any matters within the jurisdiction of the Planning Commission. No action may be taken on non-agendized items except as authorized by law. Speakers are requested to limit their comments to no more than three minutes each, speaking once.

## 6. APPROVAL OF MINUTES

6.A. APPROVAL OF MINUTES - OCTOBER 14, 2025

RECOMMENDED ACTION

— APPROVE the minutes as listed.

## 7. NEW PUBLIC HEARING

7.A. CONSIDER ADOPTING A RESOLUTION FINDING A CEQA EXEMPTION AND CONDITIONALLY APPROVING SITE PLAN AND DESIGN OVERLAY REVIEW NO. 00018-25 FOR A 51-UNIT CONDOMINIUM DEVELOPMENT AT 438 W. CARSON STREET (APN 7343019092)

RECOMENDED ACTION

— 1. CONDUCT a Public Hearing; and

— 2. WAIVE further reading and ADOPT Resolution No. 25- _, entitled “A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF CARSON FINDING A CEQA EXEMPTION AND CONDITIONALLY APPROVING SITE PLAN AND DESIGN OVERLAY REVIEW NO. 00018-25 FOR A 51-UNIT CONDOMINIUM DEVELOPMENT AT 438 W. CARSON STREET (APN 7343019092)”

## 8. MANAGER'S REPORT

## 9. ORAL COMMUNICATIONS (COMMISSIONERS)

## 10. ADJOURNMENT

*Date Posted: October 23, 2025*

# Report to Planning Commission

Tuesday, October 28, 2025, 6:30 PM

APPROVAL OF MINUTES 6A.

| | |
|---|---|
| TO: | Planning Commission |
| FROM: | McKina Alexander, Planning Manager |
| PREPARED BY: | Laura Gonzalez, Planning Secretary |
| SUBJECT: | APPROVAL OF MINUTES - OCTOBER 14, 2025 |

## I. SUMMARY

The Planning Division is seeking approval of the following minutes.

- Tuesday, October 14, 2025

## II. RECOMMENDATION

APPROVE the minutes as listed.

## III. ATTACHMENTS

1. Minutes for October 14, 2025

**Attachments**

Minutes - October 14, 2025

**CITY OF CARSON**
**MINUTES**
**PLANNING COMMISSION**
**REGULAR MEETING**
**OCTOBER 14, 2025**

## 1. CALL TO ORDER: PLANNING COMMISSION

The meeting was called to order at 6:30 P.M. by Chair Dianne Thomas in the Helen Kawagoe Council Chambers, Carson City Hall, 701 E. Carson Street, Carson, California 90745.

## 2. ROLL CALL

Planning Secretary Laura Gonzalez noted the roll:

Planning Commissioners Present: Chair Dianne Thomas, Vice Chair Louie Diaz, Commissioner Del Huff, Commissioner DeQuita Mfume, Commissioner Carlos Guerra, Commissioner Frederick Docdocil, Commissioner Leticia Wilson, Commissioner Clarence Johnson

Planning Commissioners Absent: Commissioner Jaime Monteclaro

Also Present: Dr. Robert Lennox, Assistant City Manager; McKina Alexander, Planning Manager; Christopher Palmer, Economic Development Manager; Jarrod Coleman, Senior Planner; Benjamin Jones, Assistant City Attorney

## 3. FLAG SALUTE

Vice Chair Diaz led the Pledge of Allegiance.

## 4. ORAL COMMUNICATIONS FOR MATTERS NOT LISTED ON THE AGENDA

None.

## 5. ORAL COMMUNICATIONS FOR NON-PUBLIC HEARING ITEMS LISTED ON THE AGENDA (MEMBERS OF THE PUBLIC)

None.

## 6. APPROVAL OF MINUTES

6.A. APPROVAL OF MINUTES - August 26, 2025
RECOMMENDED ACTION
— APPROVE the minutes as listed.

**Motion To Approve submitted by Louie Diaz seconded by Frederick Docdocil resulting in 8-0-0- 0-1, Jaime Monteclaro is absent.**

## 7. PRESENTATIONS

### 7.A. YEAR-END REVIEW PRESENTATION

Senior Planner Jarrod Coleman shared a video of the Planning Commission year-end review and status update.

## 8. MANAGER'S REPORT

Dr. Robert Lennox, Assistant City Manager - The Planning and Economic Development team have done a tremendous job this year. Thank you to the commission for your service. This year is going to be even more involved with a lot of items on the horizon. The team is going to be recognized on October 21st at the City Council meeting. The CMO finished its recruitment process for the director's position.

Planning Manager McKina Alexander - October is National Planning Month. We do this every year in celebration of all the hard work that our commission does as well as the planning professionals. It's very important that we recognize you, your hard work, your dedication, and your service to our community. They're all here with exception of Associate Planner Max Castillo and Contract Planner Kaneca Pompey. I'll start off with Associate Planner Aaron Whiting, Assistant Planner Richard Garcia, Assistant Planner Jacob Collins, and Senior Planner Jarrod Coleman. If it wasn't for our administrative staff, we would hardly get anything done. I would also like to recognize our Planning Secretary Laura Gonzalez, Maria Gonzalez who keeps our budgets and our money right, Sandy Solis who has been helping us out, and Dalia Moreno who has joined our team. I must acknowledge Christopher Palmer because he started all this. I want to make sure that Jarrod Coleman is acknowledged for all the hard work that he did as a producer, director, editing, spending many hours making sure that we had a fantastic product. I also want to thank Dr. Lennox for giving us a budget, it helped ease some of that processing that Jarrod was responsible for.

## 9. ORAL COMMUNICATIONS (COMMISSIONERS)

Assistant City Attorney Ben Jones - I would like to thank the commission for your service. The city is very fortunate to have you. Staff is fantastic and I love working with them.

Commissioner Wilson - It's amazing to be here, serve the community, and to be with amazing people that are about getting things done and moving the community forward.

Commissioner Docdocil - I echo the appreciation for everyone's work. I appreciate everybody's service.

Commissioner Huff - It's a pleasure to work with all of you. Thank you for all the work that you put into everything that you do.

Commissioner Guerra - It's been a pleasure to serve. I hope that when it all ends, we get to see everything that we've accomplished.

Commissioner Johnson - It's extremely gratifying to serve with support of staff, the community, and family.

Commissioner Mfume - It's an honor to serve on the commission. The film was wonderful.

Vice Chair Diaz - I echo the sentiments of my fellow commissioners. We couldn't have accomplished all without the entire team. It's gratifying to see behind the scenes the team that puts it together. We will continue to deliberate and agree to disagree on some of the things but at the end we all come together as a team. Unfortunately, I was away due to three deaths in the family and a couple of dear friends.

Chair Thomas - It has been an honor to serve as Chair of this commission. My fellow commissioners are hard working. I was not aware of the things that happened in our Vice Chair Diaz's family. A lot of people have lost loved ones in the past few months, and they continue to push forward, that shows the character of people. I want to acknowledge McKina Alexander who lost her mom, but she continued to do her job amid that. My condolences to the Diaz family and the Alexander family.

**10. ADJOURNMENT**

The meeting was adjourned at 7:27 P.M. by Chair Dianne Thomas.

_____

Dianne Thomas, Chairperson

Attest:

_____

Laura Gonzalez, Planning Secretary

# Report to Planning Commission

Tuesday, October 28, 2025, 6:30 PM

NEW PUBLIC HEARING 7A.

| | |
|---|---|
| TO: | Planning Commission |
| FROM: | McKina Alexander, Planning Manager |
| PREPARED BY: | Max Castillo, Associate Planner |
| SUBJECT: | CONSIDER ADOPTING A RESOLUTION FINDING A CEQA EXEMPTION AND CONDITIONALLY APPROVING SITE PLAN AND DESIGN OVERLAY REVIEW NO. 00018-25 FOR A 51-UNIT CONDOMINIUM DEVELOPMENT AT 438 W. CARSON STREET (APN 7343019092) |

PROJECT/APPLICATION INFORMATION

Project Summary: A request to consider finding a CEQA exemption and approval of Design Overlay Review (DOR) No. 18-25 for the development of a 51-unit condominium project.

Project Location: 438 West Carson Street

Assessor Parcel Number: 7343-019-092

Zoning: Downtown Mixed Use (DMX)

Project Applicant: Maupin Development, Attn: Douglas Maupin

Owner: Harbor Federal Credit Union

## I. OVERVIEW

### A. Introduction and History

The proposed Maupin Development residential condominium project site is located on a 1.23-acre site at 438 W. Carson Street situated along the south side of West Carson Street between Moneta Avenue and Figueroa Street within the western portion of the City of Carson. The project would consist of fifty-one units within a four-story condominium building containing fifteen (15) one-bedroom/one bathroom units and thirty-six (36) two-bedroom/two bathroom units, parking, landscape, and other related on-site and off-site improvements. The project site's General Plan land use designation is Downtown Mixed-Use, and the zoning is DMX, Downtown Mixed-Use. The proposed residential condominium project density is 50 dwelling units per acre. The maximum allowable density is 65 dwelling units per acre in the DMX zone.

The subject property was formerly agricultural land as early as 1928 with these subsequent former site uses: nursery, residences and commercial building. The site is currently vacant.

The application completeness determination was issued in April 2024, after the General Plan 2040 and Zoning Code Phase 1 were adopted. The General Plan land use designation of Downtown Mixed Use (DMU) and Downtown Mixed-use (DMX) zoning standards were in effect as of the date the application was deemed complete.

The applicant's requested entitlement is the following:

- Site Plan Review and Design Review (DOR) No. 00018-25, to approve the development plan for the project.

No previously approved entitlements for this project site were found.

**B. Project Description**

Site Plan and Design Review (DOR) No. 18-25

The proposed project is a 51-unit, four-story (54-foot-high) residential condominium development building, with private and common open space, off-street parking, internal roadway, infrastructure connections, and landscaping. The proposed residential unit mix consists of 36 two-bedroom units and 15 one-bedroom units with unit sizes ranging from 705 square feet to 1,060 square feet. Five of the 15 one-bedroom units will be deed-restricted as affordable low-income units. Each unit will have 60 square feet of private open space, and the project site would provide approximately 7,487 square feet of open recreation space. The project would provide common amenities such as a lounge, fitness center and a rooftop deck. A total of 10,557 square feet of open space will be provided, and 7,191 square feet of landscape area is proposed.

The maximum allowable number of units for the project site is 65, the minimum private open space per unit is 60 square feet and the maximum allowable building height is 65 feet. The proposed project complies with these zoning requirements.

Carson Street will provide pedestrian and vehicular ingress and egress for the project site. There will be pedestrian walkway access at the north, south, west and east perimeters of project site leading to each unit. Vehicular access would be provided via a two-way traffic, 28-foot-wide driveway on West Carson Street leading to internal, private streets serving access to each unit's parking spaces and the development's guest parking areas.

The proposed development will include 56 covered parking spaces and 59 open parking spaces (including one ADA van accessible space and four electric vehicle (EV) charging spaces, totaling 115 parking spaces, and nine (9) bicycle spaces. The required off-street parking is two parking spaces per residential unit and one guest parking per four units.

The building's exterior design is contemporary architecture consisting of neutral stucco cement panels, accentuated by block volumes with a mix of contrasting colors and siding.

A parking lot art wall will provide street level frontage, screening and designed to enhance street level visual aesthetic consisting of stucco, metal artwork and siding.

**C. Existing Conditions**

1. Zoning and General Plan Land Use Information

The subject property site is in the Downtown Mixed-use District (DMX) and has a General Plan land use designation of Downtown Mixed Use. The project site is surrounded by commercial and residential uses, including a mobile home park to the north, a multi-unit office building and apartment building to the east, a medical office to the west and an apartment building and single-family homes to the south. As shown on the attached Radius map (Attachment 3), the project site is located in the western portion of the city, on the south side of Carson Street between Moneta Avenue and Figueroa Street.

The following table summarizes the surrounding land uses, zoning, and general plan designations:

| | Existing Use | Zoning | General Plan |
|---|---|---|---|
| Subject Site | Vacant | DMX (Downtown Mixed-Use) | DMU (Downtown Mixed Use) |
| North of Subject Side | Mobile Home Park | DMX (Downtown Mixed-Use) | DMU (Downtown Mixed Use) |
| South of Subject Site | Apartment Building / Single-family Residential | DMX (Downtown Mixed-Use) and LDR (Low Density Residential) | DMU (Downtown Mixed-Use) and LDR (Low Density Residential) |
| East of Subject Site | Office building / Apartment building | DMX (Downtown Mixed-Use) | DMU (Downtown Mixed Use) |
| West of Subject Site | Medical office | DMX (Downtown Mixed Use) | DMU (Downtown Mixed Use) |

2. Site Conditions

The current site is primarily flat and consisting of two parcels: the Southland Credit Union banking use, surplus parking and open space and a vacant lot where the propose project will be located. The site is bounded by a block wall.

Existing Site Conditions:

South View from Carson Street

## II. ANALYSIS

A. General Plan Consistency

The General Plan 2040 sets forth goals and policies that provide guidance related to the community's vision for Carson. Goal 2 of the Housing Element is to encourage the development of a variety of housing to meet need of the broad spectrum of the community, and Policy 2-5 is to increase the number of owner-occupied units within condominiums and planned unit developments. The project furthers those goals and policies and is consistent with the applicable General Plan land use designation of Downtown Mixed Use, which allows residential development at a minimum density of 40 dwelling units per acre and with a minimum 0.2 FAR active ground floor or commercial use required, except the City may permit substitution of required minimum commercial space with other desired uses or community benefits.

The project would include 51 new residential units, including 36 two-bedroom units and 15 one-bedroom units, on a lot that is currently unoccupied. The density of the project is 41 dwelling units per acre, which meets the required minimum density.

The project does not include any active ground floor or commercial use and is therefore required to provide a desired use or community benefit to qualify for the exception from the General Plan requirement. To qualify for this exception the project has included five affordable units that will be deed-restricted for low income households.

The proposed development is compatible with the surrounding uses, which are commercial and residential, including a mobile home park to the north, a multi-unit office building to the east, a medical office to the west and an apartment building and single-family homes to the south. The development plan is consistent with the surrounding neighborhood character and would supply new housing in the City. There is no applicable specific plan for the area.

B. Zoning Ordinance Compliance

Per Section 9212.2 of the City's Updated Zoning Ordinance (Phase 1), multiple-family residential and residential condominium development is a permitted use in the DMX district subject to zoning compliance determination.

The project conforms to the development standards for non-mixed use (e.g., exclusively residential, no commercial component) multi-family residential and residential condominium projects in the DMX District. The project will include a children's playground, laundry facilities, and storage areas and comply with requirements for fencing/walls, landscaping and auto/bicycle parking. There is no applicable Specific Plan.

Those standards not met have been addressed in the table shown below:

| | **Requirement** | **Compliance** |
|---|---|---|
| **Minimum Required Active Commercial Uses on Frontages** | 40% of ground-floor street frontage shall be for commercial uses | The project includes five units that will be deed-restricted as affordable to low-income households. |
| **Build to Line** | 60% of Street frontage shall be buildings | A parking art wall will provide street level frontage and is designed to enhance street level visual aesthetic and screening consisting of stucco, metal artwork and siding. |

1. Site Plan and Design Review (DOR No. 18-25)

The proposed development plan is compatible in architecture and design with existing and anticipated development in the vicinity, including the aspects of site planning, land coverage, landscaping, appearance and scale of structures and open spaces, and other features relative to a harmonious and attractive development of the area. All applicable development standards of the City's Zoning Code are met. The building's exterior design is contemporary architecture consisting of neutral stucco cement panels, accentuated by block volumes with a mix of contrasting colors and siding.

A parking art wall will provide street level frontage and is designed to enhance street level visual aesthetic and screening consisting of stucco, metal artwork and siding.

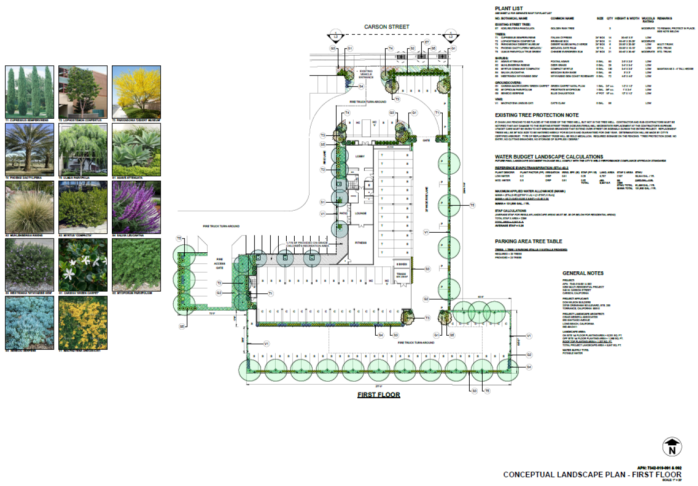
The proposed development plan provides for convenience and safety of circulation for pedestrians and vehicles. The development will have pedestrian and vehicular accessibility via one access driveway on Carson Street. Paved minimum 28-foot-wide internal roadway as private streets will provide circulation throughout the project site. The proposed project features include landscaped and lighted pedestrian walkways connecting facilities within the site, as well as connections with the adjacent public sidewalks along the project frontage. Pedestrian access is provided from Carson Street along the frontage, between portions of the buildings and along the south, east, west perimeters for convenient and safe circulation. The project driveway is planned to accommodate full access (left-turn and right- turn ingress and egress traffic movements) on West Carson Street. The City's Traffic Engineer has reviewed and approved the project traffic analysis and project plans and determined that safe and adequate access and circulation will be provided, and the proposed project will not have a significant traffic effect. The Los Angeles County Fire Department reviewed the proposed development plan and determined there will be adequate emergency access subject to the conditions of approval.

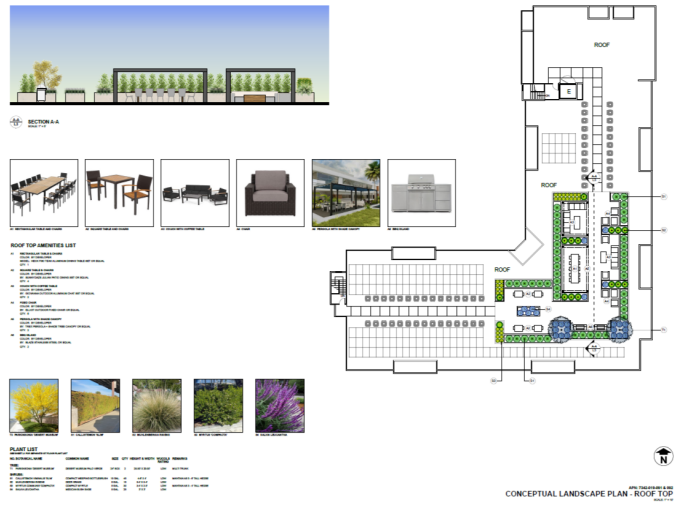
The proposed development will include 56 covered parking spaces and 59 open parking spaces (including one ADA van accessible space and four EV charging spaces), for a total of 115 parking spaces, and 9 bicycle spaces, all of which complies with the Carson Zoning Ordinance parking requirements. The project design will allow for and promote safe and convenient pedestrian and vehicle circulation.

There is no proposed signage for the project. Any signage associated with the project will be pursuant to a separate permit and shall exhibit attractiveness, effectiveness, and restraint in signing graphics and color.

Rendering: South View from Carson Street

Proposed Landscaping:




2. Subdivision: Tentative Tract Map (TTM) No. 84347

The project site contains two existing parcels. Lot 1 being developed with the proposed 51 residential condominium units and associated common areas and Lot 2 occupied by the existing bank building. Pursuant to Ordinance No. 25-2513, because the condominium project does not involve “division of land” the tentative tract map for this project is not subject to Planning Commission approval and will be approved administratively.

## III. PUBLIC HEARING NOTICE

Public Notice was given in accordance with Part 7 of the Carson Municipal Code. Notice of public hearing was posted to the project site and mailed to property owners and occupants within a 750’ radius by October 2, 2025. The agenda was posted at City Hall no less than 72 hours prior to the Planning Commission meeting.

## IV. ENVIRONMENTAL ANALYSIS

The Planning Commission further: (1) finds the project is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15332, In-Fill Development, which consists of projects characterized as in-fill development meeting the conditions described below.

(a) The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.

(b) The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.

(c) The project site has no value as habitat for endangered, rare, or threatened species.

(d) Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.

(e) The site can be adequately served by all required utilities and public services.

The project meets all the criteria for this CEQA categorical exemption. The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations. The development is within the City of Carson jurisdiction, and the project site is not larger than five acres and is substantially surrounded by urban uses. There is no natural or native vegetation on the project site; the property has no value as a habitat of endangered species. The site was previously developed and can be adequately serviced by all required utilities and public services. Approval of the project will not result in any significant effects related to traffic, noise, air quality or water quality. With respect to traffic, scoping and VMT memos have been prepared for the project and reviewed by the City's Traffic Engineer, who upon doing so determined the proposed project will not have any significant traffic effects. No exception to the categorical exemption applies under CEQA Guidelines Section 15300.2.

## III. CONCLUSION AND RECOMMENDATION

Staff recommends the Planning Commission:

- **ADOPT** Resolution No. 25-__, entitled "A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF CARSON FINDING A CEQA EXEMPTION AND CONDITIONALLY APPROVING SITE PLAN AND DESIGN OVERLAY REVIEW NO. 00018-25 FOR A 51-UNIT CONDOMINIUM DEVELOPMENT AT 438 W. CARSON STREET (APN 7343019092)"

## IV. ATTACHMENTS

1. Development Plans
2. Conceptual Landscape Plan
3. Radius Map
4. Traffic Study
5. Draft Resolution No 25 -_____.
    A. Legal Description
    B. Conditions of Approval

**Attachments**

Development Plans
Conceptual Landscape Plan
Radius Map
Traffic Study
Draft Resolution No 25 -_____.
Legal Description
Conditions of Approval

# DWB SOUTHLAND

438 W. CARSON STREET, CARSON, CA 90745

## CODE ANALYSIS:

OCCUPANCY TYPE: R-2/S-2

CONSTRUCTION TYPE:
TYPE VA (9M) (13D SPRINKLERED)

ALLOWABLE HEIGHT PER CBC: 4 STORY, 60'-0" ABOVE FINISH GRADE

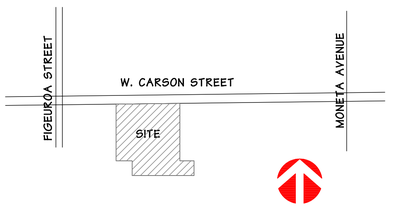
BUILDING:
BASIC ALLOWABLE AREA (ONE STORY): 36,000 SF
YARDS INCREASE FACTOR:
Per CBC Sections 506.3.2 & 506.3.3
454.17' building perimeter with +30' yard widths
Total building perimeter = 728'
454.17'/728' = 0.624
calculated width of open space = 30'
I = (0.624 - 0.25) = 0.374 x (30/30) = 0.374%
INCREASE FOR SINGLE OCCUPANCY MULTI-STORIES PER CBC 506.2.3:
36,000 SF+(12,000 SF X 0.374) X 3
TOTAL BUILDING AREA ALLOWED = 121,464 SF
TOTAL PROPOSED BUILDING AREA:
60,902 SF

NOTE:
FIRE SPRINKLER PLANS ARE TO BE PREPARED, SUBMITTED & APPROVED BY COUNTY OF LOS ANGELES FIRE PRIOR TO CERTIFICATE OF OCCUPANCY. RESIDENTIAL OR QUICK-RESPONSE HEADS SHALL BE USED IN THE DWELLING UNITS.

## DRAWING INDEX


1 TITLE
2 SITE PLAN
3 BUILDINGS $ ROOF PLANS
4 BUILDING ELEVATIONS
5 BUILDINGS ELEVATIONS
6 UNIT PLANS
7 STREET VIEW


## VICINITY MAP





RANDY MORRIS ARCHITECT
45120 VIA CARINA
INDIAN WELLS, CA 92210
T. (310) 809-6745
E-MAIL rj.morris3@verizon.net


## PROJECT INFORMATION

### SITE SUMMARY

| | |
|---|---|
| lot size | 2.09 acres gross (91,122 SF) |
| commercial area (lot A - min. 20,000 sf) | 0.86 acres (37,446 SF) |
| residential area (lot B - min. 30,000 sf) | 1.23 acres (53,576 SF) |
| current zoning: | DMX |
| land use designation: | Downtown Mixed Use |
| proposed planning approval: | Mixed Use Development |
| Minimum Residential Density @ 40 units/acre | 49.2 |
| proposed number of units | 51 |
| proposed density: | 1,050.5 sf/unit |
| unit sizes: | 705 SF - 1,060 SF |
| building coverage: | 20,091 SF (37.5% of lot area) |
| pavement: | 26,603 SF (49.7% of lot area) |
| landscaping: | 7,362 sf (13.7% of lot area) |
| building setbacks: | |
| front (10'-0" required): | 10'-0" |
| sides: (10'-0" required) | 10'-0"/41'-6" |
| rear: (20'-0" required) | 51'-0" |
| required open space (200 sf per unit): | 10,200 sf |
| open space provided: | |
| balconies (min. 60 sf): | 2,723 sf (45 balconies @ 60.5 sf) |
| lounge/fitness/lobby: | 2,987 sf |
| roof top deck: | 4,500 sf |
| total open space: | 10,210 sf |
| children playground required: | 1,300 sf |

### PLAN SUMMARY

| PLAN | QUANTITY | DESCRIPTION | AREA | TOTAL |
|---|---|---|---|---|
| A1 | 9 | 2 bdrm/2 baths | 1,018 SF | 9,162 SF |
| A2 | 18 | 2 bdrm/2 baths | 978 SF | 17,604 SF |
| A3 | 3 | 2 bdrm/1 baths | 910 SF | 2,730 SF |
| A4 | 3 | 2 bdrm/2 baths | 1,046 SF | 3,138 SF |
| A5 | 3 | 2 bdrm/2 baths | 1,060 SF | 3,180 SF |
| B1 | 3 | 1 bdrm/1 bath | 707 SF | 2,121 SF |
| B2 | 3 | 1 bdrm/1 bath | 748 SF | 2,244 SF |
| B3 | 3 | 1 bdrm/1 bath | 837 SF | 2,511 SF |
| B4 | 6 | 1 bdrm/1 bath | 705 SF | 4,230 SF |
| TOTAL | 51 residential units provided | | | 46,920 SF |
| corridors,common areas, lobby, stairs, balconies | | | | 13,982 SF |
| TOTAL BUILDING AREA | | | | 60,902 SF |

**MAX. FAR ALLOWED: 1.75/1.0 X 53,576 SF = 93,758 SF**
**FAR PROPOSED: 60,902 / 53,576 = 1.14/1.0**

### PARKING SUMMARY

REQUIRED PARKING SPACES:
required commercial parking (existing Credit Union)
1 space per 300 sq. ft.
11,768 sf/300 = 40 spaces
TOTAL PARKING PROVIDED = 47 SPACES
required resident parking:
2 spaces per unit = 2 x 51
102 parking spaces required
required guest parking:
1 space per 4 units = 1 x 51/4
13 guest parking spaces required
TOTAL PARKING REQUIRED = 115 SPACES
DISABLED PARKING REQUIRED:
3% of 115 parking spaces
4 disabled parking spaces required
PROVIDED PARKING PROPOSED:
26 compact spaces (22.6% - 25% allowed)
4 disabled parking spaces (3.5%)
12 tandem spaces (10.4% - 33% allowed)
10 paralell spaces (8.7%)
63 standard spaces (54.8%)
(includes 13 guest parking spaces)
TOTAL PARKING PROPOSED = 115 SPACES


DON WILSON BUILDERS
23705 CRENSHAW BLVD STE 200
TORRANCE CA 90510


DATE: MAY 12, 2024

## FIRE PREVENTION NOTES:

1. PROVIDE APPROVED SIGNS OR OTHER APPROVED NOTICES OR MARKINGS THAT INCLUDE THE WORDS NO PARKING - FIRE LANE. SIGNS SHALL HAVE A MINIMUM DIMENSION OF 12 INCHES WIDE BY 18 INCHES HIGH AND HAVE RED LETTERS ON A WHITE REFLECTIVE BACKGROUND. SIGNS SHALL BE PROVIDED FOR FIRE APPARATUS ACCESS ROADS, TO CLEARLY INDICATE THE ENTRANCE TO SUCH ROAD, OR PROHIBIT THE OBSTRUCTION THEREOF AND AT INTERVALS, AS REQUIRED BY THE FIRE INSPECTOR. FIRE CODE 503.3.

2. STRUCTURES AND OUTDOOR STORAGE UNDERNEATH HIGH VOLTAGE TRANSMISSION LINES (66 KILOVOLTS OR GREATER) SHALL COMPLY WITH FIRE CODE 316.6 AND COUNTY OF LOS ANGELES FIRE

3. PER DEPARTMENT REGULATION 27. ANY PROPOSED CONSTRUCTION OR LAND USE WITHIN 100 FEET OF THE DRIP LINE OF HIGH VOLTAGE TRANSMISSION LINES SHALL BE SUBJECT TO REVIEW BY THE FIRE MARSHAL.

4. THE AREA OF FIRE FIGHTING OPERATIONS, AS DETERMINED BY THE FIRE CODE OFFICIAL, SHALL NOT BE LOCATED UNDERNEATH HIGH VOLTAGE TRANSMISSION LINES. FIRE CODE 503.2.9

5. SECURITY BARRIERS, VISUAL SCREEN BARRIERS OR OTHER OBSTRUCTIONS SHALL NOT BE INSTALLED ON THE ROOF OF ANY BUILDING IN SUCH A MANNER AS TO OBSTRUCT FIREFIGHTER ACCESS OR EGRESS IN THE EVENT OF FIRE OR OTHER EMERGENCY. PARAPETS SHALL NOT EXCEED 48 INCHES FROM THE TOP OF THE PARAPET TO THE ROOF SURFACE ON MORE THAN TWO SIDES. FIRE CODE 504.5

6. APPROVED BUILDING ADDRESS NUMBERS, BUILDING NUMBERS OR APPROVED BUILDING IDENTIFICATION SHALL BE PROVIDED AND MAINTAINED SO AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET FRONTING THE PROPERTY. THE NUMBERS SHALL CONTRAST WITH THEIR BACKGROUND, BE ARABIC NUMERALS OR ALPHABET LETTERS, AND BE A MINIMUM OF 4 INCHES HIGH WITH A MINIMUM STROKE WIDTH OF 0.5 INCH. FIRE CODE 505.1

7. AN APPROVED KEY BOX, LISTED IN ACCORDANCE WITH UL 1037 SHALL BE PROVIDED AS REQUIRED BY FIRE CODE 506. THE LOCATION OF EACH KEY BOX SHALL BE DETERMINED BY THE FIRE INSPECTOR.

8. THE REQUIRED FIRE FLOW FOR FIRE HYDRANTS AT THIS LOCATION IS 2,250 GPM, AT 20 PSI RESIDUAL PRESSURE, FOR A DURATION OF 2 HOURS OVER AND ABOVE MAXIMUM DAILY DOMESTIC DEMAND. FIRE CODE 507.3

THE REQUIRED FIRE FLOW IS BASED ON THE FOLLOWING CALCULATION:
TYPE OF CONSTRUCTION PER THE BUILDING CODE TYPE VA
TOTAL FIRE FLOW REQUIRED 2,250 GPM

9. ELEVATORS, ESCALATORS AND MOVING WALKS SHALL COMPLY WITH THE REQUIREMENTS SET FORTH IN BUILDING CODE CHAPTER 30.

10. BUILDINGS AND STRUCTURES WITH ONE OR MORE PASSENGER SERVICE ELEVATORS SHALL BE PROVIDED WITH NOT LESS THAN ONE MEDICAL EMERGENCY SERVICE ELEVATOR TO ALL LANDINGS MEETING THE REQUIREMENTS OF 3002.4.1A THROUGH 3002.4.7A. BUILDING CODE 3002.4A

11. PROVIDE AN APPROVED AUTOMATIC FIRE SPRINKLER SYSTEM AS SET FORTH BY BUILDING CODE 905 AND FIRE CODE 905. PLANS SHALL BE SUBMITTED TO THE SPRINKLER PLAN CHECK UNIT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. REASON: TYPE OF FIRE SPRINKLER SYSTEM: 903.3.1.1, 903.3.1.2, 903.3.1.3

12. PROVIDE AN APPROVED CLASS _1_ STANDPIPE SYSTEM AS SET FORTH BY BUILDING CODE AND FIRE CODE 905. SUBMIT PLANS TO THE SPRINKLER PLAN CHECK UNIT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. REASON: CBC 905.1

13. PORTABLE FIRE EXTINGUISHER REQUIREMENTS SHALL BE DETERMINED BY FIRE DEPARTMENT FIELD INSPECTOR IN ACCORDANCE WITH FIRE CODE 1002.1.

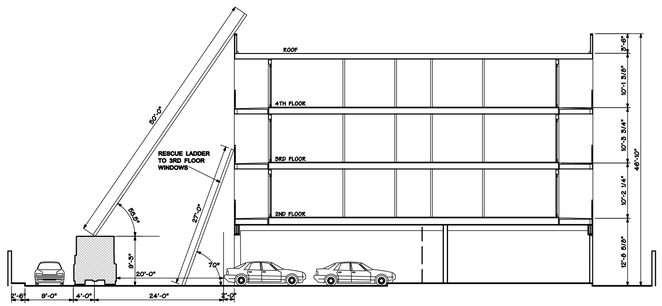
14. DUMPSTERS AND CONTAINERS WITH AN INDIVIDUAL CAPACITY OF 1.5 CUBIC YARDS (40.5 CU. FT.) OR MORE SHALL NOT BE STORED IN BUILDINGS OR PLACED WITHIN 5 FEET OF COMBUSTIBLE WALLS, OPENINGS OR COMBUSTIBLE ROOF EAVES, UNLESS AREAS CONTAINING DUMPSTERS OR CONTAINERS ARE PROTECTED BY AN APPROVED AUTOMATIC FIRE SPRINKLER SYSTEM. FIRE CODE 304.3.3

15. THE MEANS OF EGRESS, AND EXIT DISCHARGE, SHALL BE ILLUMINATED AT ANY TIME THE BUILDING IS OCCUPIED WITH A LIGHT INTENSITY OF NOT LESS THAN 1 FOOT-CANDLE AT THE WALKING SURFACE LEVEL. BUILDING CODE 1008.2

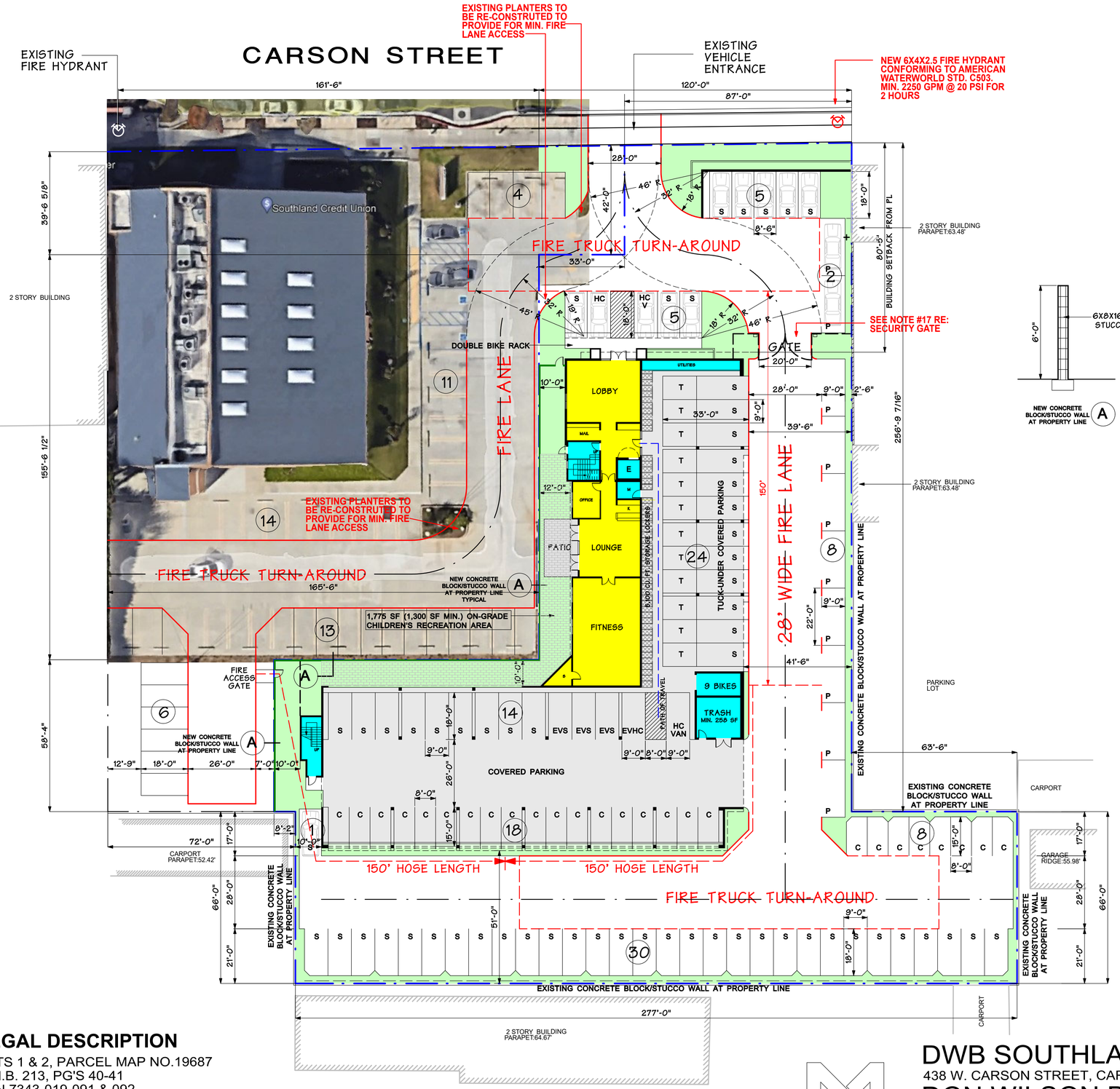
16. THE POWER SUPPLY FOR MEANS OF EGRESS ILLUMINATION SHALL NORMALLY BE PROVIDED BY THE PREMISES ELECTRICAL SUPPLY. IN THE EVENT OF POWER SUPPLY FAILURE, THE EMERGENCY POWER SYSTEM SHALL PROVIDE POWER FOR A DURATION OF NOT LESS THAN 90 MINUTES AND SHALL CONSIST OF STORAGE BATTERIES, UNIT EQUIPMENT OR AN ON-SITE GENERATOR. BUILDING CODE 1006.3

17. 503.6 SECURITY GATES:
THE INSTALLATION OF SECURITY GATES ACROSS A FIRE APPARATUS ACCESS ROAD SHALL BE APPROVED BY THE FIRE CHIEF. WHERE SECURITY GATES ARE INSTALLED, THEY SHALL HAVE AN APPROVED MEANS OF EMERGENCY OPERATION. THE SECURITY GATES AND THE EMERGENCY OPERATION SHALL BE MAINTAINED OPERATIONAL AT ALL TIMES. ELECTRIC GATE OPERATORS, WHERE PROVIDED, SHALL BE LISTED IN ACCORDANCE WITH UL 325. GATES INTENDED FOR AUTOMATIC OPERATION SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED TO COMPLY WITH THE REQUIREMENTS OF ASTM F2200.
GATE OPENERS SHALL BE LiftsMaster LA500PKGUL DUAL SWING GATE OR APPROVED EQUAL.

18. A RECORDED ACCESS EASEMENT IS REQUIRED PRIOR TO THE APPROVAL OF THE FINAL MAP; FOR ACCESS SHOWN TO BE UTILIZED AT THE ADJACENT PROPERTY.




BUILDING SECTION




## LEGAL DESCRIPTION

LOTS 1 & 2, PARCEL MAP NO.19687
P.M.B. 213, PG'S 40-41
APN 7343-019-091 & 092

SCALE: 1" = 20'-0"

0 30 60 90 120

# Site Plan

INDICATES ON-SITE GUEST CAR PARKING SPACES - 13 TOTAL


RANDY MORRIS ARCHITECT
45120 VIA CARINA
INDIAN WELLS, CA 92210
T. (310) 809-6745
E-MAIL rj.morris3@verizon.net


# DWB SOUTHLAND

438 W. CARSON STREET, CARSON, CA

## DON WILSON BUILDERS

23705 CRENSHAW BLVD STE 200
TORRANCE CA 90510

SCALE: 1" = 20'-0"
DATE: MAY 12, 2024

SHEET 2 OF 7

## FIRE PREVENTION NOTES:

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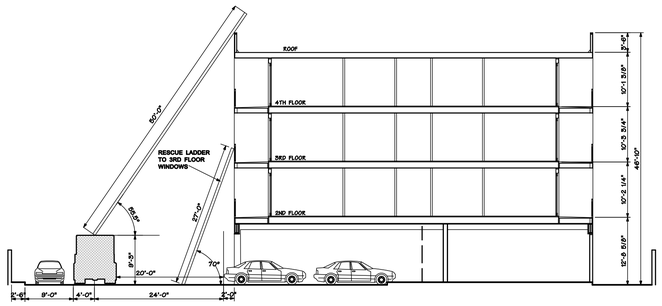
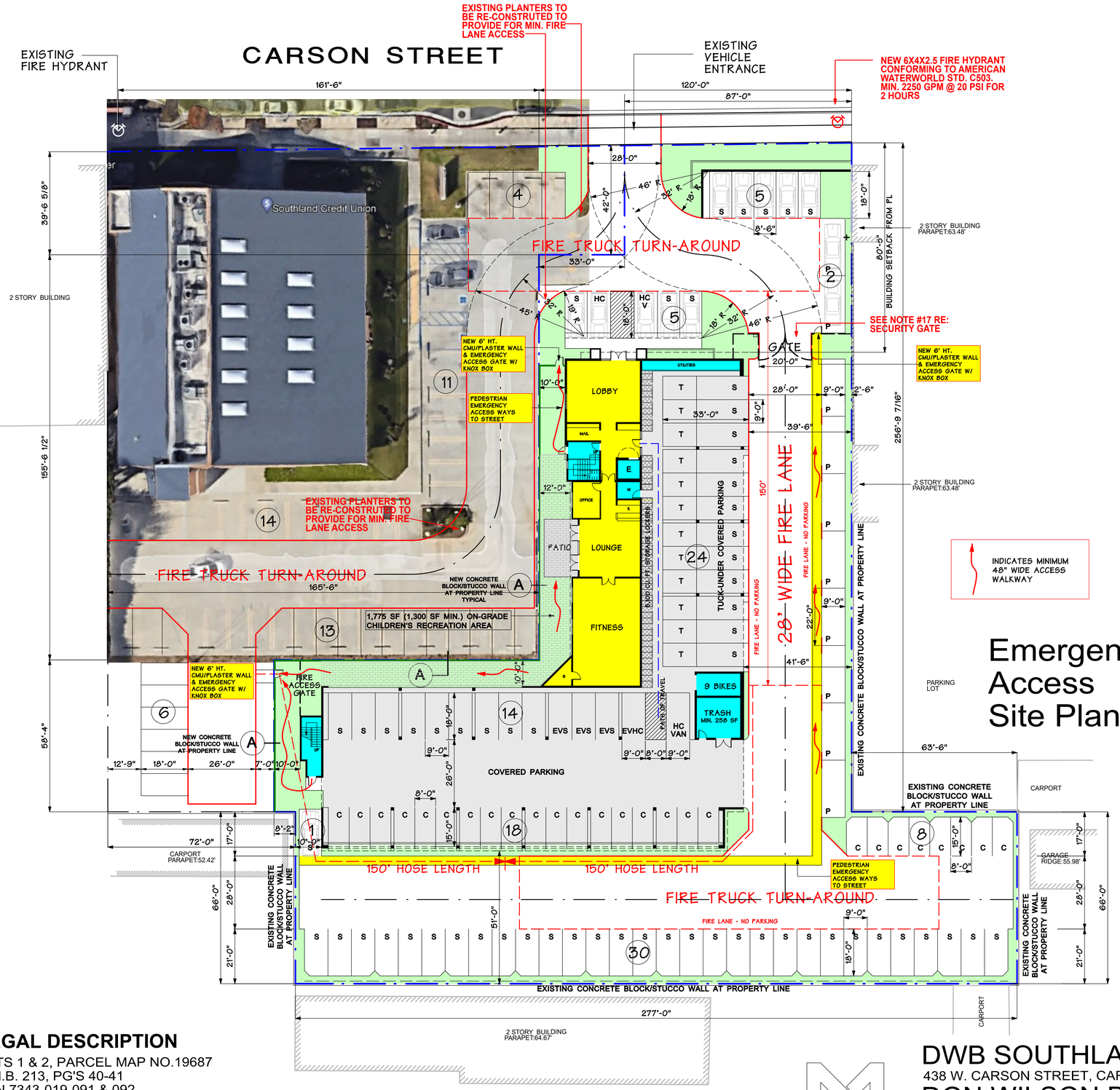



BUILDING SECTION




# Emergency Access Site Plan

## LEGAL DESCRIPTION

LOTS 1 & 2, PARCEL MAP NO.19687
P.M.B. 213, PG'S 40-41
APN 7343-019-091 & 092

SCALE: 1" = 20'-0"

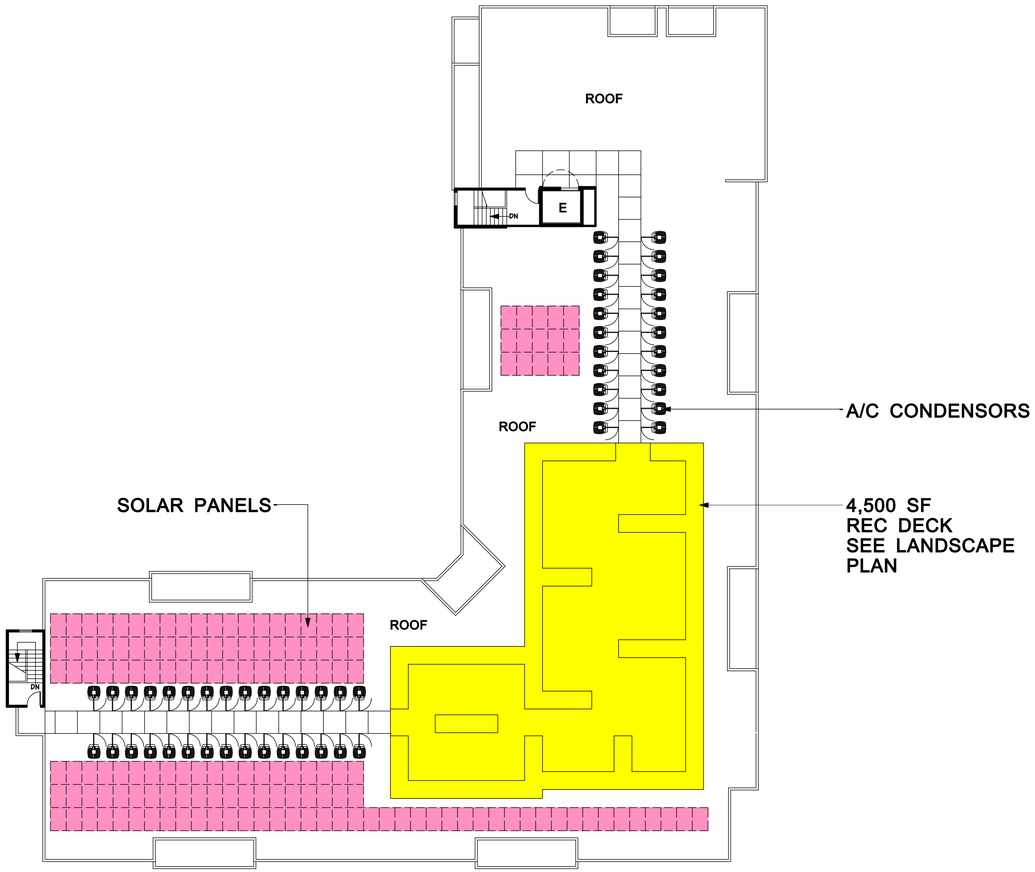
0 30 60 90 120

# Site Plan


DWB SOUTHLAND
438 W. CARSON STREET, CARSON, CA
DON WILSON BUILDERS
23705 CRENSHAW BLVD STE 200
TORRANCE CA 90510

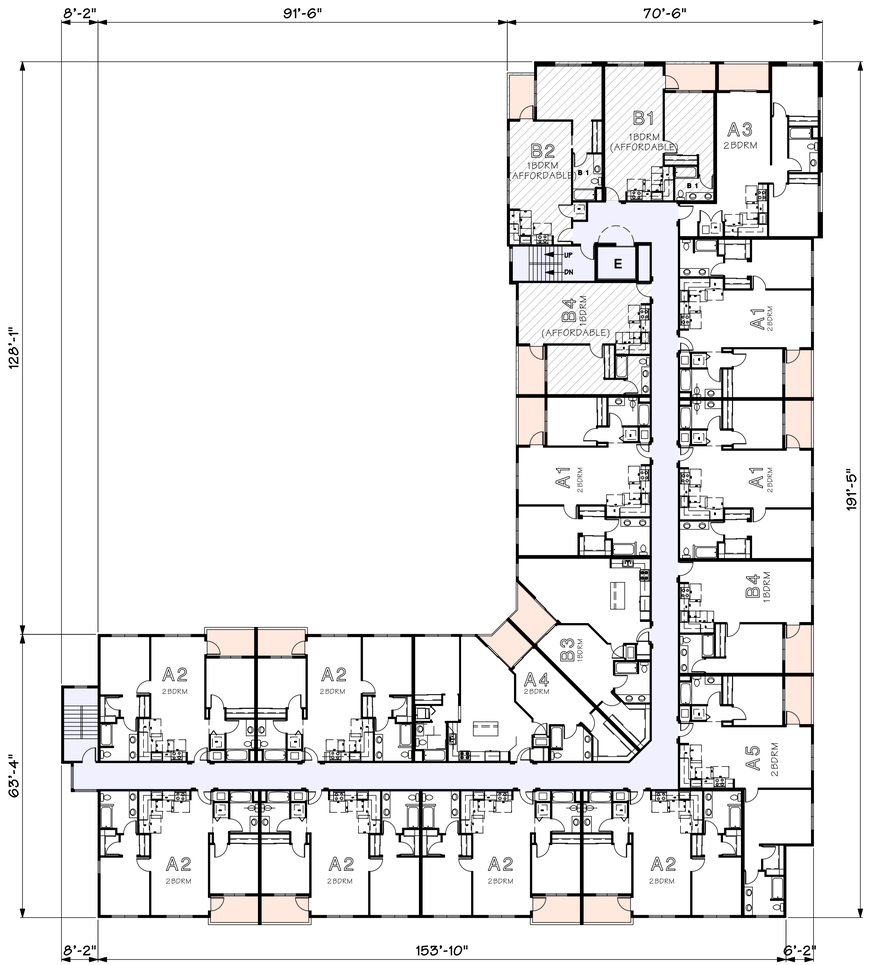
RANDY MORRIS ARCHITECT
45120 VIA CARINA
INDIAN WELLS, CA 92210
T. (310) 809-6745
E-MAIL rj.morris3@verizon.net


SCALE: 1" = 20'-0"
DATE: MAY 12, 2024






ROOF PLAN




2ND FLOOR PLAN
5 - 1 BDRM UNITS
12 - 2 BDRM UNIT
INCLUDES 3 AFFORDABLE UNITS

FIRE DEPARTMENT NOTES:
1. BUILDING TO BE FULLY FIRE SPRINKLERED.
2. FIRE LANE TO BE MIN. 28'-0" WIDE 'CLEAR TO SKY'.
3. FIRE LANES SHALL BE CLEAR OF OBSTRUCTIONS & MAINTAINED PER TITLE 32 LA COUNTY FIRE CODE.
4. FIRE HYDRANTS SHALL MEASURE 6"X4"X2.5" BRASS OR BRONZE AND INSTALLED PER TITLE 32 LA COUNTY FIRE CODE.
5. ANY REQUIRED PUBLIC FIRE HYDRANTS SHALL BE INSTALLED, TESTED & ACCEPTED PRIOR TO START OF CONSTRUCTION.

SCALE: 1" = 20'-0"
0 30 60 90 120

# Building Floor Plans

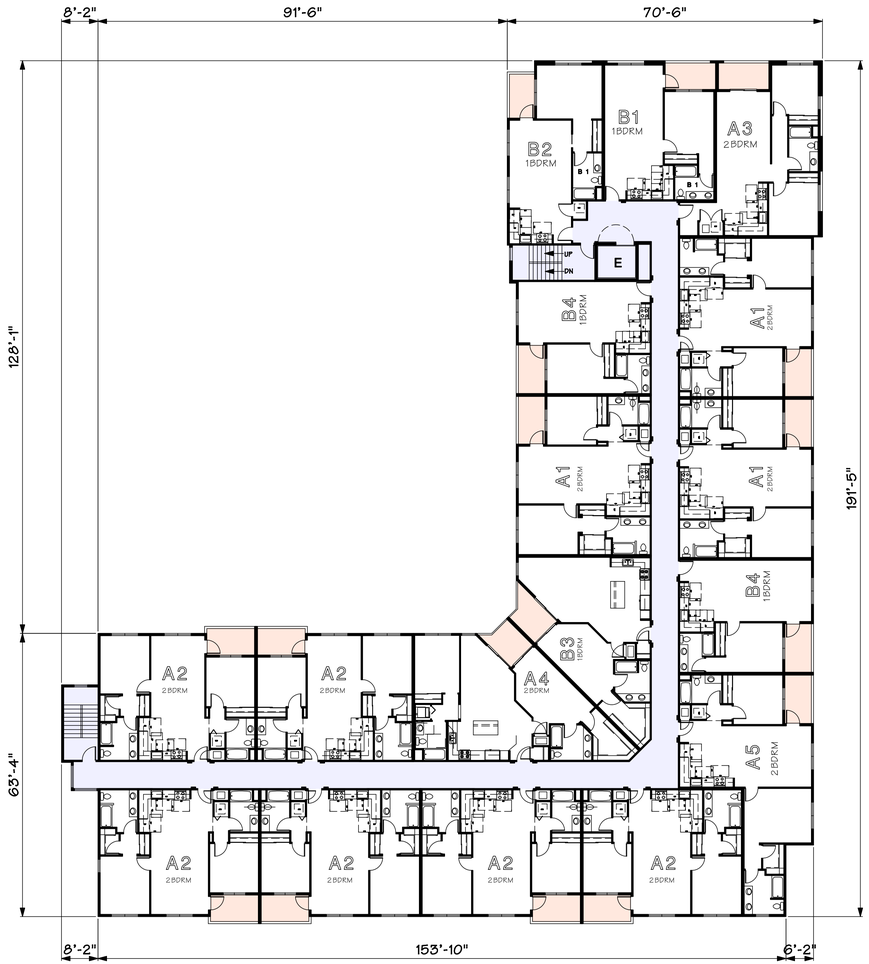
RANDY MORRIS ARCHITECT
76167 VIA AREZZO
INDIAN WELLS, CA 92210
T. (310) 809-6745
E-MAIL rj.morris3@verizon.net

## DWB SOUTHLAND
438 W. CARSON STREET, CARSON, CA

## DON WILSON BUILDERS
23705 CRENSHAW BLVD STE 200
TORRANCE CA 90510

SCALE: 1/16" = 1'-0"
DATE: MAY 12, 2024

3RD FLOOR PLAN
5 - 1 BDRM UNITS
12 - 2 BDRM UNITS
INCLUDES 2 AFFORDABLE UNITS




4TH FLOOR PLAN
5 - 1 BDRM UNITS
12 - 2 BDRM UNITS

FIRE DEPARTMENT NOTES:
1. BUILDING TO BE FULLY FIRE SPRINKLERED.
2. FIRE LANE TO BE MIN. 28'-0" WIDE 'CLEAR TO SKY'.
3. FIRE LANES SHALL BE CLEAR OF OBSTRUCTIONS & MAINTAINED PER TITLE 32 LA COUNTY FIRE CODE.
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5. ANY REQUIRED PUBLIC FIRE HYDRANTS SHALL BE INSTALLED, TESTED & ACCEPTED PRIOR TO START OF CONSTRUCTION.

SCALE: 1" = 20'-0"

0 30 60 90 120

# Building Floor Plans

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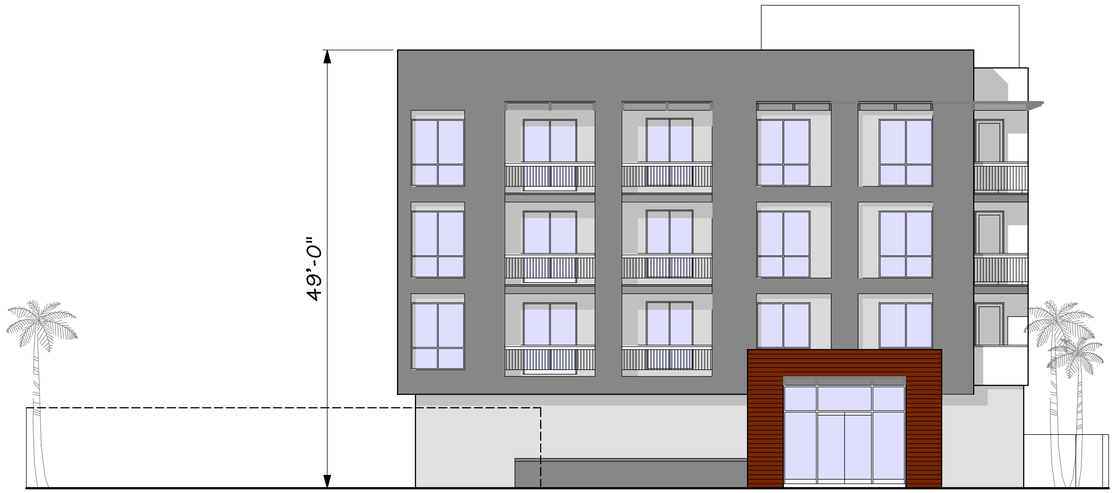
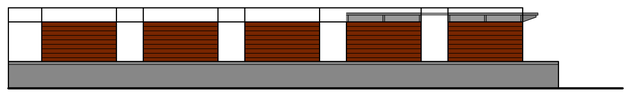
## DON WILSON BUILDERS
23705 CRENSHAW BLVD STE 200
TORRANCE CA 90510

SCALE: 1/16" = 1'-0"
DATE: MAY 12, 2024

SHEET 3A OF 7




NORTH ELEVATIONS



NORTH ELEVATION

SOUTH ELEVATION

STEEL DOORS
TYPICAL
DUNN EDWARDS
DE 6346
"SILVER SPRINGS"

VINYL WINDOWS,
DOORS & STOREFRONT
WHITE FRAMES

GLASS
TYPICAL
CLEAR LOW-E
DOUBLE PANE

HORIZONTAL
SYNTHETIC
SIDING

EXTERIOR PLASTER
STAIR TOWER
LA HABRA STUCCO
BAY RIDGE 81593

EXTERIOR PLASTER
TYPICAL
LA HABRA STUCCO
SILVER GREY X-16

EXTERIOR PLASTER
TYPICAL
LA HABRA STUCCO
DOVE GREY 40

SCALE: 1" = 12'-0"

0 30 60 90 120

# Exterior Elevations

RANDY MORRIS ARCHITECT
45120 VIA CARINA
INDIAN WELLS, CA 92210
T. (310) 809-6745
E-MAIL rj.morris3@verizon.net

## DWB SOUTHLAND
438 W. CARSON STREET, CARSON, CA

## DON WILSON BUILDERS
23705 CRENSHAW BLVD STE 200
TORRANCE CA 90510

SCALE: 1/8" = 1'-0"
DATE: MAY 12, 2024

SHEET 4 OF 7

WEST ELEVATION

EAST ELEVATION

STEEL DOORS
TYPICAL
DUNN EDWARDS
DE 6346
"SILVER SPRINGS"

VINYL WINDOWS,
DOORS & STOREFRONT
WHITE FRAMES

GLASS
TYPICAL
CLEAR LOW-E
DOUBLE PANE

HORIZONTAL
SYNTHETIC
SIDING

EXTERIOR PLASTER
STAIR TOWER
LA HABRA STUCCO
BAY RIDGE 81593

EXTERIOR PLASTER
TYPICAL
LA HABRA STUCCO
SILVER GREY X-16

EXTERIOR PLASTER
TYPICAL
LA HABRA STUCCO
DOVE GREY 40

SCALE: 1" = 12'-0"

0 30 60 90 120

# Exterior Elevations

RANDY MORRIS ARCHITECT
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## DON WILSON BUILDERS
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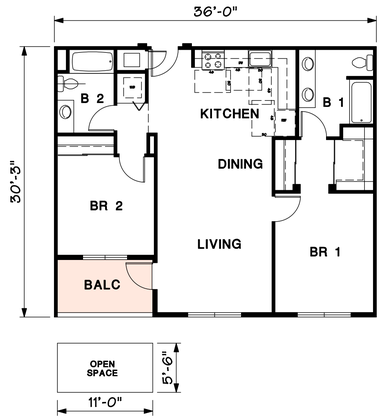
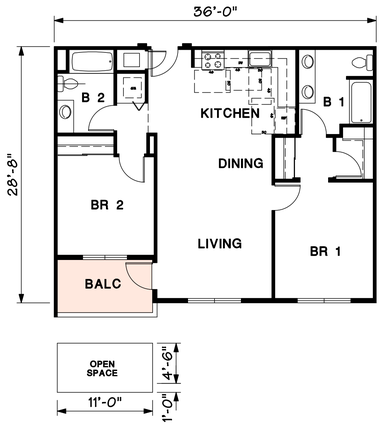
TORRANCE CA 90510

SCALE: 1/8" = 1'-0"
DATE: MAY 12, 2024

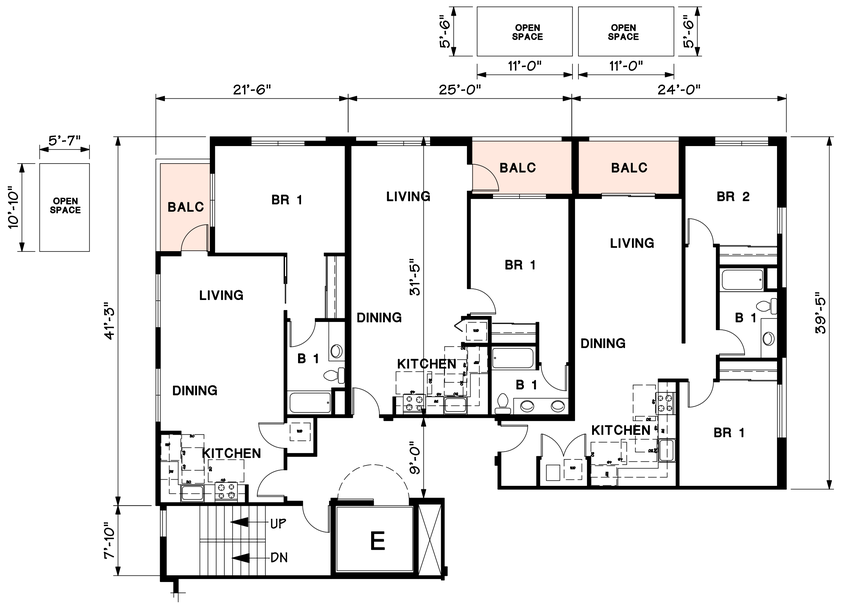
SHEET 5 OF 7




# UNIT A1
1,018 SF
60.5 SF BALCONY



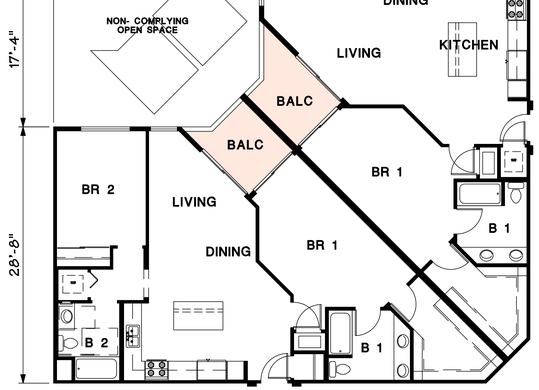

# UNIT A2
978 SF
60.5 SF BALCONY




# UNIT B2
748 SF
60.5 SF BALCONY

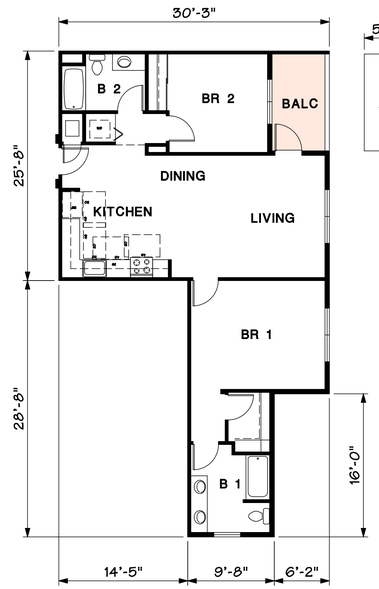
# UNIT B1
707 SF
60.5 SF BALCONY

# UNIT A3
910 SF
60.5 SF BALCONY

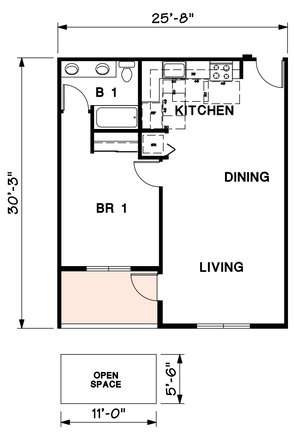



# UNIT A4
1,046 SF
57 SF BALCONY

# UNIT B3
837 SF
54 SF BALCONY




# UNIT A5
1,060 SF
60.5 SF BALCONY




# UNIT B4
705 SF
60.5 SF BALCONY

SCALE: 1/8" = 1'-0"
0 30 60 90 120

# Unit Floor Plans

RANDY MORRIS ARCHITECT
76167 VIA AREZZO
INDIAN WELLS, CA 92210
T. (310) 809-6745
E-MAIL rj.morris3@verizon.net

# DWB SOUTHLAND
438 W. CARSON STREET, CARSON, CA

## DON WILSON BUILDERS
23705 CRENSHAW BLVD STE 200
TORRANCE CA 90510

SCALE: 1/8" = 1'-0"
DATE: MAY 12, 2024
SHEET 6 OF 7

# NORTH STREET ELEVATION

**100' OF 281-6" DEVOTED TO COMMERCIAL GROUND FLOOR USES (35.5%).**
**57'-6" PROPOSED PARKING ART WALL (20.4%)**

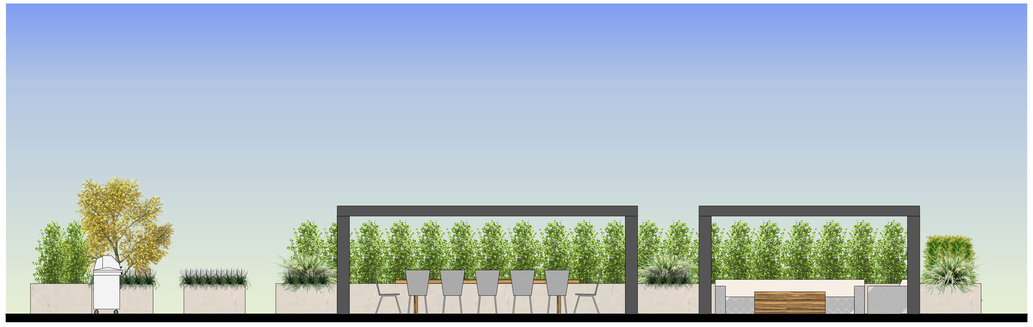
RANDY MORRIS ARCHITECT
45120 VIA CARINA
INDIAN WELLS, CA 92210
T. (310) 809-6745
E-MAIL rj.morris3@verizon.net

## DWB SOUTHLAND
438 W. CARSON STREET, CARSON, CA

## DON WILSON BUILDERS
23705 CRENSHAW BLVD STE 200
TORRANCE CA 90510

SCALE: 1/8" = 1'-0"
DATE: MAY 12, 2024

SHEET 7 OF 7



A-A
L3

## SECTION A-A
SCALE: 1" = 5'

A1 RECTANGULAR TABLE AND CHAIRS

A2 SQUARE TABLE AND CHAIRS

A3 COUCH WITH COFFEE TABLE

A4 CHAIR

A5 PERGOLA WITH SHADE CANOPY



A6 BBQ ISLAND

## ROOF TOP AMENITIES LIST

A1 **RECTANGULAR TABLE & CHAIRS**
COLOR: BY DEVELOPER
MODEL: HECK FSC TEAK ALUMINUM DINING TABLE SET OR EQUAL
QTY: 1

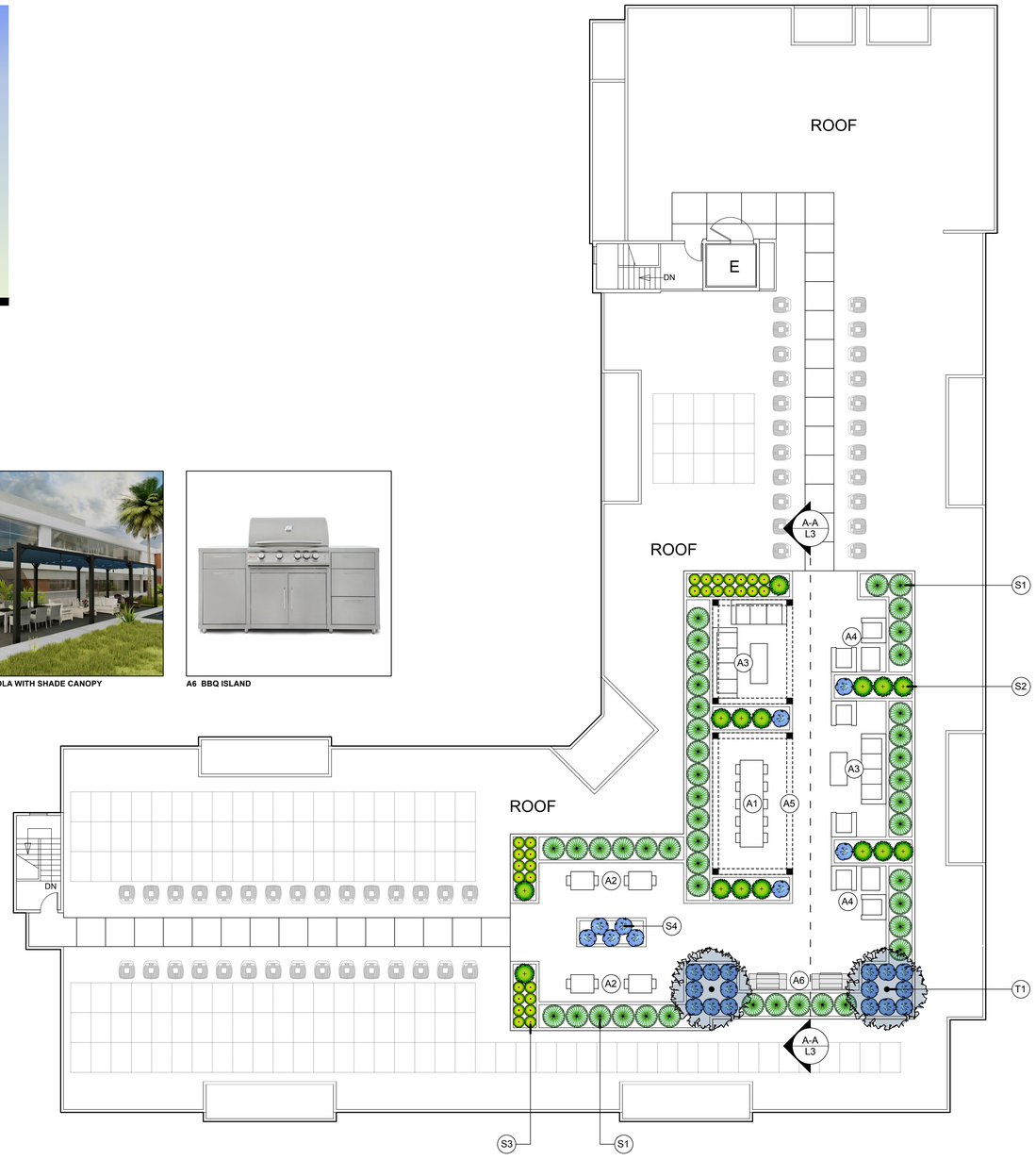
A2 **SQUARE TABLE & CHAIRS**
COLOR: BY DEVELOPER
BY: SUNNYDAZE JULIAN PATIO DINING SET OR EQUAL
QTY: 4

A3 **COUCH WITH COFFEE TABLE**
COLOR: BY DEVELOPER
BY: GIOVANNA OUTDOOR ALUMINUM CHAT SET OR EQUAL
QTY: 2

A4 **FIXED CHAIR**
COLOR: BY DEVELOPER
BY: ELLIOT OUTDOOR FIXED CHAIR OR EQUAL
QTY: 6

A5 **PERGOLA WITH SHADE CANOPY**
COLOR: BY DEVELOPER
BY: TREX PERGOLA + SHADE TREE CANOPY OR EQUAL
QTY: 2

A6 **BBQ ISLAND**
COLOR: BY DEVELOPER
BY: BLAZE STAINLESS STEEL OR EQUAL
QTY: 2



T3 PARKINSONIA 'DESERT MUSEUM'

S1 CALLISTEMON 'SLIM'

S2 MUHLENBERGIA RIGENS

S3 MYRTUS 'COMPACTA'

S4 SALVIA LEUCANTHA

## PLANT LIST

***SEE SHEET L1 FOR SEPARATE 1ST FLOOR PLANT LIST***

| NO. | BOTANICAL NAME | COMMON NAME | SIZE | QTY | HEIGHT & WIDTH | WUCOLS RATING | REMARKS |
|---|---|---|---|---|---|---|---|
| **TREE:** | | | | | | | |
| T1 | PARKINSONIA 'DESERT MUSEUM' | DESERT MUSEUM PALO VERDE | 24" BOX | 2 | 20-30' X 20-30' | LOW | MULTI TRUNK |
| **SHRUBS:** | | | | | | | |
| S1 | CALLISTEMON VIMINALIS 'SLIM' | COMPACT WEEPING BOTTLEBRUSH | 15 GAL. | 45 | 4-6' X 4' | LOW | MAINTAIN AS 5 - 6' TALL HEDGE |
| S2 | MUHLENBERGIA RIGENS | DEER GRASS | 5 GAL. | 15 | 3-4' X 3-4' | LOW | |
| S3 | MYRTUS COMMUNIS 'COMPACTA' | COMPACT MYRTLE | 5 GAL. | 30 | 3-4' X 2-3' | LOW | MAINTAIN AS 3 - 4' TALL HEDGE |
| S4 | SALVIA LEUCANTHA | MEXICAN BUSH SAGE | 5 GAL. | 25 | 3' X 3' | LOW | |

N

**APN: 7342-019-091 & 092**

# CONCEPTUAL LANDSCAPE PLAN - ROOF TOP
SCALE: 1" = 10'

| REVISIONS | BY |
|---|---|
| 1 MAY 2024 | |
| 2 JUNE 2024 | |
| 3 MAR 2025 | |
| 4 APR 2025 | |
| 5 MAY 2025 | |

CRAIG WEBER & ASSOCIATES

PLANS PREPARED FOR:
DON WILSON BUILDERS
23705 CRENSHAW BLVD STE 200
TORRANCE, CA 90510

PREPARED BY:
CRAIG WEBER & ASSOCIATES
891 SANTIAGO WAY, LONG BEACH, CA, 90804
PHONE 562-494-8411

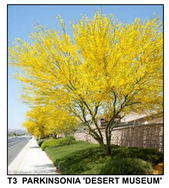
REGISTERED LANDSCAPE ARCHITECT
CRAIG WEBER, 2365
Signature
Exp. Date
STATE OF CALIFORNIA

PROJECT:
**APN: 7342-019-091 & 092**
DWB SOUTHLAND
438 W. CARSON STREET
CARSON, CA

| | |
|---|---|
| Date: | MARCH 2024 |
| Scale: | 1" = 10' |
| Drawn: | KGW |
| Job: | 1629 |
| Sheet: | L3 |

T1 CUPRESSUS SEMPERVIRENS

T2 LOPHOSTEMON CONFERTUS



T3 PARKINSONIA 'DESERT MUSEUM'

T4 PHOENIX DACTYLIFERA

T5 ULMUS PARVIFOLIA

S1 AGAVE ATTENUATA

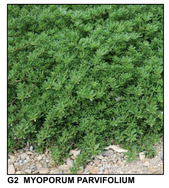
S2 MUHLENBERGIA RIGENS

S3 MYRTUS 'COMPACTA'

S4 SALVIA LEUCANTHA

S5 WESTRINGIA 'WYNYABBIE GEM'

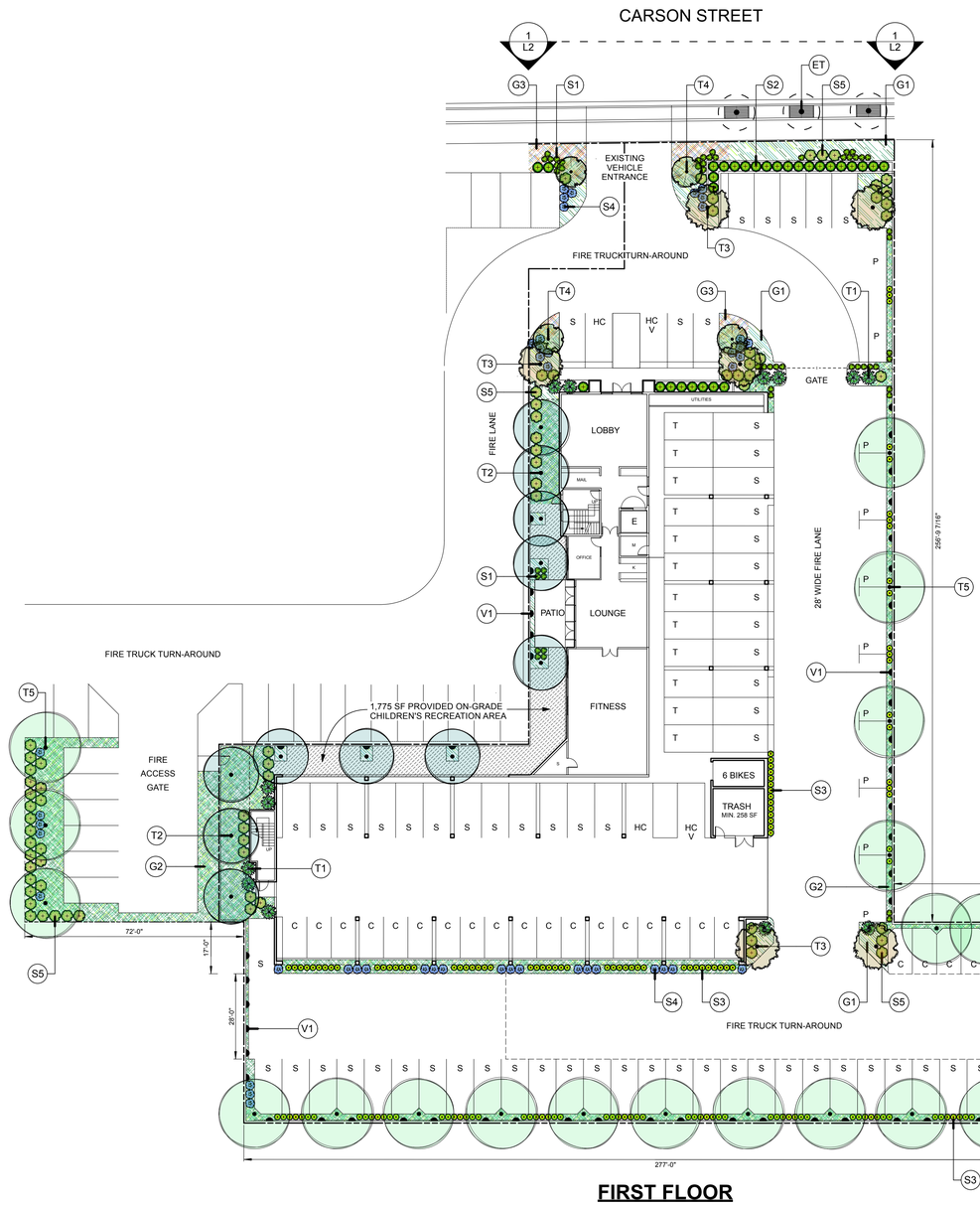
G1 CARISSA 'GREEN CARPET'



G2 MYOPORUM PARVIFOLIUM

G3 SENECIO SERPENS

V1 MACFADYENA UNGUIS-CATI




## FIRST FLOOR

## PLANT LIST

*SEE SHEET L2 FOR SEPARATE ROOF TOP PLANT LIST*

| NO. | BOTANICAL NAME | COMMON NAME | SIZE | QTY | HEIGHT & WIDTH | WUCOLS RATING | REMARKS |
|---|---|---|---|---|---|---|---|
| **EXISTING STREET TREE:** | | | | | | | |
| ET | KOELREUTERIA PANICULATA | GOLDEN RAIN TREE | | 3 | | MODERATE | TO REMAIN, PROTECT IN PLACE. SEE NOTE BELOW |
| **TREES:** | | | | | | | |
| T1 | CUPRESSUS SEMPERVIRENS | ITALIAN CYPRESS | 24" BOX | 14 | 30-40' X 5' | LOW | |
| T2 | LOPHOSTEMON CONFERTUS | BRISBANE BOX | 24" BOX | 11 | 35-45' X 20-25' | MODERATE | |
| T3 | PARKINSONIA 'DESERT MUSEUM' | DESERT MUSEUM PALO VERDE | 24" BOX | 6 | 20-30' X 20-30' | LOW | MULTI TRUNK |
| T4 | PHOENIX DACTYLIFERA 'MEDJOOL' | MEDJOOL DATE PALM | 10' T.H. | 4 | 20-30' X 10-15' | LOW | STD. TRUNK |
| T5 | ULMUS PARVIFOLIA 'TRUE GREEN' | CHINESE EVERGREEN ELM | 24" BOX | 21 | 30-40' X 30-40' | MODERATE | STD. TRUNK |
| **SHRUBS:** | | | | | | | |
| S1 | AGAVE ATTENUATA | FOXTAIL AGAVE | 5 GAL. | 50 | 2-3' X 2-3' | LOW | |
| S2 | MUHLENBERGIA RIGENS | DEER GRASS | 5 GAL. | 29 | 3-4' X 3-4' | LOW | |
| S3 | MYRTUS COMMUNIS 'COMPACTA' | COMPACT MYRTLE | 5 GAL. | 130 | 3-4' X 2-3' | LOW | MAINTAIN AS 3 - 4' TALL HEDGE |
| S4 | SALVIA LEUCANTHA | MEXICAN BUSH SAGE | 5 GAL. | 48 | 3' X 3' | LOW | |
| S5 | WESTRINGIA 'WYNYABBIE GEM' | WYNYABBIE GEM COAST ROSEMARY | 5 GAL. | 72 | 4-5' X 4-5' | LOW | |
| **GROUNDCOVERS:** | | | | | | | |
| G1 | CARISSA MACROCARPA 'GREEN CARPET' | GREEN CARPET NATAL PLUM | 1 GAL. | 24" o.c. | 1-2' X 1-2' | LOW | |
| G2 | MYOPROUM PARVIFOLIUM | PROSTRATE MYOPROUM | 1 GAL. | 36" o.c. | 1' X 2-4' | LOW | |
| G3 | SENECIO SERPENS | BLUE CHALKSTICKS | 4" POT | 18" o.c. | 12" X 1-2' | LOW | |
| **VINE:** | | | | | | | |
| V1 | MACFADYENA UNGUIS-CATI | CAT'S CLAW | 5 GAL. | 56 | | LOW | |

## EXISTING TREE PROTECTION NOTE

6' CHAIN LINK FENCING TO BE PLACED AT THE EDGE OF THE TREE WELL, BUT NOT IN THE TREE WELL. CONTRACTOR AND SUB-CONTRACTORS MUST BE NOTIFIED THAT ANY DAMAGE TO THE EXISTING STREET TREES (KOELREUTERIA) WILL NECESSITATE REPLACEMENT AT THE CONTRACTOR'S EXPENSE. UTMOST CARE MUST BE GIVEN TO NOT BREAKING BRANCHES THAT EXTEND OVER STREET OR SIDEWALK DURING THE ENTIRE PROJECT. REPLACEMENT TREES WILL BE 36" BOX SIZE TO BE WATERED WEEKLY FOR 90 DAYS AND GUARANTEED FOR ONE YEAR. DETERMINATION WILL BE MADE BY CITY'S CERTIFIED ARBORIST. TYPE OF REPLACEMENT TREES WILL BE GOLD MEDALLION. REQUIRED SIGNAGE ON THE FENCING: "TREE PROTECTION ZONE: NO ENTRY, NO CUTTING BRANCHES, NO STORAGE OF SUPPLIES / DEBRIS."

## WATER BUDGET LANDSCAPE CALCULATIONS

***FUTURE FINAL LANDSCAPE DOCUMENT PACKAGE WILL COMPLY WITH THE CITY'S WELO PERFORMANCE COMPLIANCE APPROACH STANDARDS***

**REFERENCE EVAPOTRANSPIRATION (ETo) 43.2**

| PLANT DESCRIP. | PLANT FACTOR (PF) | IRRIGATION | IRRIG. EFF. (IE) | ETAF (PF / IE) | LAND. AREA | ETAF X AREA | ETWU |
|---|---|---|---|---|---|---|---|
| LOW WATER | 0.2 | DRIP | 0.81 | 0.25 | 8,787 | 2197 | 58,844 GAL. / YR. |
| MOD. WATER | 0.5 | DRIP | 0.81 | 0.62 | 160 | 99 | 2,652 GAL. / YR. |
| | | | | TOTAL | 8,947 S.F. | 2296 | |
| | | | | | | ETWU TOTAL | 61,496 GAL. / YR. |
| | | | | | | MAWA TOTAL | 131,800 GAL. / YR. |

**MAXIMUM APPLIED WATER ALLOWANCE (MAWA)**

MAWA = (ETo) (0.62) [(ETAF X LA) + ((1-ETAF) X SLA)]

MAWA = (43.2) (0.62) [(0.55 X 8,947) + (0.45 X 0)]

**MAWA = 131,800 GAL. / YR.**

**ETAF CALCULATIONS**

*(AVERAGE ETAF FOR REGULAR LANDSCAPE AREAS MUST BE .55 OR BELOW FOR RESIDENTIAL AREAS)*

TOTAL ETAF X AREA = 2296

TOTAL AREA = 8,947 S. F.

**AVERAGE ETAF = 0.26**

## PARKING AREA TREE TABLE

**TREES: 1 TREE / 5 PARKING STALLS (115 STALLS PROVIDED)**

REQUIRED = 23 TREES

PROVIDED = 23 TREES

## GENERAL NOTES

**PROJECT:**
APN: 7343-019-091 & 092
NEW MULTI-RESIDENTIAL PROJECT
348 W. CARSON STREET
CARSON, CALIFORNIA

**PROJECT APPLICANT:**
DON WILSON BUILDERS
23705 CRENSHAW BOULEVARD, STE. 200
TORRANCE, CALIFORNIA 90510

**PROJECT LANDSCAPE ARCHITECT:**
CRAIG WEBER & ASSOCIATES
950 SANTIAGO AVENUE
LONG BEACH, CALIFORNIA
562.494.0411

**LANDSCAPE AREA:**
ON SITE 1st FLOOR PLANTING AREA = 6,251 SQ. FT.
OFF SITE 1st FLOOR PLANTING AREA = 1,369 SQ. FT.
ROOF TOP PLANTING AREA = 1,327 SQ. FT.
TOTAL PROJECT LANDSCAPE AREA = 8,947 SQ. FT.

**WATER SUPPLY TYPE:**
POTABLE WATER

N

**APN: 7342-019-091 & 092**

# CONCEPTUAL LANDSCAPE PLAN - FIRST FLOOR

SCALE: 1" = 20'

| REVISIONS | BY |
|---|---|
| 1 MAY 2024 | |
| 2 JUNE 2024 | |
| 3 MAR 2025 | |
| 4 APR 2025 | |
| 5 MAY 2025 | |

CRAIG WEBER & ASSOCIATES

PLANS PREPARED FOR:
DON WILSON BUILDERS
23705 CRENSHAW BLVD STE 200
TORRANCE, CA 90510

PREPARED BY:
CRAIG WEBER & ASSOCIATES
950 SANTIAGO WAY, LONG BEACH, CA 90804
PH/FAX 562.494.0411

REGISTERED LANDSCAPE ARCHITECT — Kris Stein — Signature — 3290 — STATE OF CALIFORNIA

PROJECT:
**APN: 7342-019-091 & 092**
DWB SOUTHLAND
438 W. CARSON STREET
CARSON, CA

| | |
|---|---|
| Date: | MARCH 2024 |
| Scale: | 1" = 20' |
| Drawn: | KGW |
| Job: | 1629 |
| Sheet: | L1 |

1
L2

# ELEVATION 1

A4 VESICA PISCIS I

A5 SEED OF LIFE III

## PARKING ART WALL SITE AMENITIES

A1 **PLANTER WALL**
*SEE ARCHITECTURAL PLANS*
COLOR: BAY RIDGE (81593) STUCCO
BY: LA HABRA STUCCO

A2 **PARKING ART WALL**
*SEE ARCHITECTURAL PLANS*
COLOR: DOVE GREY (40) STUCCO
BY: LA HABRA STUCCO

A3 **PARKING ART WALL**
*SEE ARCHITECTURAL PLANS*
COLOR: HORIZONTAL SYNTHETIC SIDING

A4 **VESICA PISCIS I METAL WALL ART (30" X 46" - OUTDOOR VERSION)**
COLOR: STAINLESS STEEL
BY: ARTE AND METAL OR EQUAL
QTY: 2

A5 **SEED OF LIFE III METAL WALL ART (30" DIAMETER)**
COLOR: STAINLESS STEEL
BY: ARTE AND METAL OR EQUAL
QTY: 3

## PLANT LIST

***SEE SHEET L2 FOR SEPARATE ROOF TOP PLANT LIST***

| NO. | BOTANICAL NAME | COMMON NAME | SIZE | QTY | HEIGHT & WIDTH | WUCOLS RATING | REMARKS |
|---|---|---|---|---|---|---|---|
| **EXISTING STREET TREE:** | | | | | | | |
| ET | KOELREUTERIA PANICULATA | GOLDEN RAIN TREE | | 3 | | MODERATE | TO REMAIN, PROTECT IN PLACE. SEE NOTE BELOW |
| **TREES:** | | | | | | | |
| T1 | CUPRESSUS SEMPERVIRENS | ITALIAN CYPRESS | 24" BOX | 14 | 30-40' X 5' | LOW | |
| T2 | LOPHOSTEMON CONFERTUS | BRISBANE BOX | 24" BOX | 11 | 35-45' X 20-25' | MODERATE | |
| T3 | PARKINSONIA 'DESERT MUSEUM' | DESERT MUSEUM PALO VERDE | 24" BOX | 6 | 20-30' X 20-30' | LOW | MULTI TRUNK |
| T4 | PHOENIX DACTYLIFERA 'MEDJOOL' | MEDJOOL DATE PALM | 10' T.H. | 4 | 20-30' X 10-15' | LOW | STD. TRUNK |
| T5 | ULMUS PARVIFOLIA 'TRUE GREEN' | CHINESE EVERGREEN ELM | 24" BOX | 21 | 30-40' X 30-40' | MODERATE | STD. TRUNK |
| **SHRUBS:** | | | | | | | |
| S1 | AGAVE ATTENUATA | FOXTAIL AGAVE | 5 GAL. | 50 | 2-3' X 2-3' | LOW | |
| S2 | MUHLENBERGIA RIGENS | DEER GRASS | 5 GAL. | 29 | 3-4' X 3-4' | LOW | |
| S3 | MYRTUS COMMUNIS 'COMPACTA' | COMPACT MYRTLE | 5 GAL. | 130 | 3-4' X 2-3' | LOW | MAINTAIN AS 3 - 4' TALL HEDGE |
| S4 | SALVIA LEUCANTHA | MEXICAN BUSH SAGE | 5 GAL. | 48 | 3' X 3' | LOW | |
| S5 | WESTRINGIA 'WYNYABBIE GEM' | WYNYABBIE GEM COAST ROSEMARY | 5 GAL. | 72 | 4-5' X 4-5' | LOW | |
| **GROUNDCOVERS:** | | | | | | | |
| G1 | CARISSA MACROCARPA 'GREEN CARPET' | GREEN CARPET NATAL PLUM | 1 GAL. | 24" o.c. | 1-2' X 1-2' | LOW | |
| G2 | MYOPROUM PARVIFOLIUM | PROSTRATE MYOPROUM | 1 GAL. | 36" o.c. | 1' X 2-4' | LOW | |
| G3 | SENECIO SERPENS | BLUE CHALKSTICKS | 4" POT | 18" o.c. | 12" X 1-2' | LOW | |
| **VINE:** | | | | | | | |
| V1 | MACFADYENA UNGUIS-CATI | CAT'S CLAW | 5 GAL. | 56 | | LOW | |

**APN: 7342-019-091 & 092**

## CONCEPTUAL LANDSCAPE ELEVATION - ART WALL

SCALE: 1/4" = 1'0""

| REVISIONS | BY |
|---|---|
| 1 MAY 2024 | |
| 2 JUNE 2024 | |
| 3 MAR 2025 | |
| 4 APR 2025 | |
| 5 MAY 2025 | |

CRAIG WEBER & ASSOCIATES

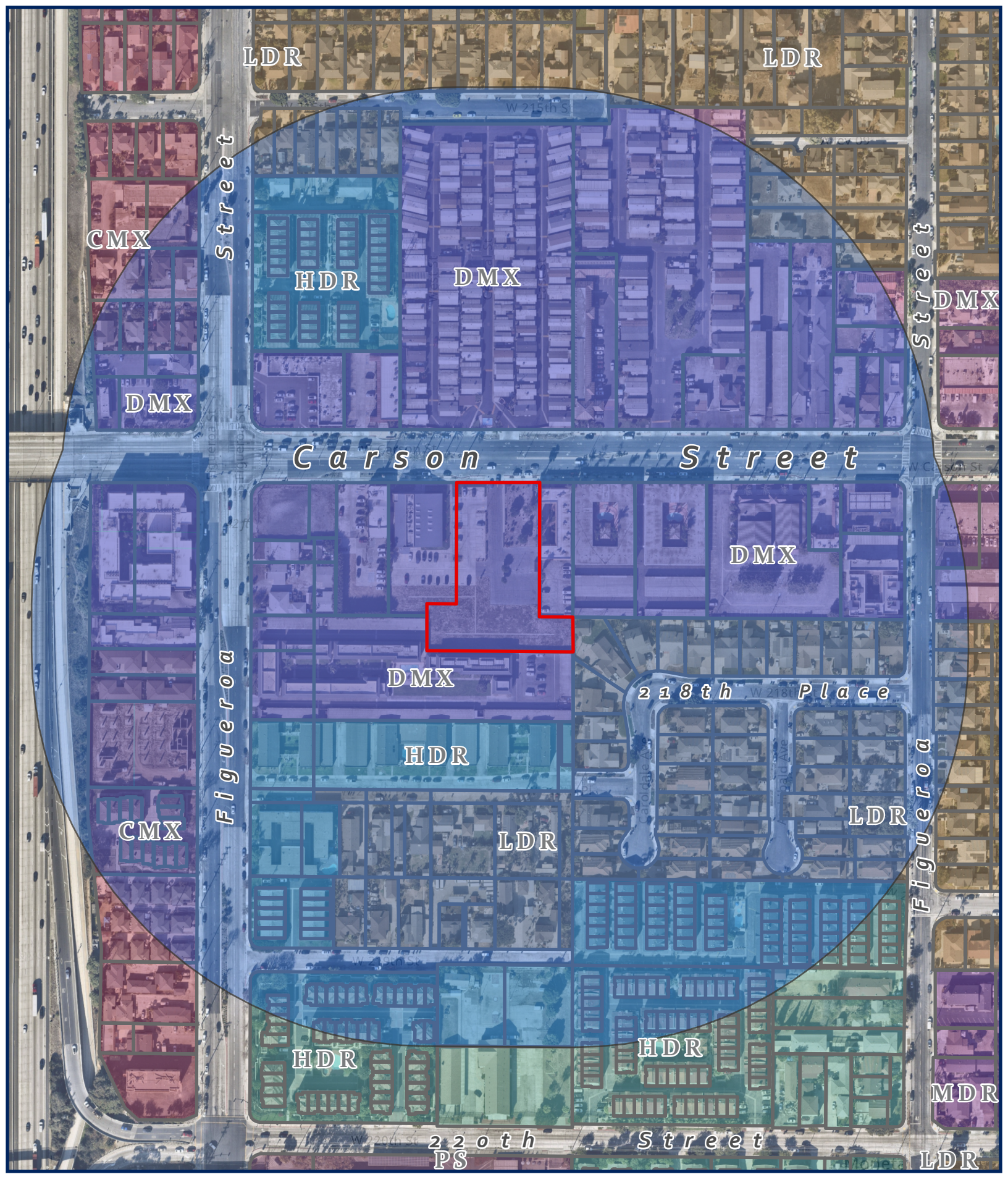
PLANS PREPARED FOR:
DON WILSON BUILDERS
2720 CHICAGO AVENUE, SUITE 200
CORONA DEL MAR, CA 92625

PREPARED BY:
CRAIG WEBER & ASSOCIATES
950 SANTA CRUZ WAY, LONG BEACH, CA 90804
PH/FAX 562.494.0411

REGISTERED LANDSCAPE ARCHITECT
CRAIG WEBER 3260
Signature
Exp. Date
STATE OF CALIFORNIA

PROJECT:
**APN: 7342-019-091 & 092**
DWB SOUTHLAND
438 W. CARSON STREET
CARSON, CA

| | |
|---|---|
| Date: | MARCH 2024 |
| Scale: | 1/4" = 1'0" |
| Drawn: | KGW |
| Job: | 1629 |
| Sheet: | L2 |




Radius Map: 750-foot radius

438 West Carson Street Tentative Tract Map 84347

# City of Carson

Author: John Hernandez
Published: 04/28/2025
File Path: Z:\GIS Projects - JHZ\Radius Maps\438 West Carson Street - Tentative Tract Map 84347\438 West Carson Street - Tentative Tract Map 84347

600 S. Lake Avenue
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Pasadena, CA 91106
**626.796.2322** T
www.llgengineers.com

Pasadena
Irvine
San Diego

**TRANSPORTATION ASSESSMENT**

# DWB SOUTHLAND PROJECT

**City of Carson, California**
**September 2, 2025**

*Prepared for:*

**Don Wilson Builders**
23705 Crenshaw Boulevard, Suite 200
Torrance, California 90505

LLG Ref: 1-24-4637-1

*Prepared by:*

Francesca S. Bravo
Senior Transportation Engineer

*Under the Supervision of:*

Alfred C. Ying, P.E., PTP
Senior Transportation Engineer

# TABLE OF CONTENTS


| SECTION | | | PAGE |
|---|---|---|---|
| **1.0** | **Introduction** | | **1** |
| | 1.1 | Transportation Assessment Overview | 1 |
| | 1.2 | Study Methodology | 1 |
| **2.0** | **Project Description** | | **4** |
| | 2.1 | Existing Project Site | 4 |
| | 2.2 | Proposed Project Description | 4 |
| | 2.3 | Project Site Access | 4 |
| | | 2.3.1 Vehicular Site Access | 4 |
| | | 2.3.2 Non-Vehicular Site Access | 4 |
| | 2.4 | Project Parking | 7 |
| | 2.5 | Project Trip Generation and Distribution | 7 |
| | | 2.5.1 Project Trip Generation Forecast | 7 |
| | | 2.5.2 Project Trip Distribution and Assignment | 7 |
| | 2.6 | Residential Gate Queuing Analysis | 9 |
| **3.0** | **Project Site Context** | | **14** |
| | 3.1 | Non-Vehicle Network | 14 |
| | | 3.1.1 Pedestrian System | 14 |
| | | 3.1.2 Bicycle System | 16 |
| | 3.2 | Transit Network | 18 |
| | 3.3 | Vehicle Network | 18 |
| | | 3.3.1 Roadway Classifications | 18 |
| | | 3.3.2 Roadway Descriptions | 18 |
| | | 3.3.3 Traffic Count Data | 23 |
| | 3.4 | Cumulative Development Projects | 23 |
| | | 3.4.1 Related Projects | 25 |
| | | 3.4.2 Ambient Traffic Growth Factor | 25 |
| **4.0** | **Intersection Operational Analysis** | | **29** |
| | 4.1 | Analysis Methodology | 29 |
| | 4.2 | Criteria for Intersection Operational Analysis | 30 |
| | 4.3 | Analysis Scenarios | 30 |
| | 4.4 | Existing Conditions | 31 |
| | | 4.4.1 Existing Conditions | 31 |
| | | 4.4.2 Existing With Project Conditions | 31 |
| | | 4.4.3 Existing With Ambient Growth and Project Conditions | 31 |
| | 4.5 | Future Year 2026 Cumulative Conditions | 31 |
| | | 4.5.1 Future Year 2026 Cumulative Without Project Conditions | 31 |
| | | 4.5.2 Future Year 2026 Cumulative With Project Conditions | 36 |
| | 4.6 | Access and Circulation Review | 36 |
| **5.0** | **Summary and Conclusions** | | **39** |

# TABLE OF CONTENTS *(continued)*

## APPENDICES


| APPENDIX | |
|---|---|
| A. | Scoping Document |
| B. | Traffic, Pedestrian, and Bicycle Count Data |
| C. | HCM and Levels of Service Explanation<br>HCM Data Worksheets – Weekday AM and PM Peak Hours |


## LIST OF TABLES


| SECTION—TABLE # | | PAGE |
|---|---|---|
| 2–1 | Project Trip Generation Forecast | 8 |
| 2-2 | Single-Channel Queuing Analysis | 12 |
| 3–1 | Existing Transit Routes | 19 |
| 3–2 | Existing Roadway Descriptions | 22 |
| 3–3 | Related Projects List and Trip Generation | 26 |
| 4–1 | Summary of Intersection Operational Analysis | 32 |
| 4–2 | Summary of Driveway Operational Analysis | 38 |

# TABLE OF CONTENTS *(continued)*

## LIST OF FIGURES


| SECTION—FIGURE # | | PAGE |
|---|---|---|
| 1–1 | Vicinity Map | 2 |
| 2–1 | Aerial Photograph of the Existing Project Site | 5 |
| 2–2 | Conceptual Site Plan | 6 |
| 2–3 | Project Trip Distribution | 10 |
| 2–4 | Project Traffic Volumes – Weekday AM and PM Peak Hour | 11 |
| 3–1 | Existing Nearby Pedestrian and Transit Facilities | 15 |
| 3–2 | City of Carson Proposed Bicycle Network | 17 |
| 3–3 | Existing Transit Routes | 20 |
| 3–4 | Existing Lane Configurations | 21 |
| 3–5 | Existing Traffic Volumes – Weekday AM and PM Peak Hour | 24 |
| 3–6 | Location of Related Projects | 27 |
| 3–7 | Related Projects Traffic Volumes – Weekday AM and PM Peak Hour | 28 |
| 4–1 | Existing With Project Traffic Volumes – Weekday AM and PM Peak Hour | 33 |
| 4-2 | Existing With Ambient Growth and Project Traffic Volumes | 34 |
| 4–3 | Future Year 2026 Without Project Traffic Volumes – Weekday AM and PM Peak Hour | 35 |
| 4–4 | Future Year 2026 With Project Traffic Volumes – Weekday AM and PM Peak Hour | 37 |

**TRANSPORTATION ASSESSMENT**

# DWB SOUTHLAND PROJECT

**City of Carson, California**
**September 2, 2025**

## 1.0 INTRODUCTION

### 1.1 Transportation Assessment Overview

This transportation assessment report has been prepared to identify and evaluate the potential effects on the transportation network resulting from the proposed DWB Southland project (the "Project") located in the City of Carson (the "City"). The project site is located at 438 West Carson Street situated along the south side of Carson Street between Figueroa Street and Moneta Avenue. The proposed project site and general vicinity are shown in ***Figure 1-1***.

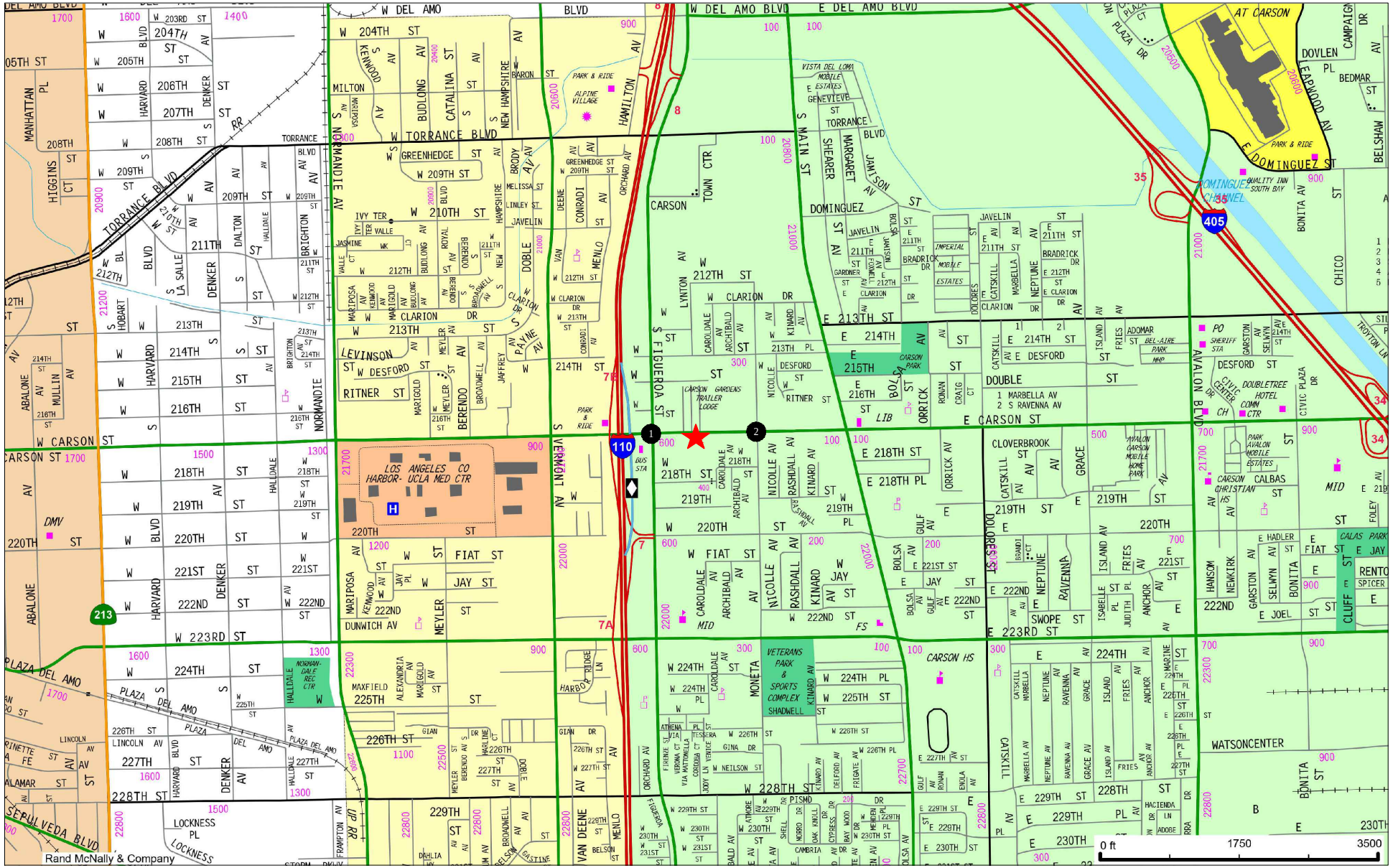
In compliance with the California Environmental Quality Act (CEQA) Sections 15064.3 and 15064.7, the City of Carson utilizes Vehicle Miles Traveled (VMT) for the purpose of analyzing transportation impacts under CEQA. In addition, the City maintains vehicle Level of Service (LOS) standards for local transportation infrastructure for purposes outside of CEQA. The City's requirements identify both CEQA based analysis requirements and non-CEQA based analysis requirements for analyzing the potential transportation impacts of proposed development projects.

Pursuant to the current statutory requirements of the CEQA Guidelines, the proposed project's transportation impacts are determined on the basis of VMT. The VMT assessment and impact conclusions are summarized separately in the "DWB Southland Project – Vehicle Miles Traveled Assessment," prepared by Linscott, Law and Greenspan, Engineers in October 2024.

This local transportation assessment evaluates potential project-related effects on intersection operations and LOS at two (2) key intersections in the vicinity of the project site. The study intersections were determined in consultation with City of Carson staff. This local transportation assessment also includes operational analysis at the site driveway. This report (i) presents the proposed project's existing transportation network context, (ii) presents existing traffic volumes, (iii) forecasts future cumulative baseline conditions, (iv) forecasts project-generated traffic, (v) assesses the potential for project-related effects on the existing transportation network consistent with the non-CEQA based metrics set forth as requested by City staff, and (vi) recommends transportation network improvement measures, where necessary.

### 1.2 Study Methodology

The local transportation analysis criteria for this assessment were identified in consultation with City of Carson staff. The analysis criteria were determined based on the City's requirements, the proposed project description and location, and the characteristics of the surrounding transportation system. City of Carson staff confirmed the appropriateness of the analysis criteria when it

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★ Project Site

(xx) Study Location

# Figure 1-1
# Vicinity Map

approved the scoping document. The approved scoping document is attached to this report in ***Appendix A***.

On September 27, 2013, Governor Brown signed Senate Bill (SB) 743 (Steinberg, 2013). Among other things, SB 743 created a process to change the methodology to analyze transportation impacts under CEQA (Public Resources Code Section 21000 and following) in order to promote 1) the reduction of greenhouse gas emissions, 2) the development of multimodal transportation networks, and 3) a diversity of land uses. On December 30, 2013, the State of California Governor's Office of Planning and Research (OPR) released a preliminary evaluation of alternative methods of transportation analysis, which included analysis based on project VMT rather than impacts to intersection LOS. OPR issued other draft discussion documents in March 2015 and January 2016, suggesting new revisions to the CEQA Guidelines. Concurrently, OPR developed the *Technical Advisory on Evaluating Transportation Impacts in CEQA*[1] *("Technical Advisory")*, which provides non-binding recommendations on the implementation of VMT methodology and which has significantly informed the way VMT analyses are conducted in the State. In November 2017, OPR submitted the proposed amendments to the CEQA Guidelines to the State's Natural Resources Agency (including the new Guidelines Section 15064.3 which governs how analyses of potential traffic impacts should be conducted). On January 26, 2018, the Natural Resources Agency published a Notice of Rulemaking, commencing the formal rulemaking process for the amendments to the CEQA Guidelines. On December 28, 2018, the California Office of Administrative Law adopted the proposed amendments, formally implementing the use of VMT as the metric for transportation analysis under CEQA. State-wide implementation of the new metric was required by July 1, 2020. The proposed project's CEQA-compliant VMT impact analysis is presented separately in the "DWB Southland Project – Vehicle Miles Traveled Assessment," prepared by Linscott, Law and Greenspan, Engineers in October 2024.

The passage of SB 743 and the resulting amendment to the CEQA Guidelines does not prevent agencies from continuing to analyze delay or LOS outside of CEQA review for other transportation planning or analysis purposes (i.e., general plans, impact fee programs, corridor studies, congestion reduction, or ongoing network monitoring). These analysis requirements and LOS standards apply to discretionary approvals of new land use development projects. This assessment utilizes the latest version of the City-approved Highway Capacity Manual (HCM) methodology to evaluate intersection LOS, which is then compared to the City's LOS standards and reviewed for detrimental effects on circulation within the existing transportation network. In conjunction with City staff, a total of three (3) study locations (including the project driveway) were selected for analysis. The City's requirements also require an analysis of a proposed project's effect on existing pedestrian, bicycle, and transit infrastructure in the vicinity of the project site as well as the provision of multi-modal facilities within the site itself.

[1] *Technical Advisory on Evaluating Transportation Impacts in CEQA*, Governor's Office of Planning and Research, December 2018.

# 2.0 PROJECT DESCRIPTION

## 2.1 Existing Project Site

The project site is located at 438 West Carson Street in the City of Carson. The project site is situated along the south side of Carson Street between Figueroa Street and Moneta Avenue. The site is bordered by Carson Street to the north, residential and commercial uses to the south, and commercial uses to the east and west. The project site is currently occupied by a surface parking lot utilized by the adjacent Southland Credit Union business. The existing surface parking lot will be removed to accommodate the proposed project. The project vicinity is shown in *Figure 1-1*.

Vehicular access to the existing project site is currently provided via one driveway on Carson Street. The existing driveway is located on the south side of Carson Street along the northerly project frontage and currently accommodates full access (i.e., (i.e., left-turn and right-turn ingress and egress traffic movements). An aerial photograph of the existing site is presented in ***Figure 2-1***.

## 2.2 Proposed Project Description

The proposed project consists of the construction of 51 residential dwelling units. The proposed unit mix consists of 15 one-bedroom units and 36 two-bedroom units. The project will provide common amenities such as a playground area, fitness center, lounge, roof top deck, and open space. Vehicular access for the project is planned to be provided via the existing driveway on Carson Street that will be shared with the existing Southland Credit Union business. The project build-out and occupancy year is anticipated by the year 2026. The site plan for the proposed project is illustrated in ***Figure 2-2***.

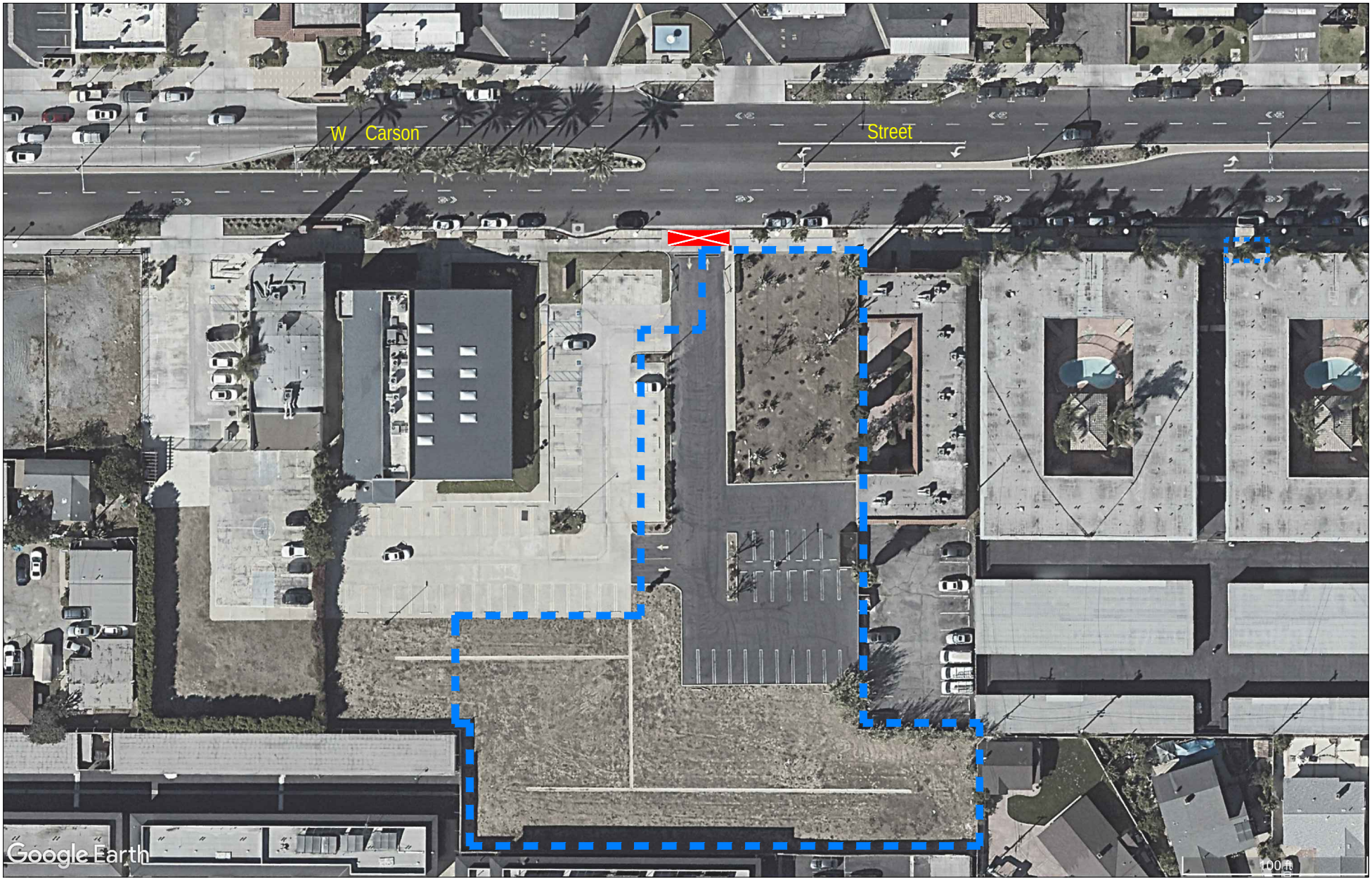
## 2.3 Project Site Access

### 2.3.1 *Vehicular Site Access*

As shown in *Figure 2*-2, vehicular access to the proposed project site is planned to be provided via the existing driveway located on the south side of Carson Street, along the northerly project frontage. The project driveway will continue to accommodate full access (i.e., left-turn and right-turn ingress and egress traffic movements). The westbound left-turn movement into the site from Carson Street will be facilitated by the existing westbound left-turn lane/pocket and median break at this location.

### 2.3.2 *Non-Vehicular Site Access*

Pedestrian access to the project site will be accommodated via the existing public sidewalks and pedestrian facilities provided along Carson Street, Main Street, Figueroa Street. Pedestrian access within the project site will be accommodated by Americans with Disabilities Act (ADA) compliant walkways that will connect the building entrances to the public right-of-way. The walkways will provide exclusive pedestrian and bicycle access from the public sidewalk to the proposed project, thus minimizing the extent of pedestrian and bicycle interaction with vehicles at the site and providing a comfortable, convenient, and safe environment for pedestrians and bicyclists to access




MAP SOURCE: GOOGLE EARTH PRO

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Project Site

Existing Driveway

Figure 2-1
Aerial Photograph of Existing Project Site



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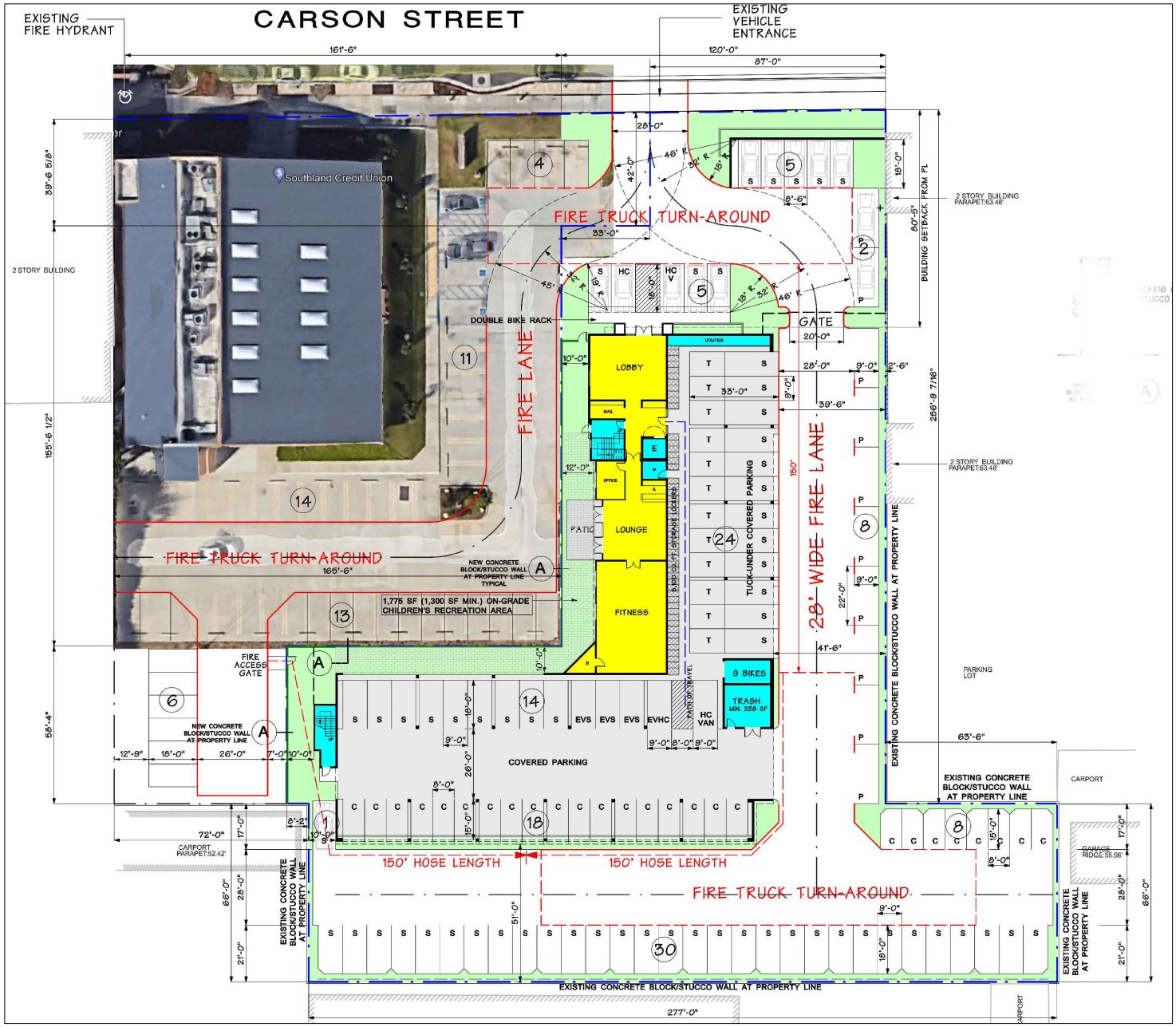


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Figure 2-2
Site Plan

the proposed project from the public right-of-way. Pedestrian pathways will also be constructed surrounding the proposed buildings.

## 2.4 Project Parking

The proposed project is planned to provide a total of 115 vehicular parking spaces, consisting of 26 compact spaces, 63 standard guest parking spaces, 12 tandem spaces, 10 parallel spaces, and four handicap accessible spaces. In addition, nine bicycle spaces are planned to be provided for the project.

## 2.5 Project Trip Generation and Distribution

### 2.5.1 *Project Trip Generation Forecast*

Traffic volumes to be generated by the proposed project were forecast for the weekday AM and PM peak hours, and over a 24-hour period. Trip generation rates provided in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*[2] were utilized to forecast project traffic generation for the proposed project. ITE Land Use Code 220 (Multi-Family Housing [Low-Rise]) trip generation rates were used to forecast the traffic volumes expected to be generated by the proposed residential units.

The trip generation forecast for the proposed project is summarized in ***Table 2-1***. As presented in *Table 2-1*, the proposed project is expected to generate 20 vehicle trips (5 inbound trips and 15 outbound trips) during the weekday AM peak hour. During the weekday PM peak hour, the proposed project is expected to generate 26 vehicle trips (16 inbound trips and 10 outbound trips). Over a 24-hour period, the proposed project is forecast to generate 344 daily trip ends during a typical weekday (172 inbound trips and 172 outbound trips).

### 2.5.2 *Project Trip Distribution and Assignment*

Project traffic volumes both entering and exiting the site have been distributed and assigned to the adjacent street system based on the following considerations:

- The site's proximity to major traffic corridors (i.e., Carson Street, Main Street, Figueroa Street, etc.);
- Expected localized traffic flow patterns based on adjacent roadway channelization and presence of traffic signals;
- Existing intersection traffic volumes;
- Ingress/egress scheme planned for the proposed project;
- Nearby population and employment centers; and
- Input from City of Carson staff.

[2] Institute of Transportation Engineers *Trip Generation Manual*, 11th Edition, Washington, D.C., 2021.

**Table 2-1**
**PROJECT TRIP GENERATION FORECAST**

| TRIP GENERATION RATES [1] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | ITE | | | WEEKDAY AM PEAK HOUR | | | WEEKDAY PM PEAK HOUR | | |
| ITE LAND USE CATEGORY | LAND USE CODE | VARIABLE | WEEKDAY DAILY | IN (%) | OUT (%) | TOTAL | IN (%) | OUT (%) | TOTAL |
| Multifamily Housing (Low Rise) Not Close to Rail Transit | 220 | Per Dwelling Unit | 6.74 | 24% | 76% | 0.40 | 63% | 37% | 0.51 |

| PROJECT TRIP GENERATION FORECAST | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | ITE | | DAILY | AM PEAK HOUR VOLUMES [2] | | | PM PEAK HOUR VOLUMES [2] | | |
| LAND USE | LAND USE CODE | SIZE | TRIP ENDS [2] VOLUMES | IN | OUT | TOTAL | IN | OUT | TOTAL |
| ***Proposed Project*** | | | | | | | | | |
| Condominiums | 220 | 51 DU | 344 | 5 | 15 | 20 | 16 | 10 | 26 |
| ***TOTAL PROJECT TRIPS*** | | | ***344*** | ***5*** | ***15*** | ***20*** | ***16*** | ***10*** | ***26*** |

[1] Source: ITE "Trip Generation Manual", 11th Edition, 2021.
[2] Trips are one-way traffic movements, entering or leaving.

The traffic volume distribution percentages for the proposed project during AM and PM peak hours at the study intersections are illustrated in ***Figure 2-3***. The forecast AM and PM peak hour project traffic volumes at the study intersections are displayed in ***Figure 2-4***. The traffic volume assignments presented in *Figure 2-4* reflect the traffic distribution characteristics shown in *Figure 2-3* and the proposed project traffic generation forecast presented in *Table 2-1*.

## 2.6 Residential Gate Queuing Analysis

A review of the expected maximum vehicle queue length was conducted to determine the adequacy of the proposed vehicle queuing area in front of the gate. The queuing analysis utilizes a probabilistic model to represent the dynamic (i.e., stochastic) characteristics of a queuing system. The probability model is dependent on arrival pattern characteristics such as the average arrival rate and statistical distribution of time between arrivals, service facility characteristics such as average service rates and the number of vehicles that can be served at a time, and queue discipline characteristics such as the way the next vehicle to be served is selected. These system parameters can be summarized in the following four inputs:

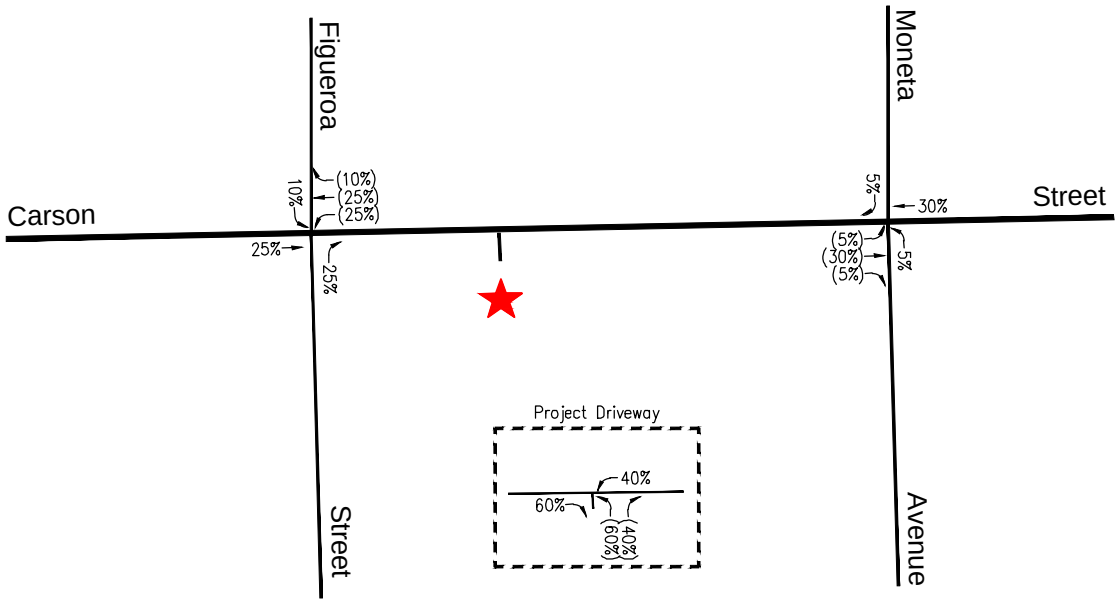
1. The average vehicle arrival rate, expressed in vehicles per hour;
2. The average service rate, also expressed as vehicles per hour;
3. The number of service channels or lanes; and,
4. The order in which arriving vehicles will be served.

This analysis assumes the vehicle queue will be served by one service channel, the residential gate, and that the queue will be served in the order of first in, first out (FIFO). Further discussion of the remaining project-specific queuing parameters is provided below.

The average vehicle arrival rate was based on the forecast peak hourly demand for the proposed project in order to provide a conservative (i.e., worst-case) assessment of potential queueing. As stated previously, the forecast peak hourly demand is expected to occur during the weekday PM peak hour, when 16 inbound vehicle trips are forecast. Therefore, the average vehicle arrival rate utilized in the queuing assessment is 16 vehicles per hour. These vehicles are assumed to arrive at random times throughout the hour.

The average service rate was based on the operating parameters of the gate provided by the project applicant. The gate is expected to take 15-18 seconds to open after the fob/remote has been pressed. The vehicles are estimated to move through the gate within 10 seconds. It is therefore assumed that vehicles will be able to enter and cross the gate approximately every 46 seconds (i.e., 18 seconds to open the gate plus 10 seconds to cross the gate and another 18 seconds to close gate), which corresponds to a service rate of approximately 78 vehicles per hour (i.e., 3,600 sec/hr / 46 sec/veh = 78 veh/hr).

The queuing analysis based on the above parameters is presented in ***Table 2-2***. The probability that a given number of vehicles will be in queue is first calculated, beginning with no vehicles and increasing in increments of one vehicle. The probability that the queue will be equal to or less than a given number of vehicles is determined by summing the probability of each discrete queue length

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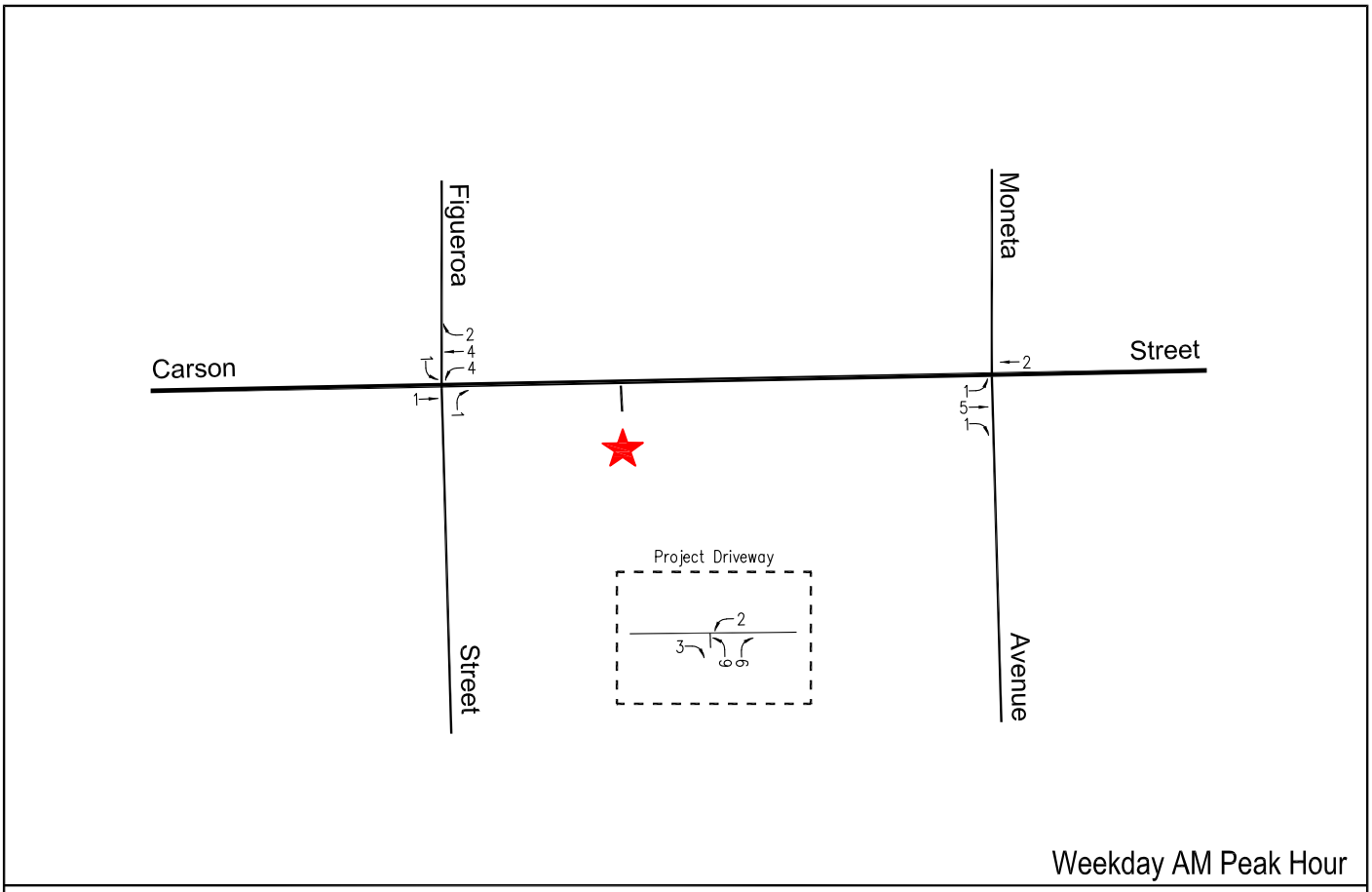
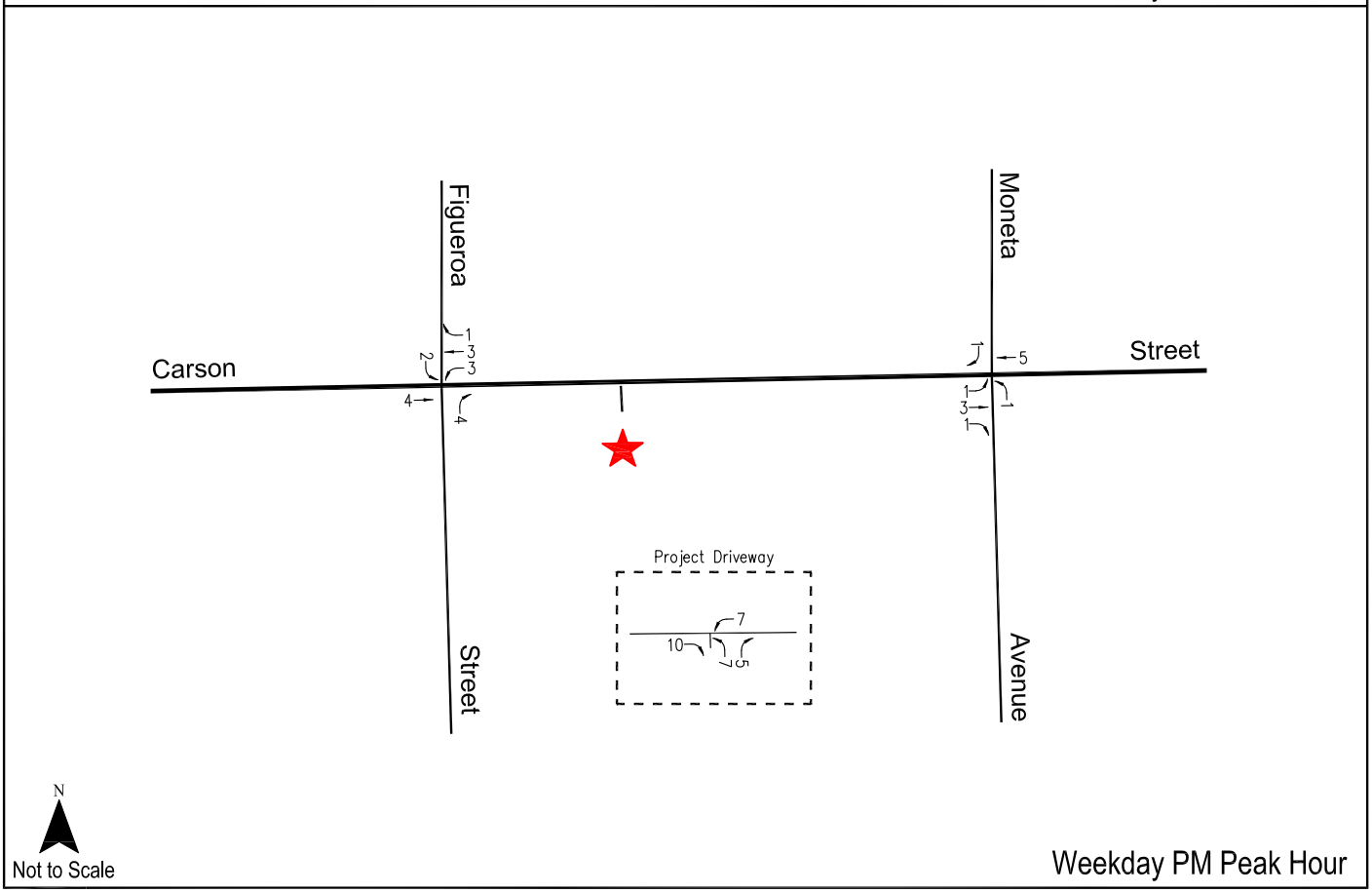
Project Site

XX = Inbound Percentage

(XX) = Outbound Percentage

Figure 2-3
Project Trip Distribution

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Project Site

Figure 2-4
Project Traffic Volumes

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DWB Southland Project

**Table 2-2**
**SINGLE-CHANNEL QUEUING ANALYSIS [1]**

The queue length for a drive-through land use with a single channel (i.e., a single drive-through service lane) may be estimated using the equations below, which are based on the average vehicle arrival rate (λ, lambda) and the average service rate (μ, mu). The average vehicle arrival rate represents the average number of vehicle arriving per hour (peak hour arrivals are typically utilized). The average service rate is the average amount of time required to complete a transaction at the point of service (typically expressed in seconds or minutes per transaction and converted to transactions per hour). The utilization factor (ρ, rho) is the ratio of the vehicle arrival rate and the service rate (i.e., λ/μ), and represents the utilization of the single channel.

$$P_0 = 1 - \rho \qquad P_n = \rho^n(1-\rho) \qquad P_{n\leq x} = \sum_{n=0}^{n=x} P_n$$

| | | |
|---|---|---|
| Peak Inbound Volume = | 16 | vehicles per hour |
| Percent Utilizing Service Lane/s = | 100 | percent |
| Average Vehicle Arrival Rate (λ) = | 16 | vehicles per hour |
| Average Service Time per Vehicle = | 46 | seconds |
| Average Service Rate (μ) = | 78 | vehicles per hour |
| Utilization Factor (ρ) = | 0.20 | |

| VEHICLES IN QUEUE (*n*) | PROBABILITY P(*n*) | SUM OF PROBABILITY P(*x*≤*n*) |
|---|---|---|
| 0 | 79.56% | 79.56% |
| 1 | 16.26% | 95.82% |
| 2 | 3.33% | 99.15% |
| 3 | 0.68% | 99.83% |
| 4 | 0.14% | 99.96% |
| 5 | 0.03% | 99.99% |
| 6 | 0.01% | 100.00% |
| 7 | 0.00% | 100.00% |
| 8 | 0.00% | 100.00% |
| 9 | 0.00% | 100.00% |
| 10 | 0.00% | 100.00% |
| 11 | 0.00% | 100.00% |
| 12 | 0.00% | 100.00% |
| 13 | 0.00% | 100.00% |
| 14 | 0.00% | 100.00% |
| 15 | 0.00% | 100.00% |
| 16 | 0.00% | 100.00% |
| 17 | 0.00% | 100.00% |
| 18 | 0.00% | 100.00% |
| 19 | 0.00% | 100.00% |
| 20 | 0.00% | 100.00% |
| 21 | 0.00% | 100.00% |
| 22 | 0.00% | 100.00% |
| 23 | 0.00% | 100.00% |
| 24 | 0.00% | 100.00% |
| 25 | 0.00% | 100.00% |
| 26 | 0.00% | 100.00% |
| 27 | 0.00% | 100.00% |
| 28 | 0.00% | 100.00% |
| 29 | 0.00% | 100.00% |
| 30 | 0.00% | 100.00% |
| AVERAGE QUEUE (P ≥ 50%) | | #N/A vehicles |
| 85TH PERCENTILE QUEUE (P ≥ 85%) | | 1 vehicles |
| 95TH PERCENTILE QUEUE (P ≥ 95%) | | 1 vehicles |
| MAXIMUM QUEUE (P = 100%) | | 6 vehicles |

up to the given number. As shown in *Table 2-2*, the average queue (50% probability) is expected to be one (1) vehicle or less. The 85th percentile queue, representing the vehicle queue with 85% probability, is expected to be 1 vehicle or less. The 95th percentile queue, representing the maximum vehicle queue with 95% probability, is expected to be 1 vehicle or less. It is important to note that this does not indicate a 95% probability that the queue will be exactly 1 vehicle; the calculated probability of the queue being exactly 1 vehicle is 0.91% as shown in *Table 2-2*. Instead, the 95th percentile queue represents a 95% confidence level that the queue will not exceed 1 vehicle.

The 85th percentile queue is a common design standard used in the traffic engineering profession, while the 95th percentile queue is considered a conservative (i.e., worst-case) assessment typically used to ensure the queue has minimal potential to back into the public right-of-way or interfere with other circulating vehicles on-site. The forecast 85th percentile queue of 1 vehicle corresponds to a queue length of approximately 22 feet. As mentioned above, the proposed project is planned to provide a total of 110 feet of queue storage space. Therefore, the planned queue storage area is expected to adequately accommodate the 85th percentile vehicle queue.

Although the 95th percentile queue is not anticipated to occur frequently, an assessment of the required storage area has been provided to determine if the maximum vehicle queue has the potential to interfere with the circulation of other vehicles accessing the project site. The forecast 95th percentile queue of 1 vehicle corresponds to a queue length of 22 feet, which is less than the planned queue storage area by 110 feet. Therefore, the planned queue storage area is expected to adequately accommodate the 95th percentile vehicle queue. As such, vehicle queue extending to Carson Street is not expected.

# 3.0 PROJECT SITE CONTEXT

The following sections provide an overview of the transportation infrastructure in the vicinity of the proposed project, including infrastructure which supports both motorized and non-motorized transportation modes.

## 3.1 Non-Vehicle Network

Non-vehicular transportation generally encompasses walking, biking, and other active transportation modes. Distinct facilities are often provided for these non-vehicular modes. Most prominently, paved sidewalks are typically provided to facilitate pedestrian travel outside of the roadway. In some cases, bicycle facilities such as painted bike lanes or separated bike paths are provided within the roadway in order to separate bike traffic from vehicular traffic. Roadways which are designed to prioritize non-vehicular transportation modes utilize complimentary non-vehicular infrastructure in order to promote comfortable, safe travel for both pedestrians and bicyclists. A review of the pedestrian and bicycle infrastructure provided in the vicinity of the project site is provided below.

### 3.1.1 *Pedestrian System*

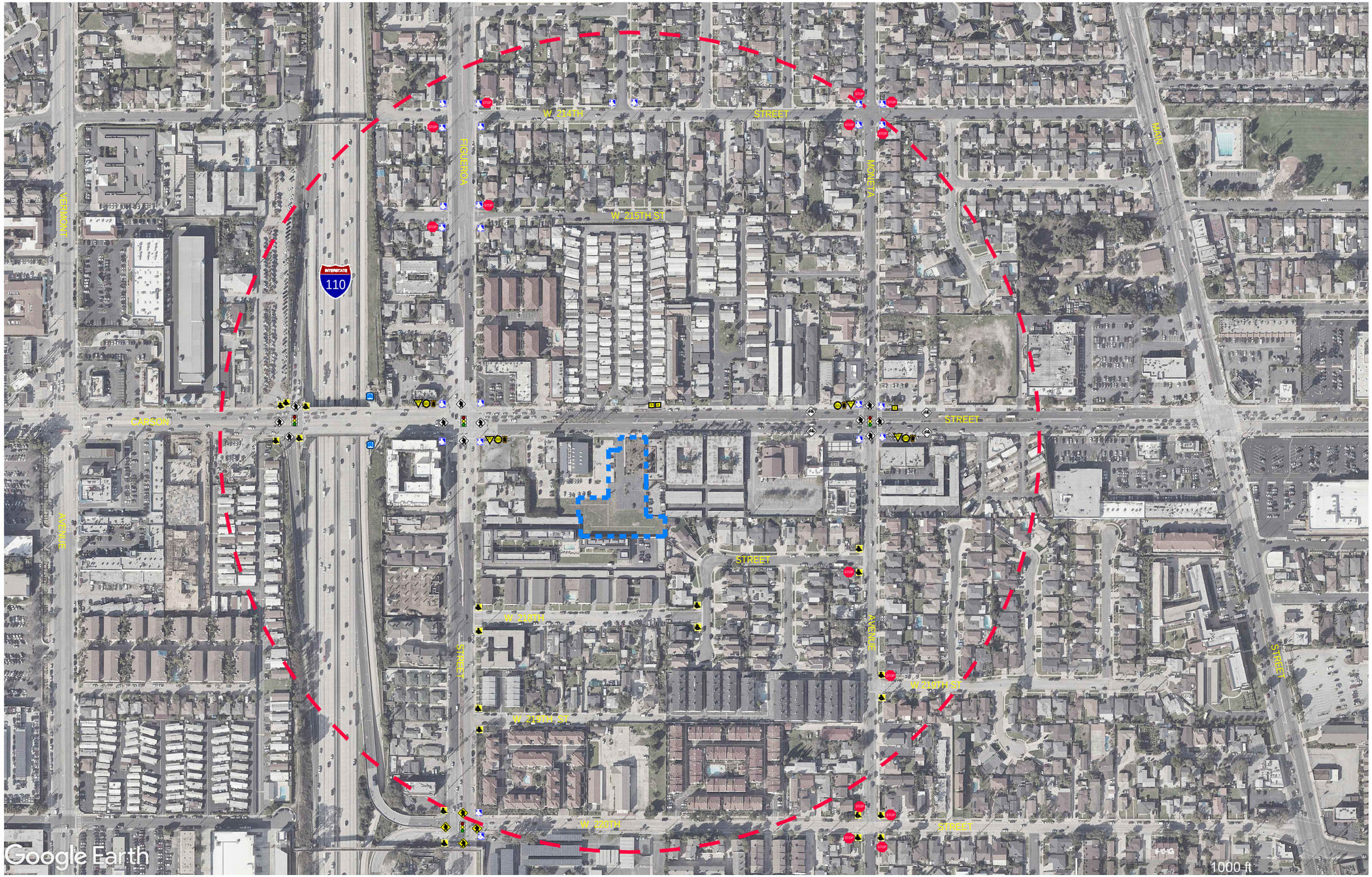
Pedestrian infrastructure consists of facilities such as sidewalks, crosswalks, pedestrian signals, curb access ramps, Americans with Disabilities Act (ADA) compliant tactile warning strips, and curb extensions, among other things. These facilities are generally provided within the study area. Public sidewalks and pedestrian facilities are provided on all streets within the project vicinity, including Carson Street, Figueroa Street, and Moneta Avenue. ***Figure 3-1*** shows the existing pedestrian and transit facilities near the project site.

The project frontage along Carson Street is currently improved with sidewalk, landscaping strips along the north and south sides of the sidewalk, curb, and gutter. As described in *Section 2.3, Project Site Access*, the proposed project will utilize the existing driveway on Carson Street and will maintain public sidewalk access across the driveway opening. The proposed project therefore will not result in the removal, degradation, or loss of access to any existing pedestrian facilities in the vicinity. Additionally, the project will provide an ADA compliant pedestrian walkway connecting the existing public sidewalks surrounding the project site to the walkways within the proposed development.

Walkability indicates walking is readily available as a safe, connected, accessible and pleasant mode of transport. Several criteria are widely accepted as key aspects of walkability of urban areas that should be satisfied. The underlying principle is that pedestrians should not be delayed, diverted, or placed in danger. These criteria include:

- Connectivity: People can walk from one place to another without encountering major obstacles, obstructions, or loss of connectivity.

- Convivial: Pedestrian routes are friendly and attractive, and perceived as such by pedestrians.




SITE

0.25 MILE RADIUS FROM PROJECT SITE

SIGNAL

ADA

STOP STOP SIGN

ADA YELLOW TRUNCATED DOME

CROSSWALK

CROSSWALK YELLOW

B BENCH

BR BIKE RACK

BS BUS STOP

BB BUS STOP WITH BUS BENCH

BBS BUS STOP WITH BUS BENCH & SHELTER

BIKE ROUTE/LANE

METRO BUS STATION

TRASH

LLG

Figure 3-1
Existing Nearby Pedestrian & Transit Facilities

DWB Southland Project



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- Conspicuous: Suitable levels of lighting, visibility and surveillance over its entire length, with high quality delineation and signage.

- Comfortable: High quality and well-maintained footpaths of suitable widths, attractive landscaping and architecture, shelter and rest spaces, and a suitable allocation of roadspace to pedestrians.

- Convenient: Walking is a realistic travel choice, partly because of the impact of the other criteria set forth above, but also because walking routes are of a suitable length as a result of land use planning with minimal delays.

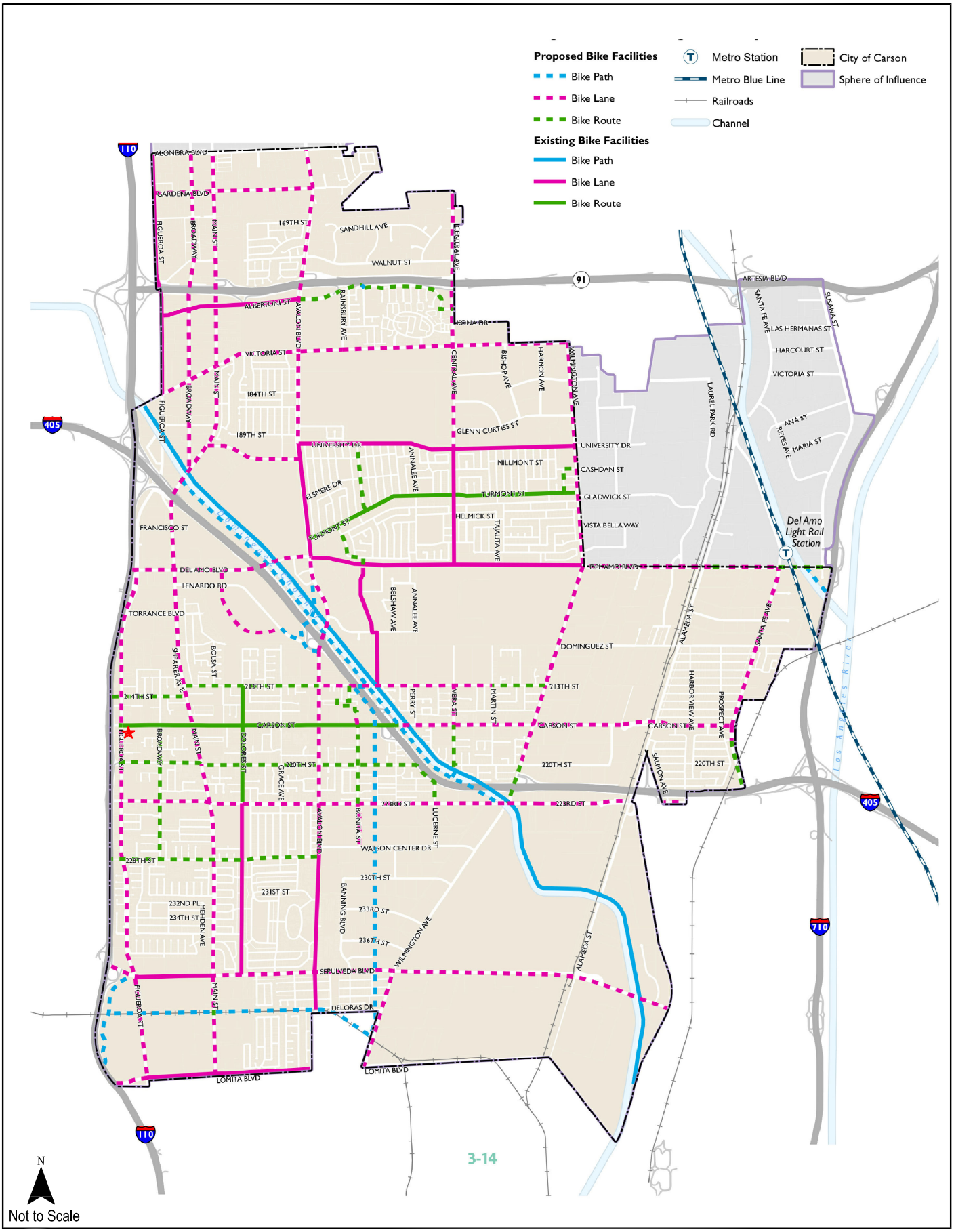
A review of the proposed project pedestrian walkways indicates that these primary characteristics are accommodated within and adjacent to the project. Proposed project features would include landscaped and lighted pedestrian walkways connecting facilities within the site, as well as connections with the adjacent public sidewalks along the project frontage. Street trees and streetscape plantings should be introduced along the same public frontages in accordance with the City's standards. In addition, project signage could include general ground level and wayfinding pedestrian signage around the perimeter of the project site, building identification signs, and other sign types. Wayfinding signs would be located at access points to the on-site amenities and facilities, parking area/s, and building entrances.

### 3.1.2 *Bicycle System*

Bicycle infrastructure consists of both facilities within the roadway as well as public bicycle parking spaces. The Federal and State transportation systems recognize three primary bikeway facilities: Bicycle Paths (Class I), Bicycle Lanes (Class II), and Bicycle Routes (Class III). Bicycle Paths (Class I) are exclusive car-free facilities that are typically not located within a roadway area. Bicycle Lanes (Class II) are part of the street design that is dedicated only for bicycles and identified by a striped lane separating vehicle lanes from bicycle lanes. Bicycle Routes (Class III) are preferably located on collector and lower volume arterial streets.

Bicycle access to the project site will be facilitated by the City's bicycle roadway network. Existing and proposed bicycle facilities (e.g., Class I Bicycle Path, Class II Bicycle Lanes, Class III Bicycle Routes, Proposed Bicycle Routes, Bicycle Boulevards, etc.) identified in the City's General Plan Update[3] are located within an approximate one-mile radius from the project site. The location of the proposed bicycle lane network for the City in close proximity to the project site and in the surrounding area is illustrated in ***Figure 3-2***. As shown in *Figure 3-2*, an existing Class III Bicycle Route is provided along Carson Street within the project vicinity. In addition, as shown in *Figure 3-2*, a Class II Bicycle Lane is proposed for Main Street and Figueroa Street and a Class III Bicycle Route is proposed for Broadway within the project vicinity.

[3] City of Carson 2040 General Plan Update, September 2022.




MAP SOURCE: CITY OF CARSON 2040 GENERAL PLAN UPDATE DRAFT, SEPTEMBER 2022

★ Project Site

Figure 3-2
City of Carson Proposed Bicycle Network

DWB Southland Project



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## 3.2 Transit Network

Public bus transit service in the project vicinity is currently provided by the Los Angeles Metropolitan Transportation Authority (Metro), Long Beach Transit (LBT), and Torrance Transit (TT). A summary of the existing transit routes, including the transit route, destinations and number of buses during the AM and PM peak hours is presented in ***Table 3–1***. The existing public transit routes in the project vicinity are illustrated in ***Figure 3–3***. As summarized in *Table 3-1*, a total of three public transit routes provide service near the project site.

## 3.3 Vehicle Network

### 3.3.1 *Roadway Classifications*

The City of Carson utilizes the roadway categories recognized by regional, state and federal transportation agencies. There are four (4) categories in the roadway hierarchy, ranging from freeways with the highest capacity to two-lane undivided roadways with the lowest capacity. The roadway categories are summarized as follows:

- *Freeways* are limited-access and high speed travel ways included in the state and federal highway systems. Their purpose is to carry regional through-traffic. Access is provided by interchanges with typical spacing of one mile or greater. No local access is provided to adjacent land uses.

- *Arterial* roadways are major streets that primarily accommodate regional, subregional, and intra-city travel. Through traffic comprises the bulk of traffic volumes on arterial roadways. In the City of Carson, this roadway type is divided into two categories: Major and Minor arterials. Major arterial roadways are designed to move relatively high volumes of traffic between the freeway and local circulation system. Intersections along major arterials are at-grade and typically signalized. Access from private property and collector streets is limited, as is on-street parking. Minor arterial roadways are similar to major arterials, but serve a more localized function. Minor arterials generally have less access and parking restrictions and a narrower right-of-way than major arterials.

- *Collector* roadways are designed to distribute traffic from higher classified arterial streets to local access streets and adjacent properties.

- *Local* roadways are designed to be low-volume and low-speed streets that provide access to individual properties. Residential streets are generally not intended to handle through traffic.

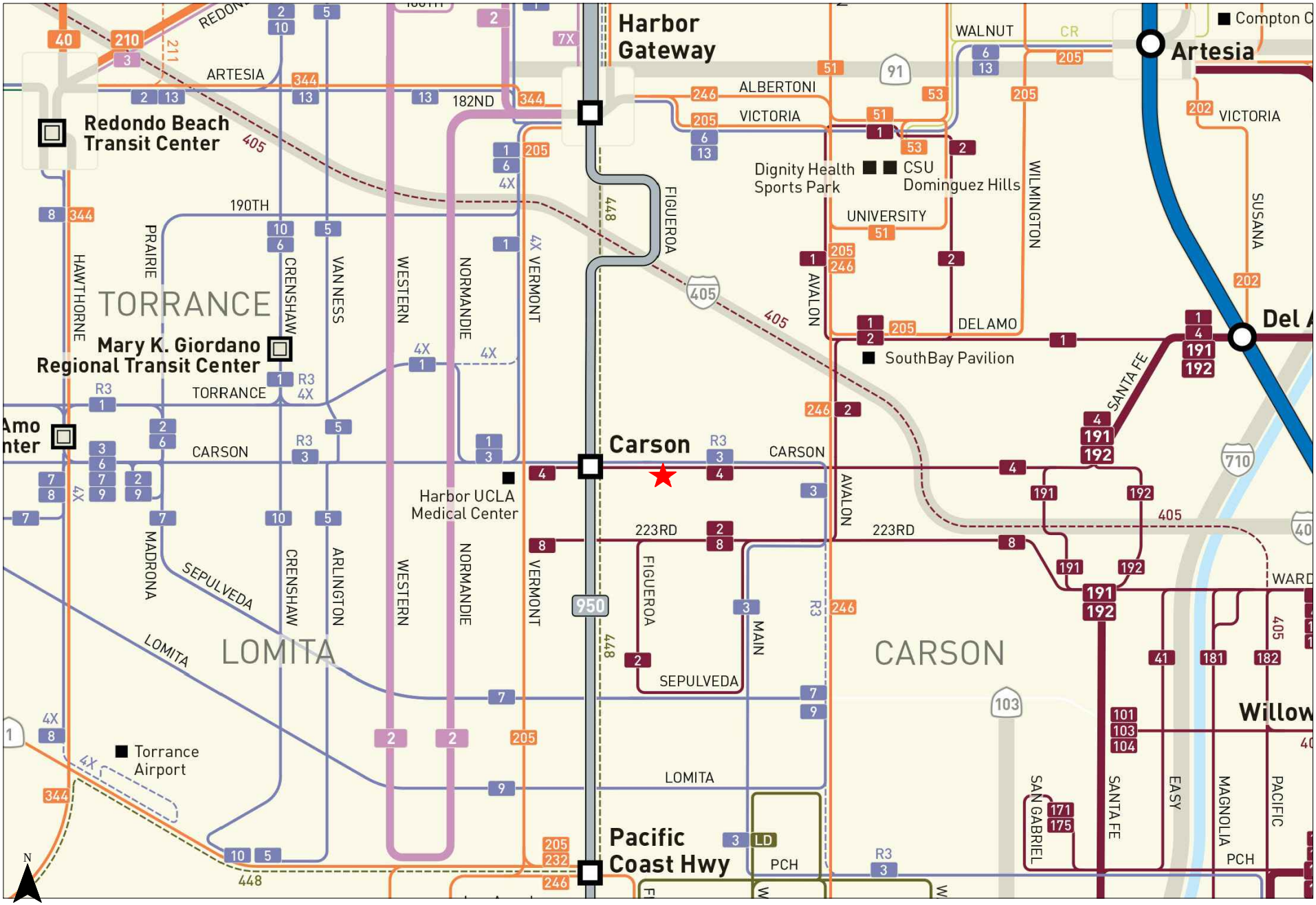
### 3.3.2 *Roadway Descriptions*

Immediate access to the project site is provided via Carson Street. The current lane configurations and traffic control measures at each study intersection is presented in ***Figure 3-4***. Descriptions of the roadways which make up the study area are provided in ***Table 3-2***, including the roadway classification, number of lanes, median types, and speed limits designated by the City of Carson.

**Table 3-1**
**EXISTING TRANSIT ROUTES [1]**

| ROUTE | DESTINATIONS | ROADWAY(S) NEAR SITE | NO. OF BUSES/TRAINS DURING PEAK HOUR | | |
|---|---|---|---|---|---|
| | | | DIR | AM | PM |
| Metro Silver Line | El Monte to San Pedro via Downtown Los Angeles, Los Angeles and Harbor Gateway | Carson Street, I-110 Freeway Transit Center, Figueroa Street | NB<br>SB | 12<br>12 | 12<br>12 |
| LBT 4 | Carson at Vermont to Del Amo Station | Carson Street, Moneta Avenue, Figueroa Street | EB<br>WB | 2<br>2 | 2<br>2 |
| TT 3 | Redondo Beach Pier to Downtown Long Beach Station via Carson | Carson Street, Moneta Avenue, Figueroa Street | EB<br>WB | 2<br>3 | 3<br>2 |
| **TOTAL** | | | | 33 | 33 |

[1] Sources: Los Angeles County Metropolitan Transportation Authority (Metro), Long Beach Transit (LBT), and Torrance Transit (TT) websites, August 2024.

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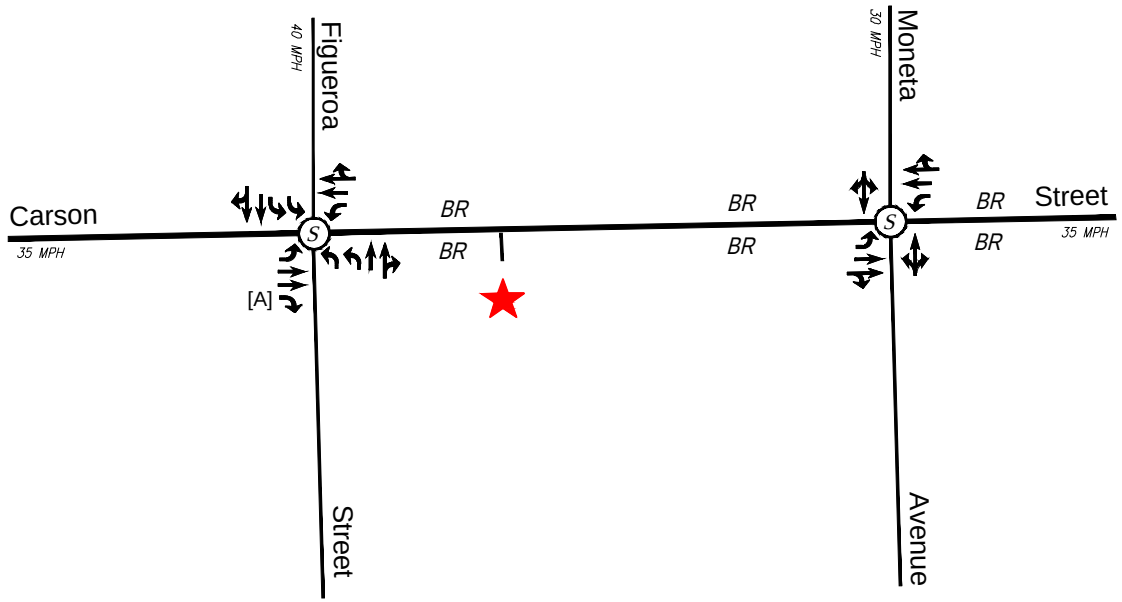
★ Project Site

Figure 3-3
Existing Transit Routes

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Project Site

S Signalized

[A] Overlap Phase

*BR* Bike Route

Figure 3-4
Existing Lane Configurations



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**Table 3-2**
**EXISTING ROADWAY DESCRIPTIONS**

| ROADWAY | CLASSIFICATION [1] | TRAVEL LANES | | MEDIAN TYPES [4] | SPEED LIMIT |
|---|---|---|---|---|---|
| | | DIRECTION [2] | NO. LANES [3] | | |
| Figueroa Street | Major Highway | NB-SB | 4 | RMI | 40 |
| Carson Street | Major Highway | EB-WB | 4 [5] | RMI | 35 |
| Moneta Avenue | Local | NB-SB | 2 | N/A | 30 |

Notes:
[1] Street classifications obtained from the *City of Carson* Circulation Element 2022 .
[2] Direction of roadways in the project area: NB-SB = northbound and southbound; and EB-WB = eastbound and westbound.
[3] Number of lanes in both directions on the roadway. Variations in number of travel lanes due to time restricted on-street parallel parking are noted below.
[4] Median type of the road: RMI = Raised Median Island; 2WLT = 2-Way Left-Turn Lane; and N/A = Not Applicable.
[5] Class III Bike Route

### 3.3.3 *Traffic Count Data*

A total of three (3) study locations (including the project driveway) were selected for analysis:

1. Figueroa Street/Carson Street (Signalized)
2. Moneta Avenue/Carson Street (Signalized)
3. Project Driveway/Carson Street (Unsignalized)

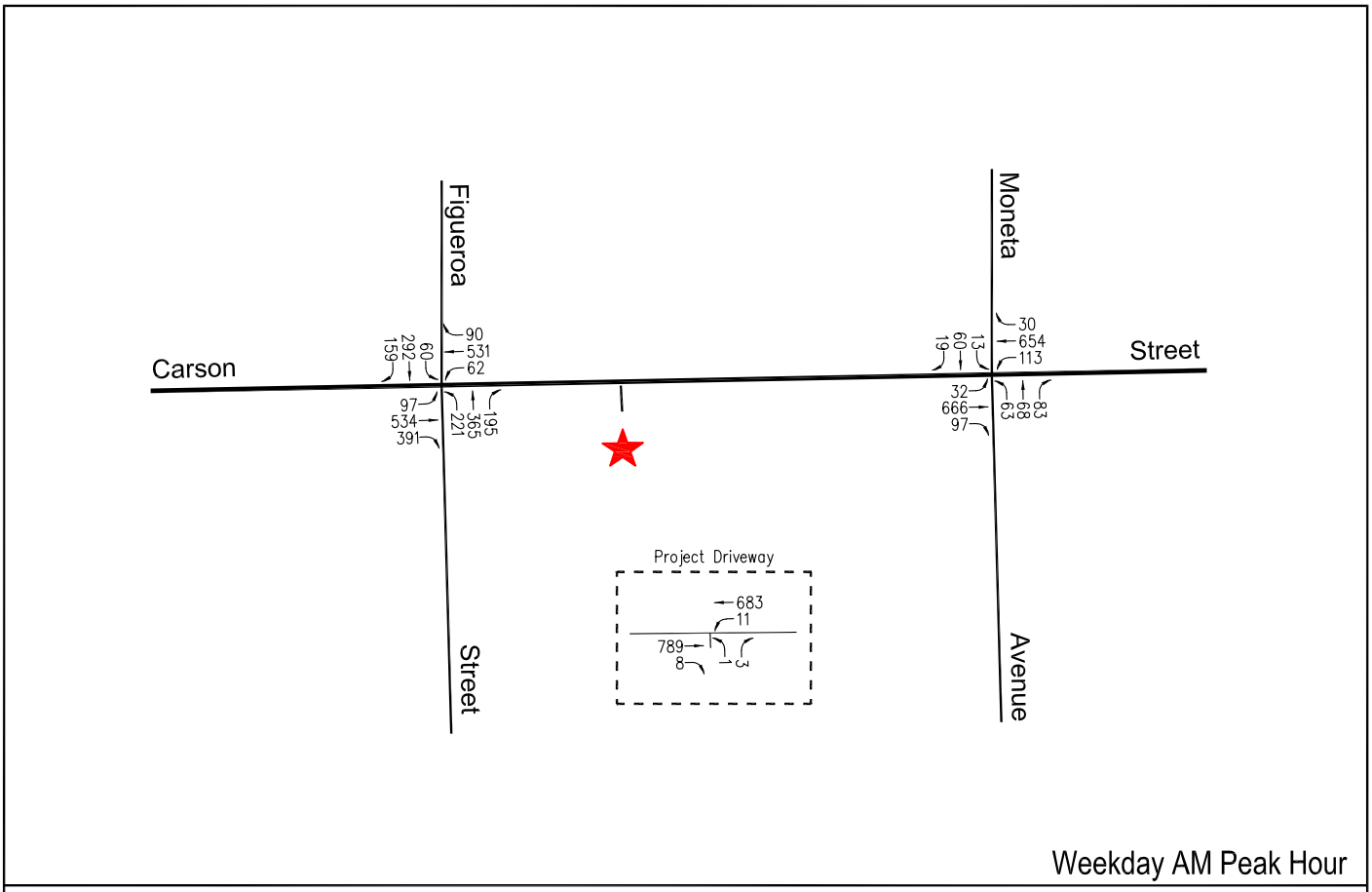
The manual counts of vehicular turning movements were conducted at the two signalized intersections during the weekday morning (AM) and afternoon (PM) commute periods to determine the peak hour traffic volumes. The manual counts were conducted in September 2024 by an independent traffic count subconsultant (The Traffic Solution) at the study intersections on a typical weekday from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM to determine the AM and PM peak commute hours, respectively. In conjunction with the manual turning movement vehicle counts, counts of bicycle and pedestrian volumes were also collected during the peak periods. It is noted that all of the traffic counts were conducted when local schools were in session. The traffic count data for the Project Driveway/Carson Street location were derived from the traffic count data for the adjacent intersections (i.e., the eastbound and westbound volumes from the Figueroa Street/Carson Street and Moneta Avenue/Carson Street intersections) supplemented with inbound and outbound turning movement counts at the existing site driveway.

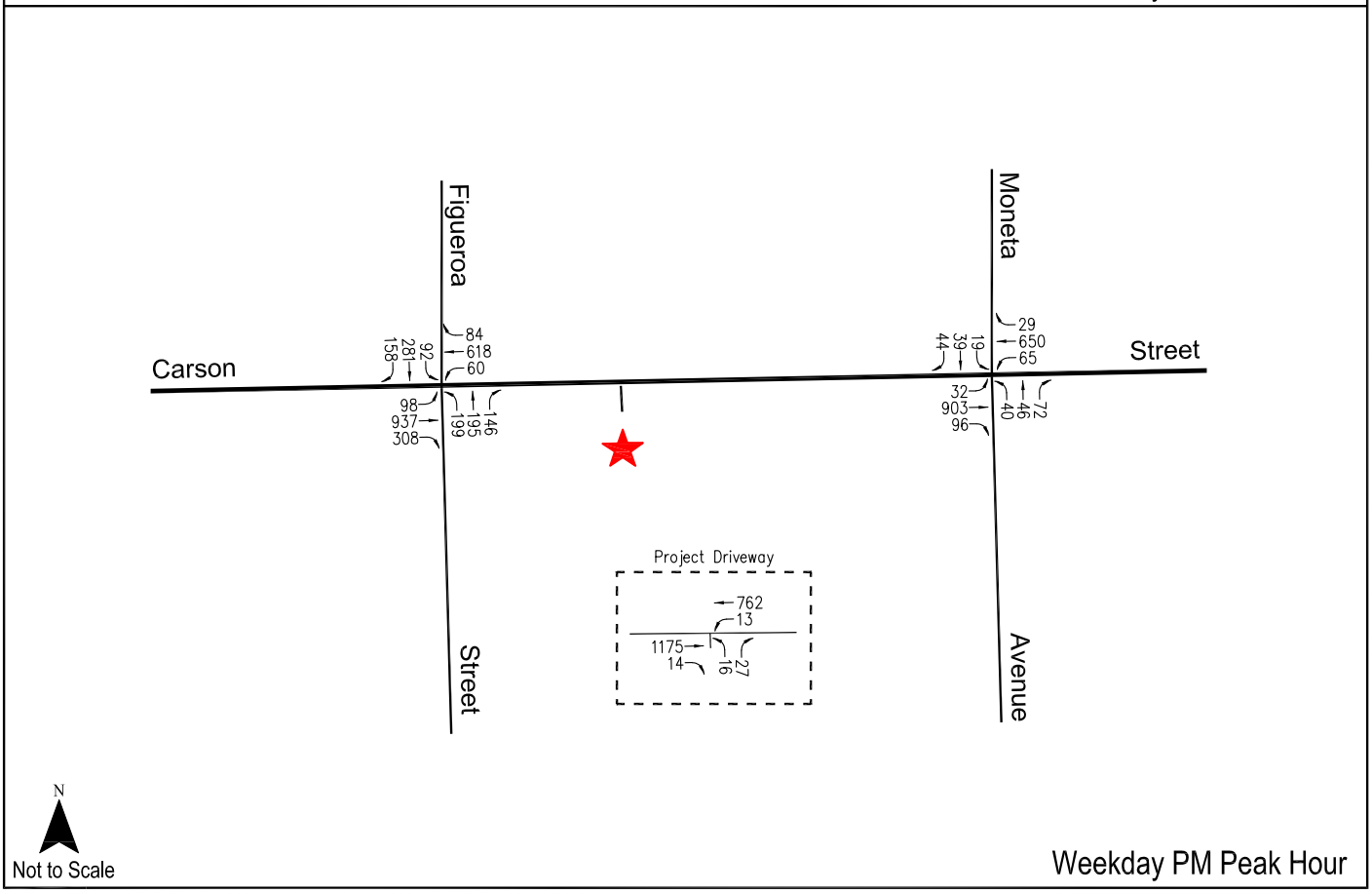
The existing traffic volumes at the study intersections during the weekday AM and PM peak hours are shown in ***Figure 3-5***. Summary data worksheets of the manual traffic counts at the study intersections are contained in ***Appendix B***.

## 3.4 Cumulative Development Projects

The forecast of future pre-project conditions was prepared in accordance to procedures outlined in Section 15130 of the CEQA Guidelines. Specifically, the CEQA Guidelines provide two (2) options for developing the future traffic volume forecast:

> "(A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the [lead] agency, or
>
> (B) A summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program. Any such document shall be referenced and made available to the public at a location specified by the lead agency."

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Project Site

Figure 3-5
Existing Traffic Volumes

LLG

DWB Southland Project

Although the CEQA Guidelines do not strictly apply to the local transportation assessment required by the City of Carson, this transportation analysis provides a highly conservative estimate of future pre-project traffic volumes as it incorporates both the "A" and "B" options outlined in the CEQA Guidelines for purposes of developing the forecast.

### 3.4.1 *Related Projects*

A forecast of on-street traffic conditions prior to occupancy of the proposed project was prepared by incorporating the potential trips associated with other known development projects (related projects) in the area (i.e., within an approximate 0.50-mile radius from the project site). With this information, the potential impact of the proposed project can be evaluated within the context of the cumulative impacts of all ongoing development. The related projects research was based on information on file with the City of Carson, the County of Los Angeles, and the City of Los Angeles. The list of related projects in the project site area is presented in ***Table 3-3***. The location of the related projects is shown in ***Figure 3-6***.

Traffic volumes expected to be generated by the related projects were calculated using rates provided in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*. The related projects' respective traffic generation for the weekday AM and PM peak hours, as well as on a daily basis for a typical weekday, is summarized in *Table 3-3*. The related projects traffic volumes were distributed and assigned to the street system based on the projects' locations in relation to the study intersections, their proximity to major traffic corridors, proposed land uses, nearby population and employment centers, etc. The assignment of the related projects traffic volumes to the study intersections during the weekday AM and PM peak hours is displayed in ***Figure 3-7***.

### 3.4.2 *Ambient Traffic Growth Factor*

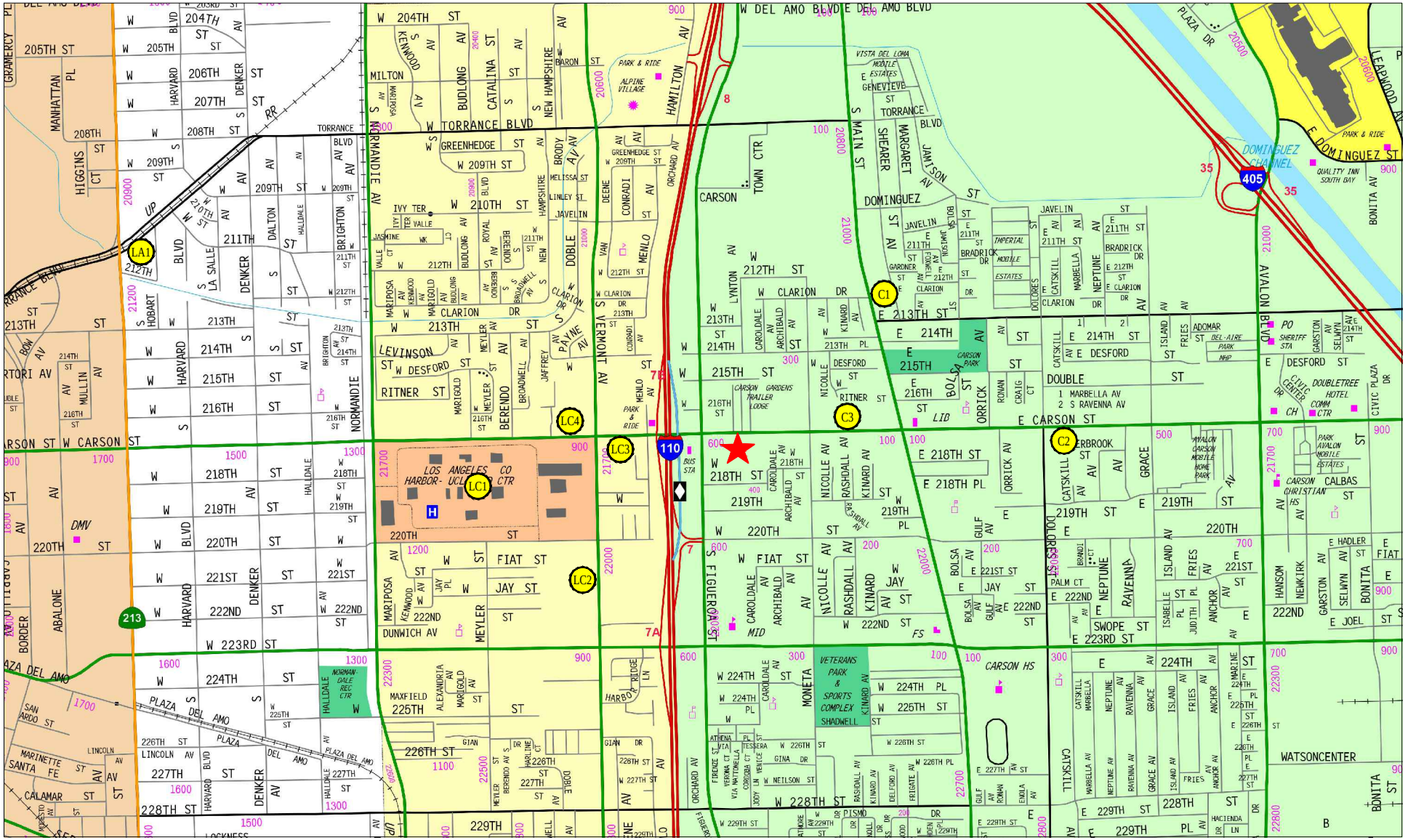
Horizon year background traffic growth estimates have been calculated using an ambient traffic growth factor. The ambient traffic growth factor is intended to include unknown related projects in the study area as well as account for typical growth in traffic volumes due to the development of projects outside the study area. Based on review of the general traffic growth factors provided in the Los Angeles County 2010 Congestion Management Program[4] (CMP) for the project study area (i.e., RSA 19, Palos Verdes that includes the City of Carson), it is anticipated that existing traffic volumes in the vicinity are expected to increase at an annual rate of 0.2% per year between the years 2020 and 2030. An annual growth rate of one percent (1.0%) until the year 2026 (i.e., the anticipated project build-out year) has been utilized for this analysis. Therefore, application of this one percent (1.0%) ambient growth factor in addition to the forecast traffic generated by the related projects allows for a conservative forecast of future traffic volumes in the project study area as incorporation of both (i.e., an ambient traffic growth rate and a detailed list of cumulative development projects) is expected to overstate potential future traffic volumes. The cumulative development projects should already be incorporated as part of the growth rate projection per the adopted, local and regional planning documents (i.e., which account for the future population, housing, and employment [socio-economic data] projections).

[4] Los Angeles County Metropolitan Transportation Authority (Metro) 2010 Congestion Management Program.

**Table 3-3**
**RELATED PROJECTS LIST AND TRIP GENERATION [1]**

| MAP NO. | PROJECT STATUS | PROJECT NAME/NUMBER ADDRESS/LOCATION | LAND USE DATA | | PROJECT DATA SOURCE | DAILY TRIP ENDS [2] VOLUMES | AM PEAK HOUR VOLUMES [2] | | | PM PEAK HOUR VOLUMES [2] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | LAND-USE | SIZE | | | IN | OUT | TOTAL | IN | OUT | TOTAL |
| City of Carson | | | | | | | | | | | | |
| C1 | Proposed | 316 W. 214th Street | Condominiums | 3 DU | [3] | 20 | 0 | 1 | 1 | 1 | 1 | 2 |
| C2 | Approved | Carson Lofts<br>21240-21250 S. Main Street | Apartments | 19 DU | [3] | 128 | 2 | 6 | 8 | 6 | 4 | 10 |
| C3 | Proposed | 336 E. Carson Street | Single-Family Residential<br>Live/Work Office | 50 DU<br>1,400 SF | [4] | 375 | 9 | 17 | 26 | 17 | 14 | 31 |
| C4 | Under Review | 215 W. Carson Street | Condominiums | 35 DU | [5] | 198 | 3 | 9 | 12 | 9 | 5 | 14 |
| County of Los Angeles | | | | | | | | | | | | |
| LC1 | Approved | 1000 W Carson Street | Administrative Office<br>Central Utilities/Industrial<br>Hospital/Inpatient<br>Library<br>Medical Office/Outpatient<br>Warehouse/Storage<br>Retail<br>BioSciences<br>LA BioMed | | [6] | 20,738 | 1,400 | 364 | 1,764 | 620 | 1,687 | 2,307 |
| LC2 | Approved | 22107 S Vermont Avenue | Affordable Housing<br>Apartments | 33 DU<br>492 DU | [7]<br>[8] | 159<br>2,337 | 3<br>88 | 9<br>69 | 12<br>157 | 9<br>61 | 6<br>82 | 15<br>143 |
| LC3 | Approved | 800 W Carson Street | Affordable Housing | 230 DU | [7] | 1,106 | 24 | 59 | 83 | 63 | 43 | 106 |
| LC4 | Approved | 923 W Carson Street | Affordable Housing | 208 DU | [7] | 1,000 | 16 | 26 | 42 | 26 | 32 | 58 |
| City of Los Angeles | | | | | | | | | | | | |
| LA1 | Proposed | 21138 S Western Avenue | Gas Station/Convienience Store | 12 VFP | [9] | 1,461 | 56 | 48 | 104 | 52 | 51 | 103 |
| **TOTAL** | | | | | | **27,522** | **1,601** | **608** | **2,209** | **864** | **1,925** | **2,789** |

[1] Source: Los Angeles County, City of Los Angeles, and City of Carson Community Development Planning department, except as noted below and by applying trip rates as provided in the ITE "Trip Generation", 11th Edition, 2021.
[2] Trips are one-way traffic movements, entering or leaving.
[3] ITE Land Use Code 220 (Multifamily Housing (Low-Rise) Not Close to Rail Transit) trip generation average rates.
[4] Source: "Local Transportation Assessment, 336 E. Carson Street Residential Project," prepared by LLG Engineers, May 31, 2023.
[5] Source: "Local Transportation Assessment, Carson Townhomes Project," prepared by LLG Engineers, March 27, 2023.
[6] Source: "Traffic Impact Analysis for the Harbor-UCLA Medical Center Master Plan Project," prepared by Fehr & Peers, August 2016.
[7] ITE Land Use Code 223 (Affordable Housing - Income Limits) trip generation average rates.
[8] ITE Land Use Code 221 (Multifamily Housing (Mid-Rise) Close to Rail) Transit trip generation average rates.
[9] Source: Los Angeles Department of Transportation (LADOT)




N

Not to Scale

★ Project Site

(C) City of Carson Related Project

(LC) County of Los Angeles Related Project

(LA) City of Los Angeles Related Project

# Figure 3-6
## Location of Related Projects



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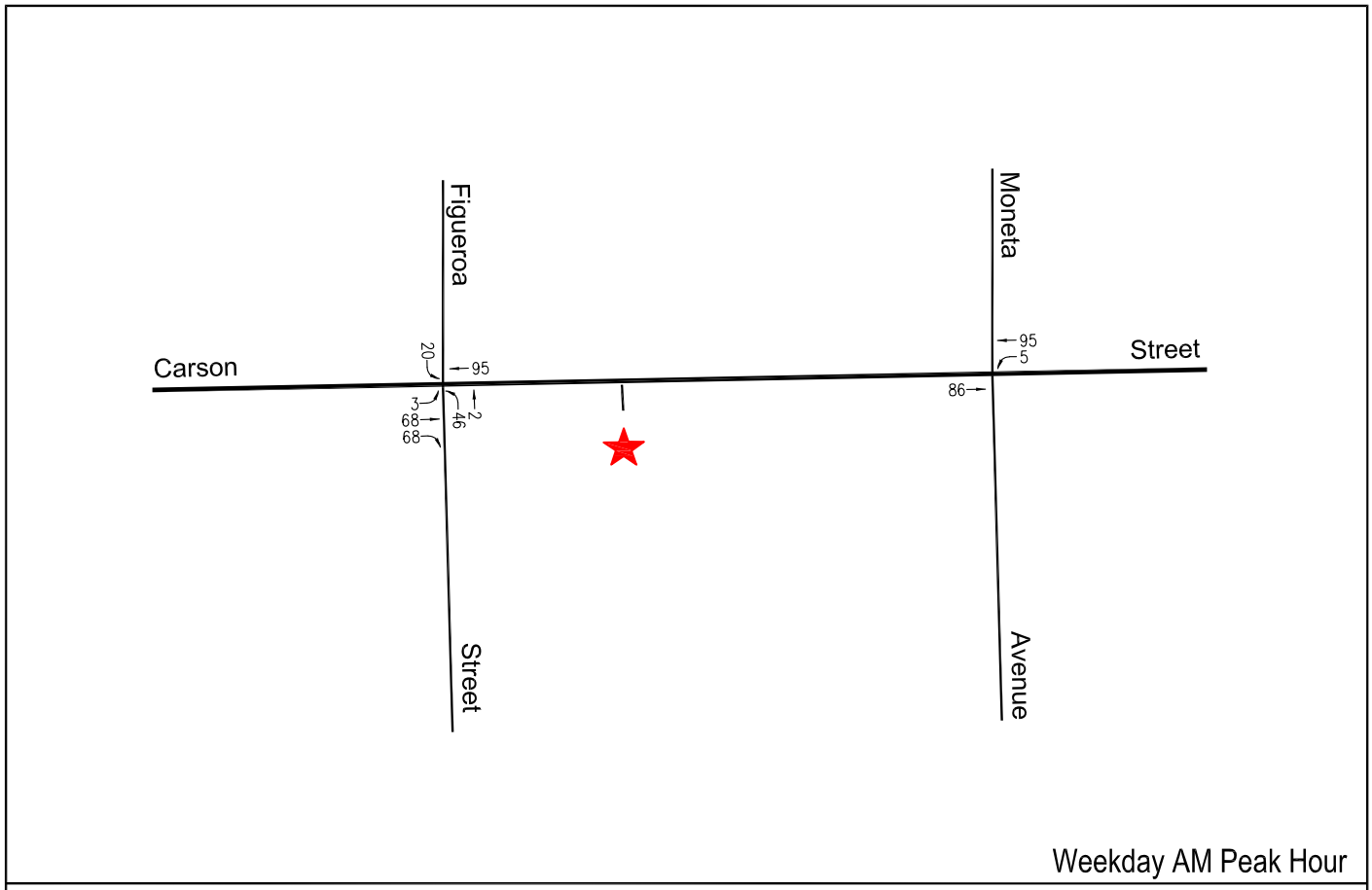


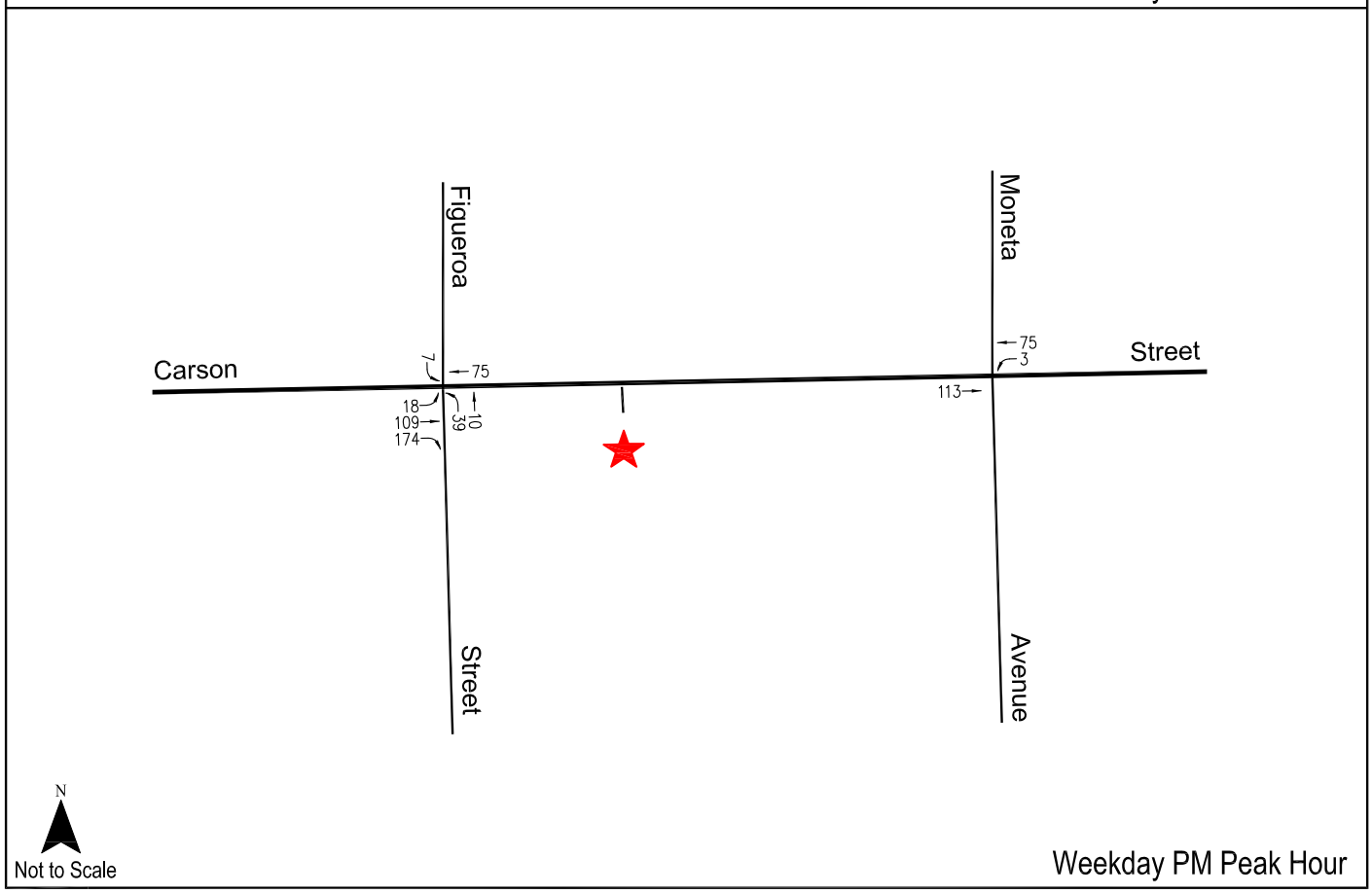


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Project Site

Figure 3-7
Related Projects Traffic Volumes

LLG

DWB Southland Project

# 4.0 INTERSECTION OPERATIONAL ANALYSIS

As part of the discretionary review and approval process, the City has the authority to require a LOS analysis in order to assess the proposed project's consistency with the City's General Plan LOS goals. Specifically, the City requires an operational analysis of intersections in the vicinity of a proposed project in order to evaluate site access and circulation constraints that may be caused or worsened by project-generated traffic. The following section presents the intersection operational (i.e., Level of Service) analyses prepared for the proposed project pursuant to the General Plan LOS standards and transportation infrastructure goals.

## 4.1 Analysis Methodology

In order to estimate the proposed project's effect on intersection operations, a multi-step process has been utilized. The first step is trip generation, which estimates the total arriving and departing traffic volumes on a peak hour and daily basis. The second step of the forecasting process is trip distribution, which identifies the origins and destinations of inbound and outbound project traffic volumes. These origins and destinations are typically based on demographics and existing/anticipated travel patterns in the study area. The third step is traffic assignment, which involves the allocation of project traffic to study area streets and intersections. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway links and intersection turning movements throughout the study area. The proposed project's forecast trip generation, distribution, and assignment is presented in *Section 2.5* herein. With the forecasting process complete and project traffic assignments developed, the effect of the proposed project is isolated by comparing operational conditions at the selected study intersections using existing and expected future traffic volumes without and with forecast project traffic.

The study intersections LOS was analyzed using the Highway Capacity Manual[5] (HCM) method of analysis. The HCM methodology determines the average control delay (expressed in seconds per vehicle [s/veh]) at the intersection. Average control delay for any particular movement is a function of the capacity of the approach and the degree of saturation. The intersection delay is subsequently assigned a LOS value to describe intersection operations. Level of Service varies from LOS A (free flow conditions) to LOS F (jammed conditions). The average control delay for signalized intersections represents the delay attributed to the traffic control facility as compared to a reference travel time in the absence of traffic control, geometric delay, incidents, and the influence of other vehicles. A detailed description of the HCM method and corresponding Level of Service for the signalized study intersections is provided in ***Appendix C***.

For the unsignalized study location, the HCM methodology for unsignalized/two-way stop-controlled (TWSC) intersections was utilized for the analysis. The TWSC methodology estimates the average control delay for each minor-street movement (or shared movement) as well as major-street left-turns and determines the LOS for each constrained movement. A description of the

[5] *Highway Capacity Manual 7th Edition*, Transportation Research Board of the National Academies of Sciences-Engineering-Medicine, 2022.

HCM method and corresponding Level of Service for the unsignalized intersection is also provided in *Appendix C*.

The HCM method calculations were prepared using the *Synchro 12* software package which implements the HCM operational methodology. A *Synchro* network was created based on existing conditions field reviews at the study intersections. In addition, specifics such as traffic volume data, lane configurations, available vehicle storage lengths, crosswalk locations, posted speed limits, traffic signal timing and phasing, etc., were coded to complete the existing network. The parameters and assumptions utilized in the analysis were based on the direction provided by City staff.

## 4.2 Criteria for Intersection Operational Analysis

The relative effect of the added project traffic volumes to be generated by the proposed project during the weekday AM and PM peak hours was evaluated based on analysis of existing and future operating conditions at the study intersections, without and with the proposed project. The previously discussed capacity analysis procedures were utilized to evaluate the delay and service level characteristics at each study intersection.

The City of Carson General Plan has established the minimum acceptable Level of Service (LOS) D for peak hour intersection operations. A traffic operations issue is identified if the addition of traffic generated from the proposed project results in an intersection operating at acceptable LOS (i.e., LOS D or better) to operate at unacceptable LOS (i.e., LOS E or F).

Where intersections are found to operate at unacceptable LOS, and the addition of project-generated traffic causes an exceedance of the City's criteria, improvements should be identified to increase performance to pre-project conditions under each scenario.

## 4.3 Analysis Scenarios

Pursuant to the City's Guidelines and in coordination with City staff, LOS calculations have been prepared for the following scenarios:

[a] Existing conditions.

[b] Condition [a] plus 1.0 percent (1.0 %) per year annual ambient traffic growth through year 2026.

[c] Condition [b] with project conditions.

[d] Condition [a] plus 1.0 percent (1.0 %) per year annual ambient traffic growth through year 2026 and with completion and occupancy of the related projects (i.e., future cumulative [opening year] without project conditions).

[e] Condition [d] with completion and occupancy of the proposed project.

[f] Condition [e] with implementation of intersection improvement measures, if necessary.

The weekday AM and PM peak hour LOS analysis prepared for the study intersections is summarized in ***Table 4-1***. The calculation data worksheets for the analyzed intersections are provided in *Appendix C*.

## 4.4 Existing Conditions

### 4.4.1 *Existing Conditions*

As indicated in column [1] of *Table 4-1*, all of the study intersections currently operate at LOS D or better during the weekday AM and PM peak hours. The existing traffic volumes at the study intersections during the weekday AM and PM peak hours are displayed in *Figure 3-5*.

### 4.4.2 *Existing With Ambient Growth Conditions*

As indicated in column [2] of *Table 4-1*, all of the study intersections are expected to operate at LOS D or better during the weekday AM and PM peak hours. The existing with ambient growth traffic volumes at the study intersections during the weekday AM and PM peak hours are displayed in ***Figure 4--1***.

### 4.4.3 *Existing With Ambient Growth and Project Conditions*

As shown in column [3] of *Table 4-1*, application of the City's threshold criteria to the "Existing With Project" scenario indicates that the project-related effects in the delay at the study intersections are not expected to exceed the City's threshold criteria. Incremental delays, but not exceeding the City's criteria, are noted at the study intersections. The existing with ambient growth and project traffic volumes at the study intersections during the weekday AM and PM peak hours are illustrated in ***Figure 4-2***.

## 4.5 Future Year 2026 Cumulative Conditions

### 4.5.1 *Future Year 2026 Cumulative Without Project Conditions*

The future year 2026 (opening year) cumulative baseline conditions were forecast based on the addition of traffic generated by the completion and occupancy of the related projects, as well as the growth in traffic due to the combined effects of continuing development, intensification of existing developments and other factors (i.e., ambient growth). The delays at the study intersections are incrementally increased with the addition of ambient traffic and traffic generated by the related projects listed in *Table 3-3*.

As presented in column [4] of *Table 4-1*, all of the study intersections are expected to operate at LOS D or better during the weekday AM and PM peak hours with the addition of growth in ambient traffic and related projects traffic under the future year 2026 without project conditions. The future year 2026 without project (existing plus ambient growth and related projects) traffic volumes at the study intersections during the weekday AM and PM peak hours are illustrated in ***Figure 4-3***.

**Table 4-1**
**SUMMARY OF INTERSECTION OPERATIONAL ANALYSIS [a]**
**DELAYS AND LEVELS OF SERVICE**
**WEEKDAY AM AND PM PEAK HOURS**

| | | | | [1] | | [2] | | [3] | | | | [4] | | [5] | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NO. | INTERSECTION | TRAFFIC CONTROL | PEAK HOUR | EXISTING Delay [b] | LOS [c] | EXISTING W/ AMBIENT GROWTH Delay [b] | LOS [c] | EXISTING W/ AMBIENT GROWTH AND PROJECT Delay [b] | LOS [c] | CHANGE Delay [b] [(3)-(2)] | CRITERIA EXCEEDED [d] | YEAR 2026 FUTURE W/O PROJECT Delay [b] | LOS [c] | YEAR 2026 FUTURE W/ PROJECT Delay [b] | LOS [c] | CHANGE Delay [b] [(5)-(4)] | CRITERIA EXCEEDED [d] |
| 1 | Figueroa Street/ | Signalized | AM | 32.5 | C | 32.8 | C | 32.8 | C | 0.0 | No | 34.1 | C | 34.2 | C | 0.1 | No |
| | Carson Street | | PM | 35.2 | D | 35.5 | D | 35.6 | D | 0.1 | No | 37.6 | D | 37.8 | D | 0.2 | No |
| 2 | Moneta Avenue/ | Signalized | AM | 10.4 | B | 10.4 | B | 10.4 | B | 0.0 | No | 10.1 | B | 10.1 | B | 0.0 | No |
| | Carson Street | | PM | 8.2 | A | 8.3 | A | 8.3 | A | 0.0 | No | 8.0 | A | 8.0 | A | 0.0 | No |

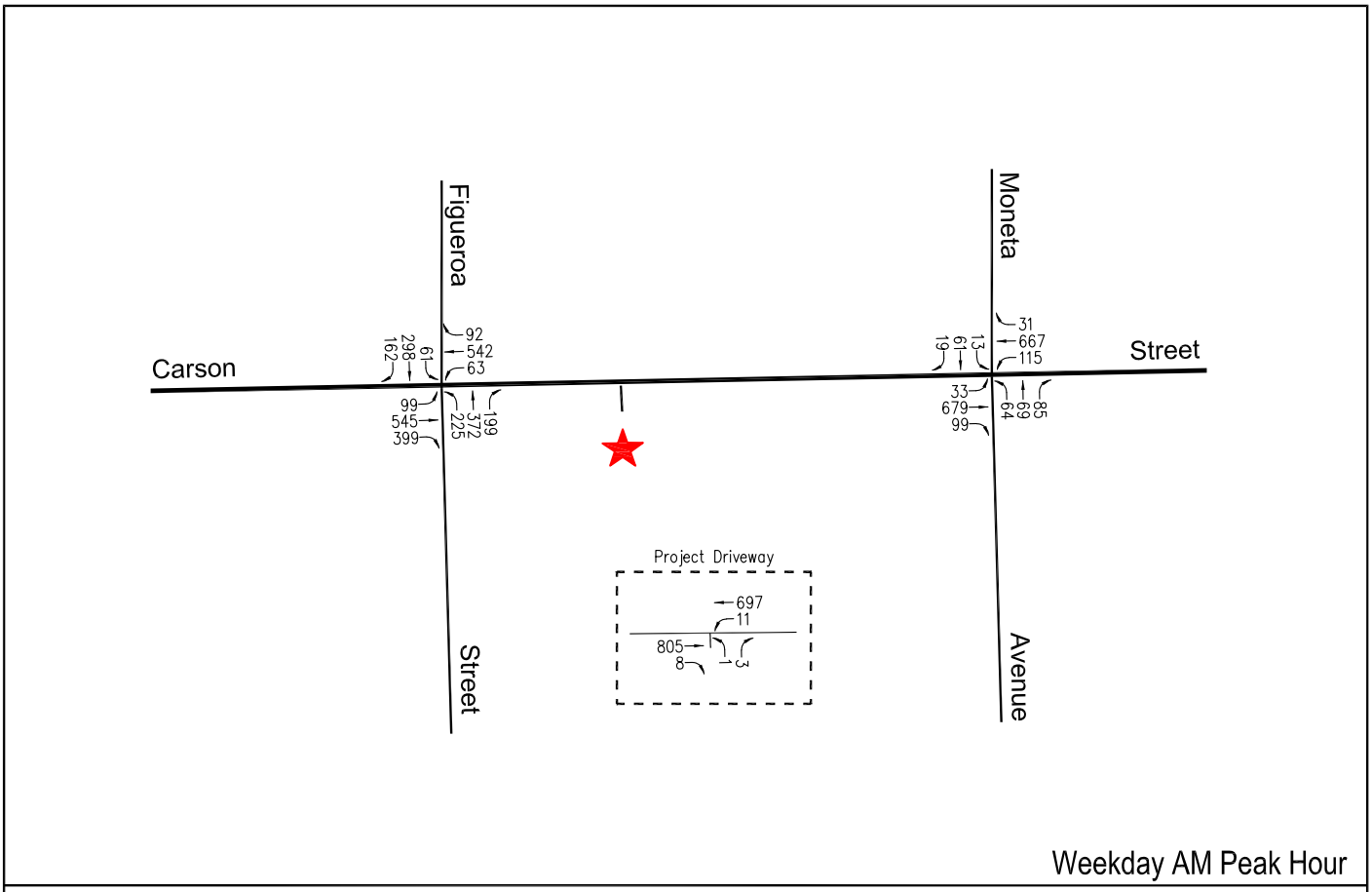
[a] Intersection analysis based on the Highway Capacity Manual, 7th Edition operational analysis methodologies.

[b] Reported control delay values in seconds per vehicle.

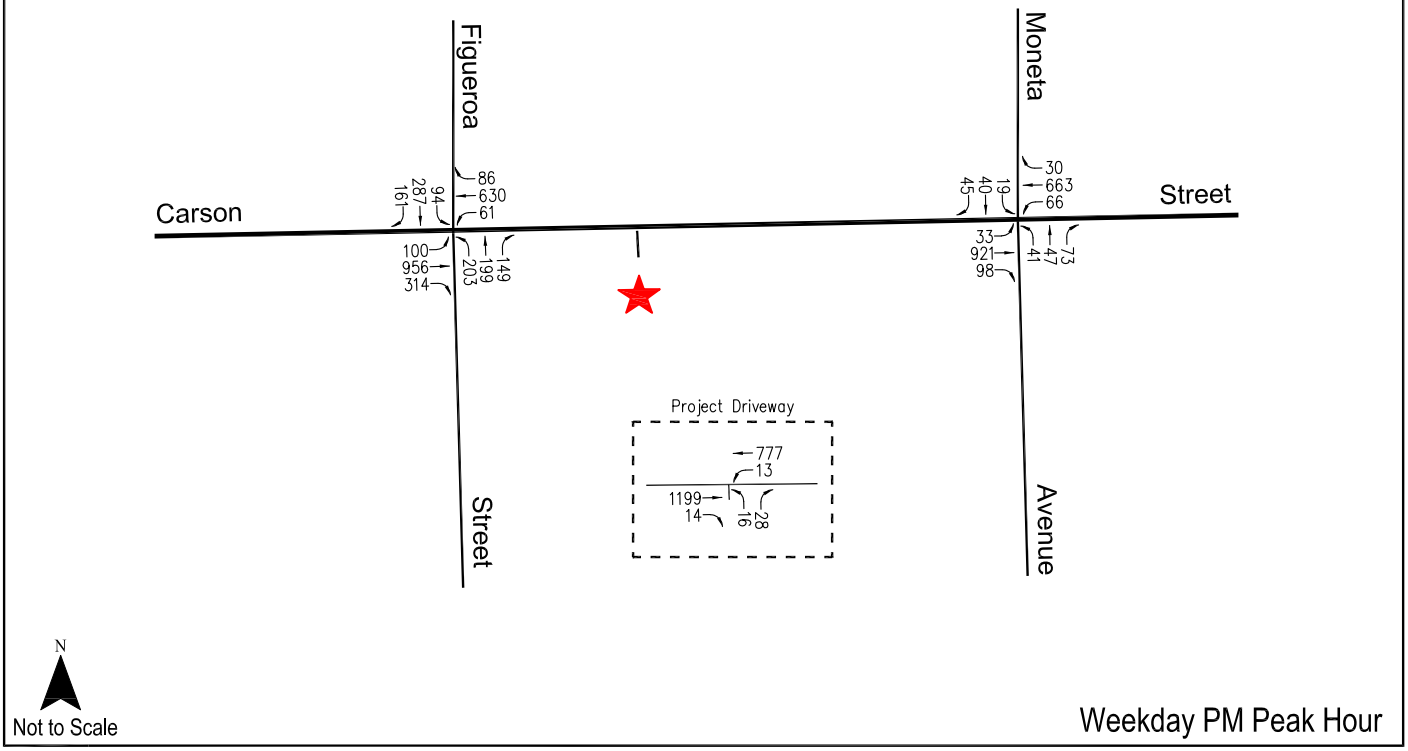
[c] Intersection Levels of Service are based on the following criteria:

| Signalized Intersection Control Delay (s/veh) | LOS |
|---|---|
| <= 10 | A |
| > 10-20 | B |
| > 20-35 | C |
| > 35-55 | D |
| > 55-80 | E |
| > 80 | F |

[d] According to the City of Carson guidelines, a traffic operations issue is identified if the addition of the traffic generated from the proposed project results in an intersection operating at acceptable LOS (i.e., LOS D or better) to operate at unacceptable LOS (i.e., LOS E or F).




Weekday AM Peak Hour




Weekday PM Peak Hour

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Project Site

Figure 4-1
Existing With Ambient Growth Traffic Volumes

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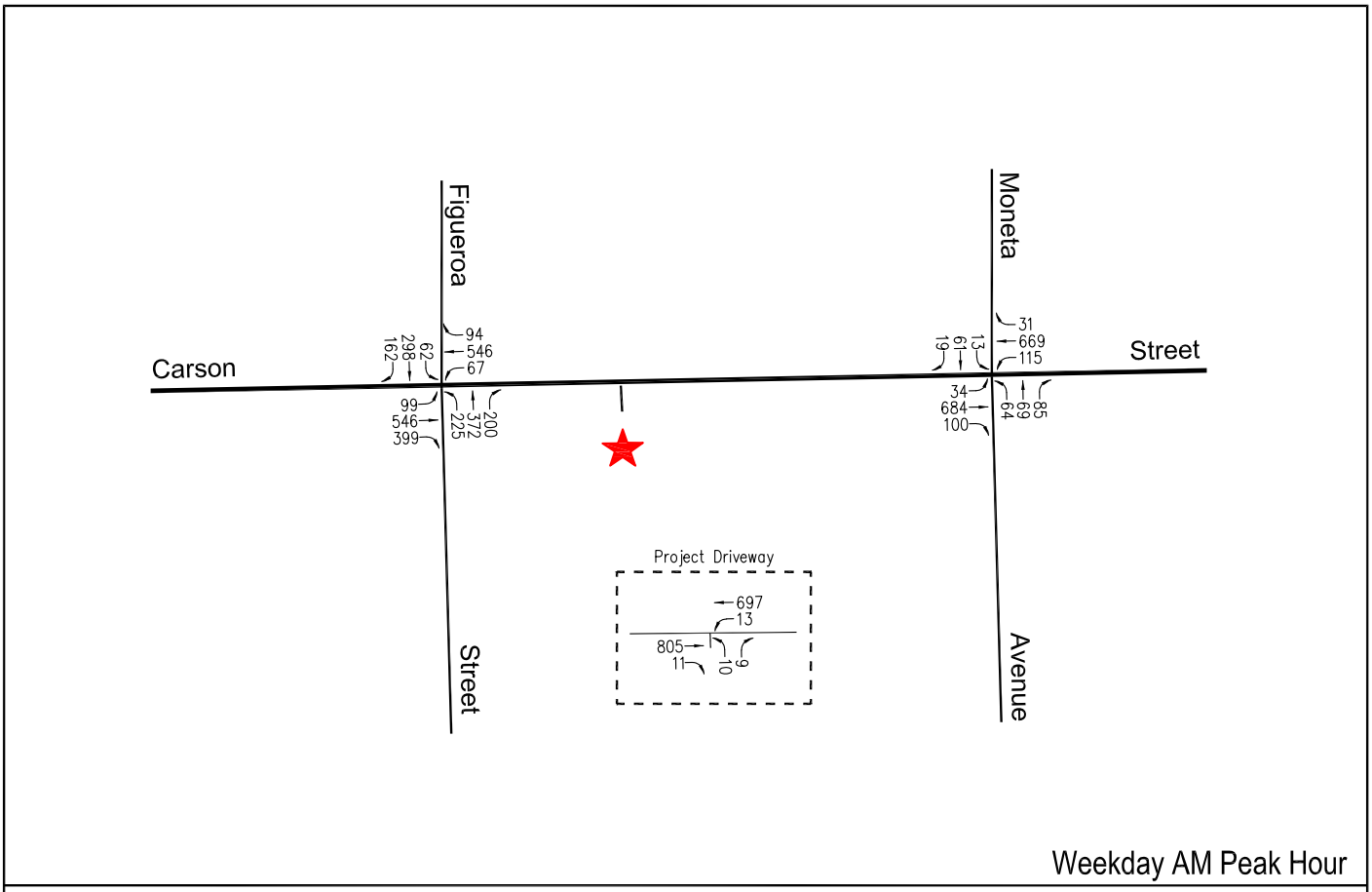


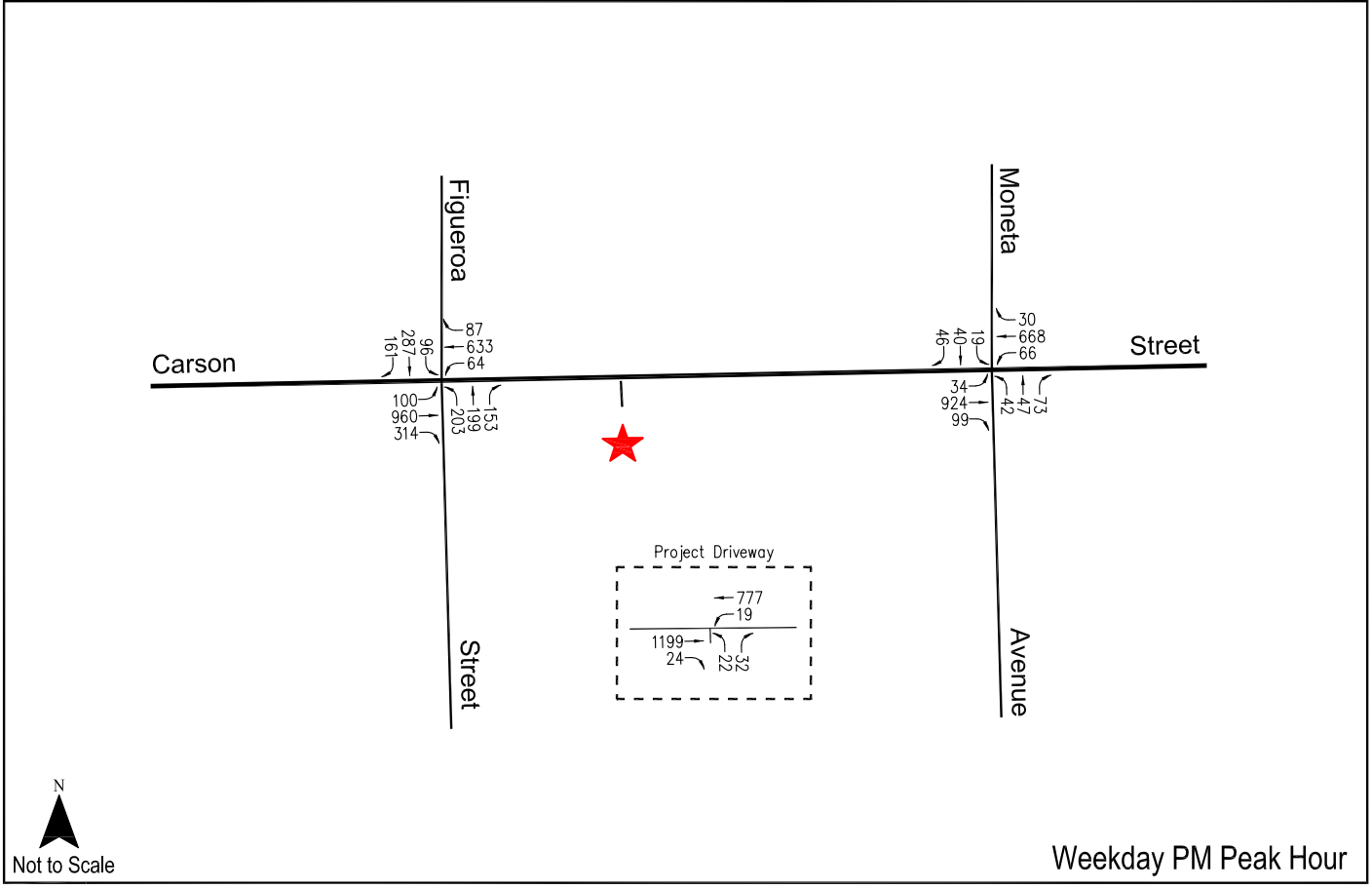


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Project Site

Figure 4-2
Existing With Ambient Growth and Project Traffic Volumes

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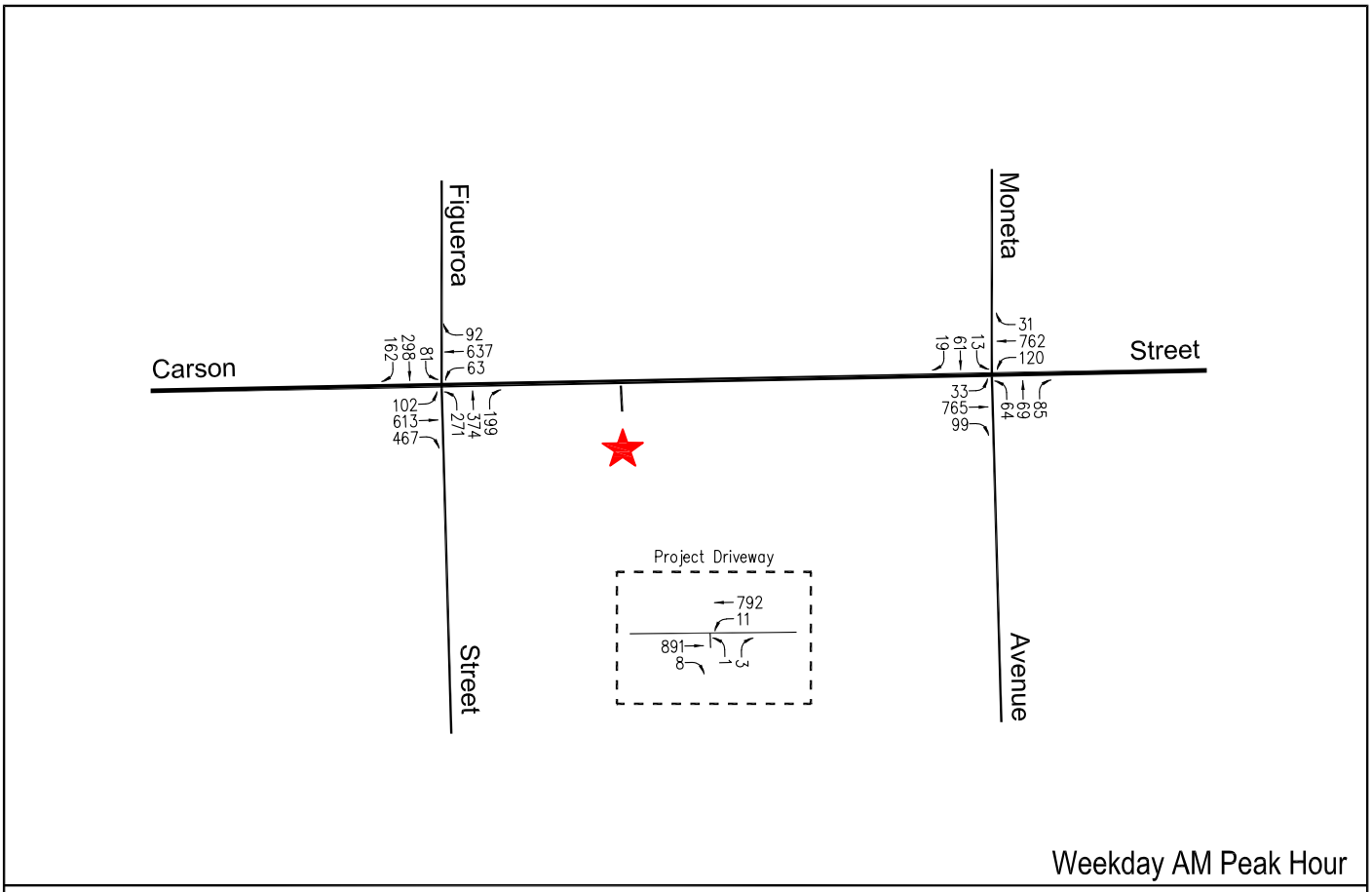
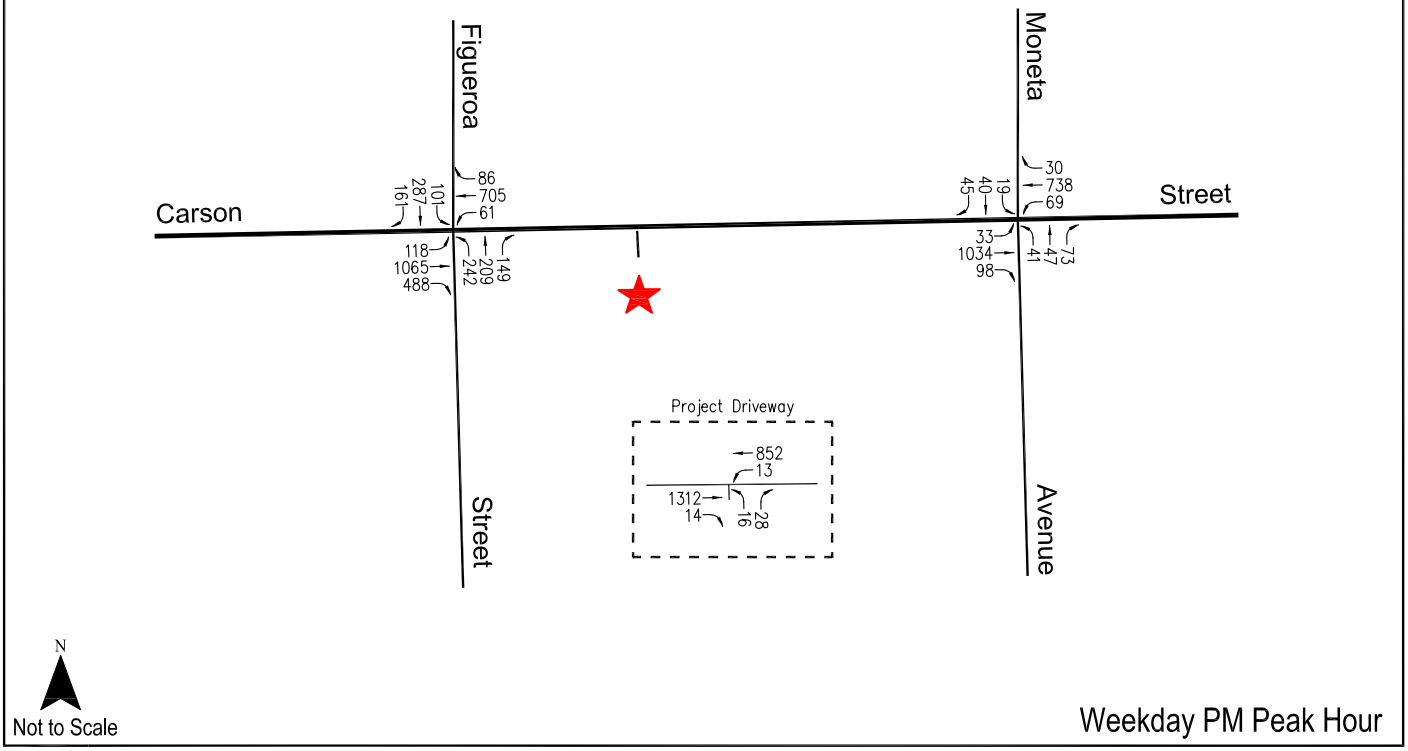



Weekday AM Peak Hour




Weekday PM Peak Hour

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Project Site

Figure 4-3
Future Year 2026 Without Project Traffic Volumes

LLG

DWB Southland Project

### 4.5.2 *Future Year 2026 Cumulative With Project Conditions*

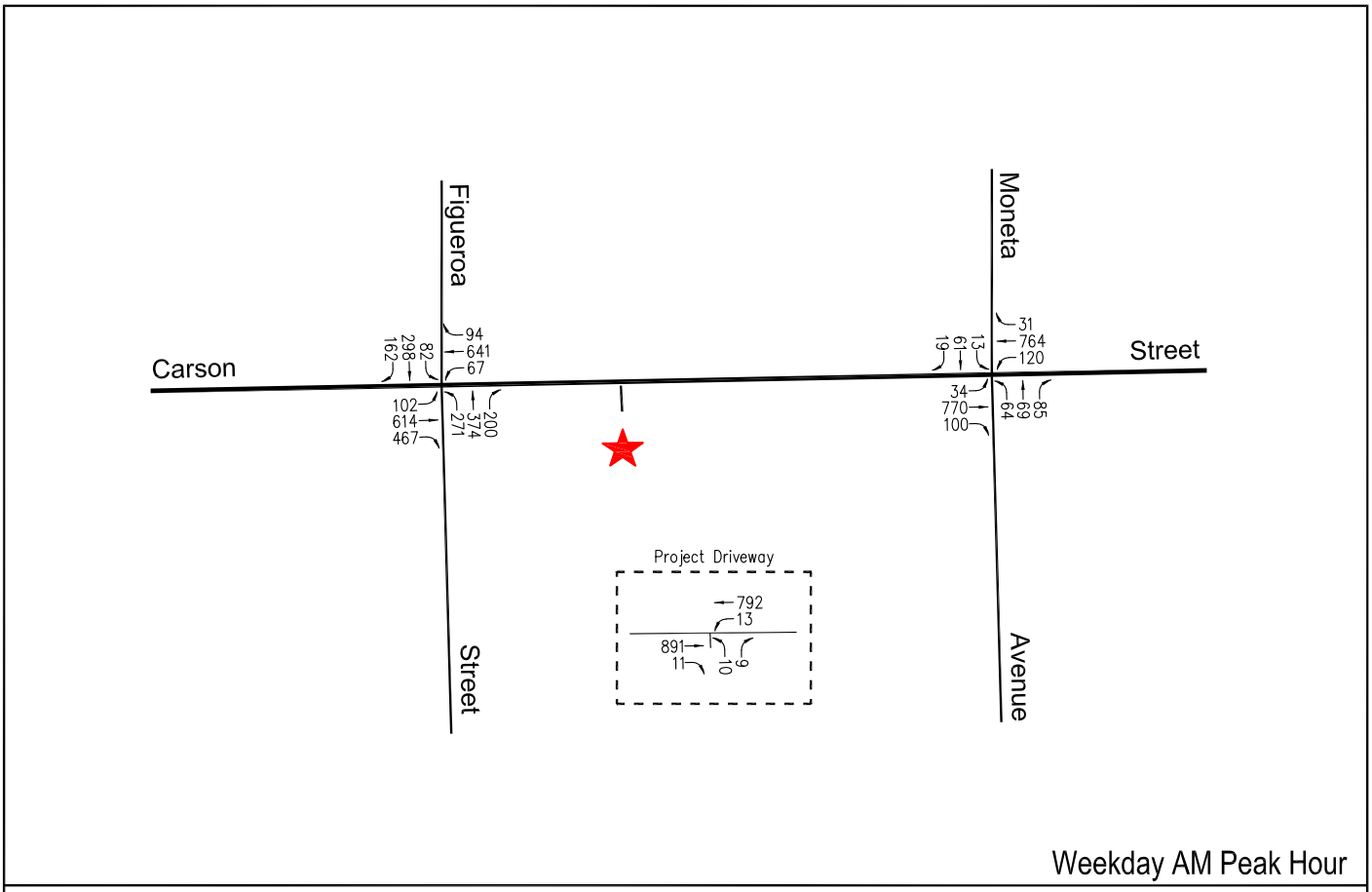
As shown in column [5] of *Table 4-1*, application of the City's threshold criteria to the "Future Year 2026 With Project" scenario indicates that the project-related effects in the delay at the study intersections are not expected to exceed the City's threshold criteria. Incremental delays, but not exceeding the City's criteria, are noted at the study intersections. The future year 2026 with project traffic volumes at the study intersections during the weekday AM and PM peak hours are illustrated in ***Figure 4-4***.

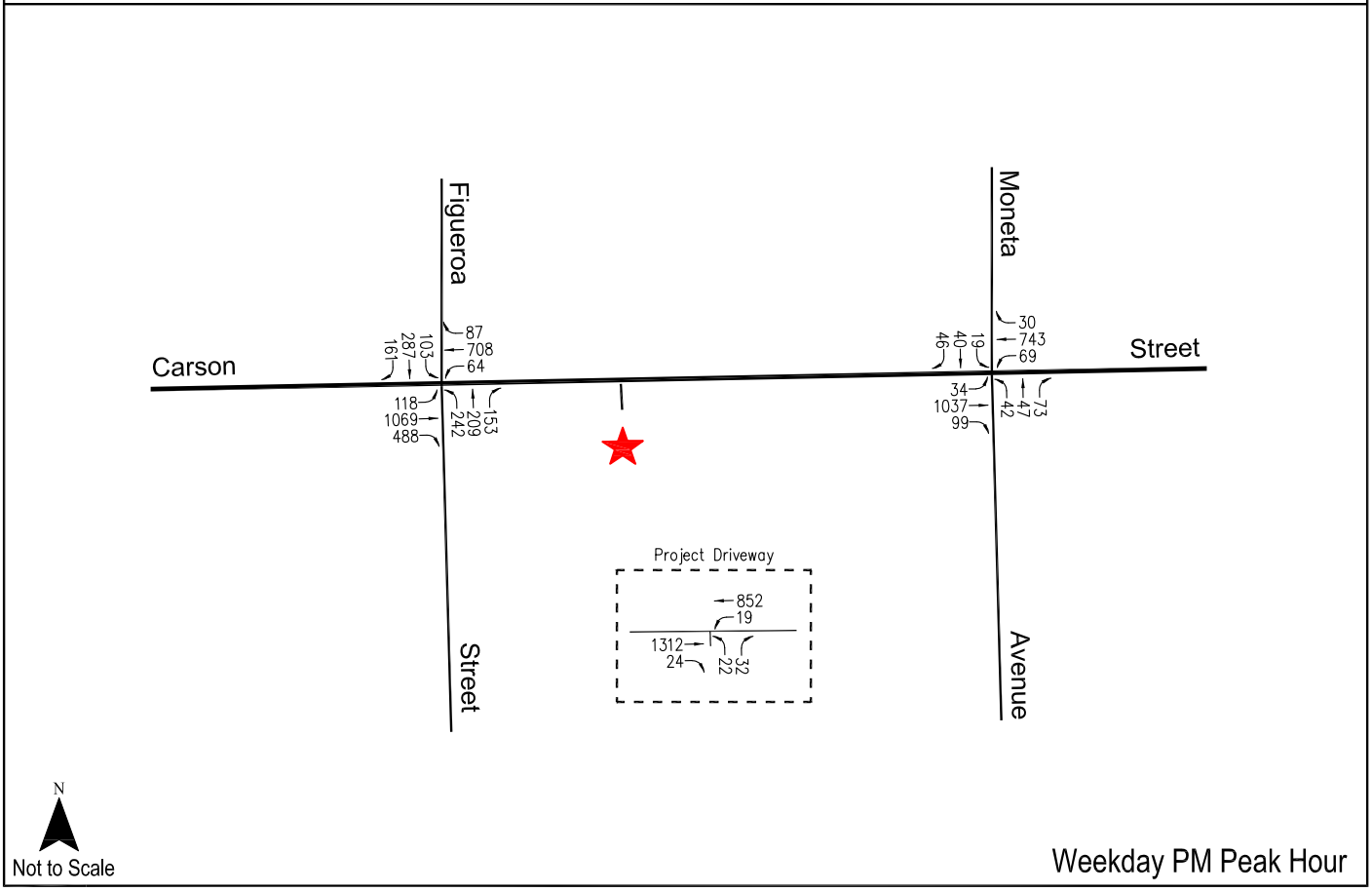
## 4.6 Access and Circulation Review

The access and circulation have been evaluated for the project. The analysis of site driveway was prepared based on the HCM operational analysis methodology. The driveway analyses were prepared utilizing the *Synchro 12* software package, which implements the HCM operational methods. A *Synchro* network was created based on existing conditions field reviews at the site driveway. In addition, specifics such as traffic volume data, lane configurations, available vehicle storage lengths, crosswalk locations, posted speed limits, etc., were coded to complete the roadway network.

The HCM methodology for unsignalized/two-way stop-controlled (TWSC) intersections was utilized for the analysis of the site driveway. The TWSC methodology estimates the average control delay for each minor-street movement (or shared movement) as well as major-street left-turns and determines the LOS for each constrained movement. The weekday AM and PM peak hour LOS analysis prepared for the site driveway is summarized in ***Table 4-2***. As shown in *Table 4-2*, the northbound approach of the site driveway intersection is forecast to operate at LOS F during the PM peak hour under the future without and with project conditions.

It is noted that the site driveway is located approximately mid-day between two existing signalized intersections that would provide gaps in the eastbound and westbound traffic flows for vehicles to turn left out of the site driveway. As such, while the northbound left-turn movement exiting the site driveway is forecast to result in an increase in delay during the PM peak hour under the future with project conditions, vehicle queuing on-site is not anticipated with the addition of the project. Accordingly, further consideration of transportation improvement measures is not warranted or recommended.

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Project Site

Figure 4-4
Future Year 2026 With Project Traffic Volumes

LLG

**Table 4-2**
**SUMMARY OF DRIVEWAY OPERATIONAL ANALYSIS [a]**
**DELAYS AND LEVELS OF SERVICE**
**WEEKDAY AM AND PM PEAK HOURS**

| | | | | [1] | | [2] | | [3] | | | [4] | | [5] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NO. | INTERSECTION | TRAFFIC CONTROL | PEAK HOUR | EXISTING Delay [b] | LOS [c] | EXISTING W/ AMBIENT GROWTH Delay [b] | LOS [c] | EXISTING W/ AMBIENT GROWTH AND PROJECT Delay [b] | LOS [c] | CHANGE Delay [b] [(3)-(2)] | YEAR 2026 FUTURE W/O PROJECT Delay [b] | LOS [c] | YEAR 2026 FUTURE W/ PROJECT Delay [b] | LOS [c] | CHANGE Delay [b] [(5)-(4)] |
| 3 | Project Driveway/ Carson Street | Unsignalized | AM | 15.5 | C | 15.8 | C | 21.9 | C | 6.1 | 17.6 | C | 26.0 | D | 8.4 |
| | | | PM | 37.0 | E | 38.8 | E | 49.2 | E | 10.4 | 51.7 | F | 70.4 | F | 18.7 |

[a] Intersection analysis based on the Highway Capacity Manual, 7th Edition operational analysis methodology for unsignalized intersections.

[b] Two-Way Stop-Controlled Intersection. Reported values represent the delays (in seconds) associated with the most constrained approach of the intersection.

[c] Intersection Levels of Service are based on the following criteria:

Unsignalized Intersection

| Control Delay (s/veh) | LOS |
|---|---|
| <= 10 | A |
| > 10-15 | B |
| > 15-25 | C |
| > 25-35 | D |
| > 35-50 | E |
| > 50 | F |

## 5.0 SUMMARY AND CONCLUSIONS

- ***Project Description*** - The project site is located at 438 West Carson Street in the City of Carson. The project site is situated along the south side of Carson Street between Figueroa Street and Moneta Avenue. The proposed project consists of the construction of 51 residential dwelling units. The project build-out and occupancy year is anticipated by the year 2026.

- ***Project Site Access***– Vehicular access to the proposed project site is planned to be provided via the existing driveway located on the south side of Carson Street, along the northerly project frontage. The project driveway will continue to accommodate full access (i.e., left-turn and right-turn ingress and egress traffic movements).

- ***Project Parking –*** A total of 115 parking spaces is planned to be provided for the project. In addition, nine bicycle spaces are planned to be provided for the project.

- ***Project Trip Generation*** – The proposed project is expected to generate 20 vehicle trips (5 inbound trips and 15 outbound trips) during the weekday AM peak hour. During the weekday PM peak hour, the proposed project is expected to generate 26 vehicle trips (16 inbound trips and 10 outbound trips). Over a 24-hour period, the proposed project is forecast to generate 344 daily trip ends during a typical weekday (172 inbound trips and 172 outbound trips).

- ***Intersection Operational Analysis*** – Two intersections were reviewed for consistency with the City of Carson's adopted Level of Service (LOS) standards. The study intersections were evaluated using the City-approved Highway Capacity Manual (HCM) methodology to determine the LOS under existing and future year 2026 cumulative without and with project conditions. Based on application of the City's threshold criteria, the project-related effects in the delay at the study intersections are not expected to exceed the City's threshold criteria.

- ***Project Access and Circulation Review*** – A review of the project site driveway was conducted. It is concluded that the proposed project weekday AM and PM peak hour traffic volumes will not cause or substantially extend vehicle queuing at the site driveway.

# APPENDIX A

## SCOPING DOCUMENT

# MEMORANDUM

| | | | |
|---|---|---|---|
| To: | John Merrill<br>City of Carson | Date: | August 1, 2024 |
| From: | Francesca S. Bravo<br>Linscott, Law & Greenspan, Engineers | LLG Ref: | 1-24-4637-1 |
| Subject: | DWB Southland Project – Transportation Assessment Scope of Work | | |

600 S. Lake Avenue
Suite 500
Pasadena, CA 91106
626.796.2322 T
www.llgengineers.com

Pasadena
Irvine
San Diego

Linscott, Law & Greenspan, Engineers (LLG) is pleased to submit the following Transportation Assessment Scope of Work for the DWB Southland Project for your review and approval.

## Project Description

**A. Project Location:** The project site is located at 438 West Carson Street situated along the south side of West Carson Street between Figueroa Street and Moneta Avenue. The project site is currently occupied by a surface parking lot utilized by the adjacent Southland Credit Union business. See attached ***Figure 1-1, Vicinity Map***.

**B. Project Description:** The proposed project consists of the construction of 51 residential dwelling units. A total of 115 parking spaces is planned to be provided on-site. Vehicular access for the project is planned to be provided via the existing driveway on West Carson Street that is shared with the existing Southland Credit Union business. The project build-out and occupancy year is anticipated by the year 2026. See attached ***Figure 2-2 – Site Plan***.

## CEQA Scope Of Work

**C. Vehicle Miles Traveled Screening:** It is understood that the City of Carson has formally adopted Vehicle Miles Traveled (VMT) thresholds for VMT analysis of land use development projects within its jurisdiction. It is further understood that the City intends to generally follow the methodology set forth in the Los Angeles County Public Works Transportation Impact Guidelines[1].

Consistent with the recommendations provided by the Governor's Office of Planning and Research (OPR) in the "Technical Advisory on Evaluating Transportation Impacts in CEQA[2]" (December 2018), the County's Guidelines recognize four screening criteria which may be applied to screen proposed projects out of detailed VMT analysis. The guidelines provide the following four (4) types of potential screening criteria that may be applied to screen projects from project-level assessment:

- Non-Retail Project Trip Generation Screening
- Retail Project Site Plan Screening
- Proximity to Transit Based Screening

[1] Los Angeles County Public Works "Transportation Impact Analysis Guidelines," prepared by Los Angeles County Public Works, July 23, 2020.
[2] *Technical Advisory on Evaluating Transportation Impacts in CEQA*, Governor's Office of Planning and Research, December 2018.

David S. Shender, PE
John A. Boarman, PE
Richard E. Barretto, PE
Keil D. Maberry, PE
KC Yellapu, PE
Dave Roseman, PE
Shankar Ramakrishnan, PE
An LG2WB Company Founded 1966

- Residential Land Use Screening

Proposed projects are not required to satisfy all of the screening criteria in order to screen out of further VMT analysis; satisfaction of one criterion is sufficient for screening purposes. Projects, or project components, which are screened out of detailed VMT assessment based on these criteria are presumed to have less than significant transportation impacts.

LLG will review the proposed project to determine whether any screening thresholds are met. It is assumed that the project satisfies the proximity to transit screening criteria as the project site is located within a one-half mile distance of the Los Angeles Metropolitan Transportation Authority (Metro) "J" (Silver) Line Carson Station and therefore meets the statutory requirements to presume less than significant transportation impacts according to the County's Guidelines. A separate VMT screening memorandum will be prepared for the project for review and approval.

**D. VMT Screening Assessment:** LLG will prepare a VMT Screening Assessment in technical memorandum format which summarizes the above-mentioned VMT screening assessment, including our findings, and conclusions. The VMT Screening Assessment will be suitably documented with tables, figures, and appendix materials.

**Non-CEQA Scope Of Work**

Per the City's requirements, projects that are anticipated to produce a net 50 or more peak hour trips through an intersection, or net 110 trips or more per day, are required to prepare a local traffic assessment

**E. Project Traffic Generation:** Traffic volumes to be generated by the proposed project were forecast for the weekday AM and PM peak hours, and over a 24-hour period. Trip generation rates provided in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*[3] were utilized to forecast project traffic generation for the proposed project. ITE Land Use Code 220 (Multi-Family Housing [Low-Rise]) trip generation rates were used to forecast the traffic volumes expected to be generated by the proposed residential units.

The trip generation forecast for the proposed project is summarized in ***Table 2-1***. As presented in *Table 2-1*, the proposed project is expected to generate 20 vehicle trips (5 inbound trips and 15 outbound trips) during the weekday AM peak hour. During the weekday PM peak hour, the proposed project is expected to generate 26 vehicle trips (16 inbound trips and 10 outbound trips). Over a 24-hour period, the proposed project is forecast to generate 344 daily trip ends during a typical weekday (172 inbound trips and 172 outbound trips). As the proposed project is anticipated to generate 110 trips or more per day, a Local Transportation Assessment would be required for the project.

**F. Project Study Area**: The following three (3) locations have been identified for operational evaluation. See attached *Figure 1-1 –Vicinity Map.* The existing traffic control of each study location is presented below.

[3] Institute of Transportation Engineers *Trip Generation Manual*, 11th Edition, Washington, D.C., 2021.

***Study Locations***

1. Figueroa Street/Carson Street (Signalized)
2. Project Driveway/Carson Street (Unsignalized)
3. Moneta Avenue/Carson Street (Signalized)

**G. Traffic Counts:** New traffic counts will be collected at the study locations in August/September 2024, when local schools are in session. The manual intersection turning movement counts will be conducted during the weekday morning (7:00 to 9:00 AM) and afternoon (4:00 to 6:00 PM) peak commute periods for each of the study intersections identified in *Item F*.

**H. Project Trip Distribution Pattern:** See attached ***Figure 2-3 – Project Trip Distribution***.

**I. Ambient Growth Rate:** Based on review of the general traffic growth factors provided in the Los Angeles County 2010 Congestion Management Program[4] (CMP) for the project study area (i.e., RSA 19, Palos Verdes that includes the City of Carson), it is anticipated that existing traffic volumes in the vicinity are expected to increase at an annual rate of 0.2% per year between the years 2020 and 2030. An annual growth rate of one percent (1.0%) until the year 2026 (i.e., the anticipated project build-out year) will be utilized for this analysis.

**J. Level of Service Analysis:** Level of Service (LOS) calculations will be prepared for the study locations for the weekday AM and PM peak hour conditions for the following scenarios:

- Existing conditions
- Opening Year Without Project (Year 2026) conditions
- Opening Year With Project (Year 2026) conditions

Utilize City approved capacity analysis methodologies (i.e., Highway Capacity Manual method) for the Level of Service calculations. The results of these analyses will be reviewed in order to determine the project's effect on LOS at nearby intersections.

The City of Carson General Plan has established LOS D or better as the minimum operating threshold for intersections for peak hour intersection operations, except for transit priority areas/high quality transit corridors and central/neighborhood business districts where multimodal access and circulation are a critical component of local travel. In addition, locations that are currently operating at LOS E/F would be exempt from the LOS D standard. It is noted that the Figuroa Street/Carson Street intersection is included in the list of intersections that are exempt from the LOS D standard provided in the City's current Circulation Element.

**K. Local Transportation Assessment:** LLG will prepare a separate Local Transportation Assessment in report format which summarizes the above-mentioned non-CEQA site access studies, including our analysis, findings, and conclusions. The Local Transportation Assessment will be suitably documented with tables, figures, and appendix materials.

[4] Los Angeles County Metropolitan Transportation Authority (Metro) 2010 Congestion Management Program.

Please feel free to contact us at 626.796.2322 if you have any questions, comments, or suggested revisions regarding the above. Thank you.

Attachments

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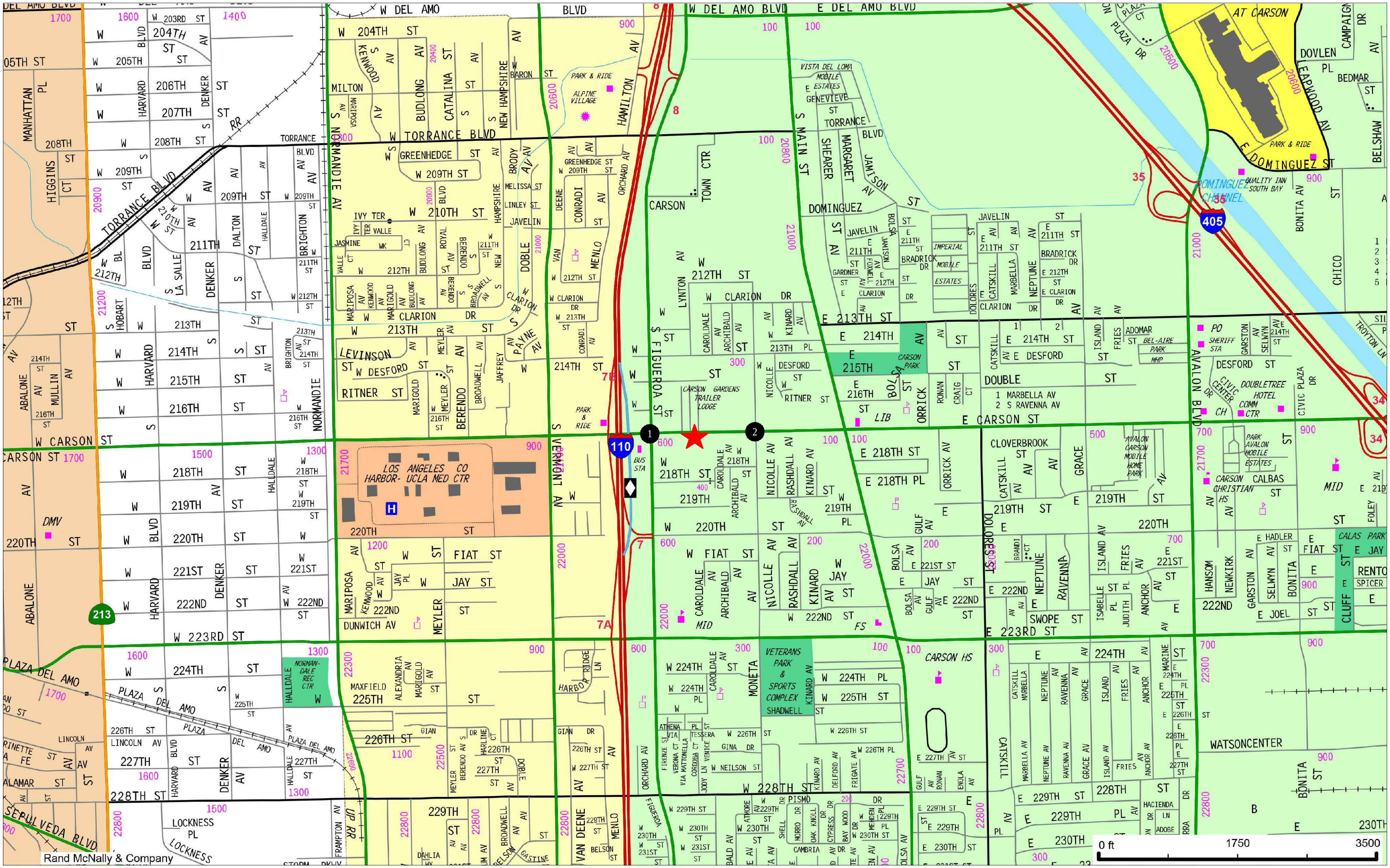



MAP SOURCE: RAND MCNALLY & COMPANY

N

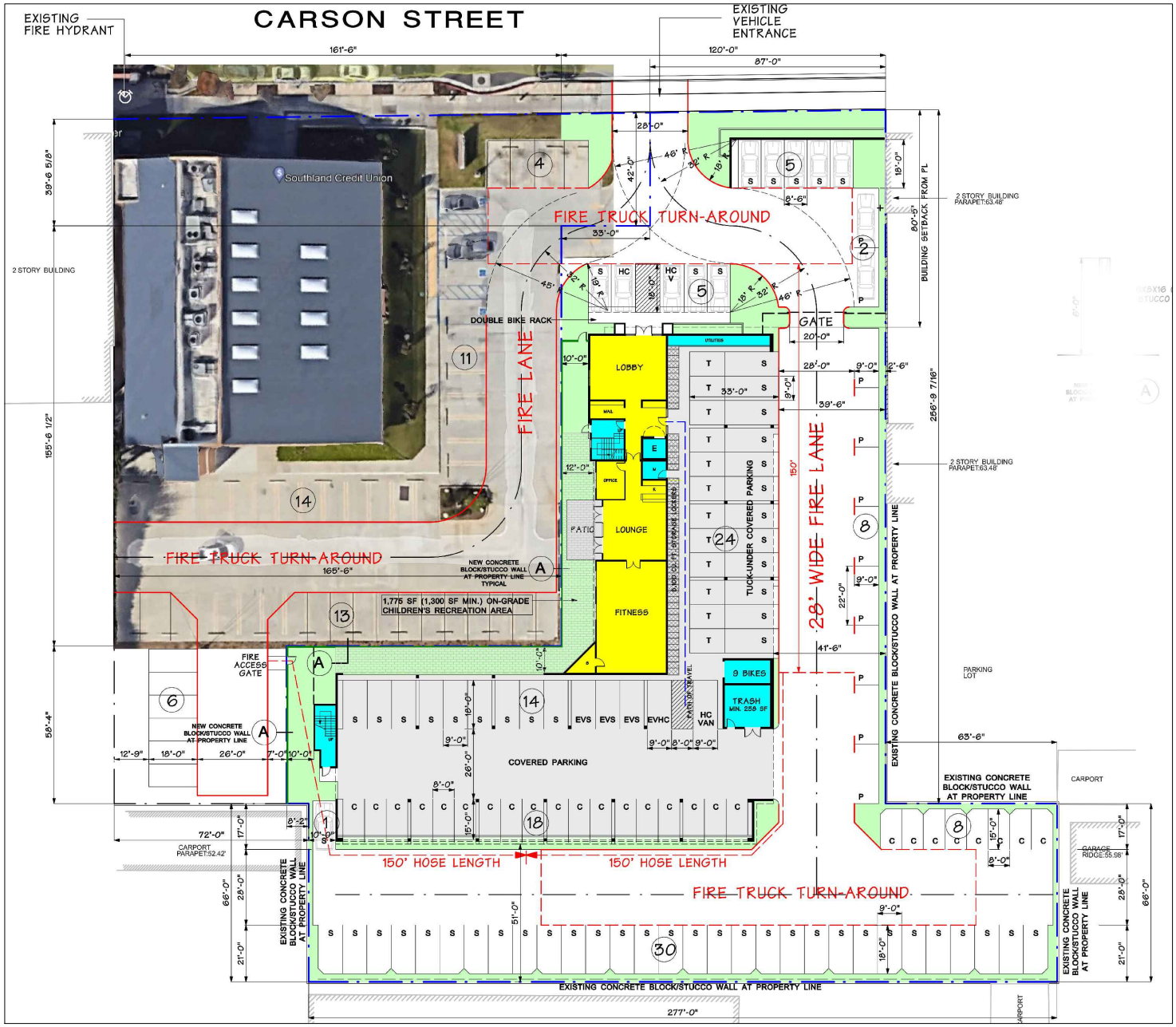
Not to Scale

Project Site

XX Study Location

# Figure 1-1
## Vicinity Map

DWB Southland Project




SOURCE: RANDY MORRIS ARCHITECT

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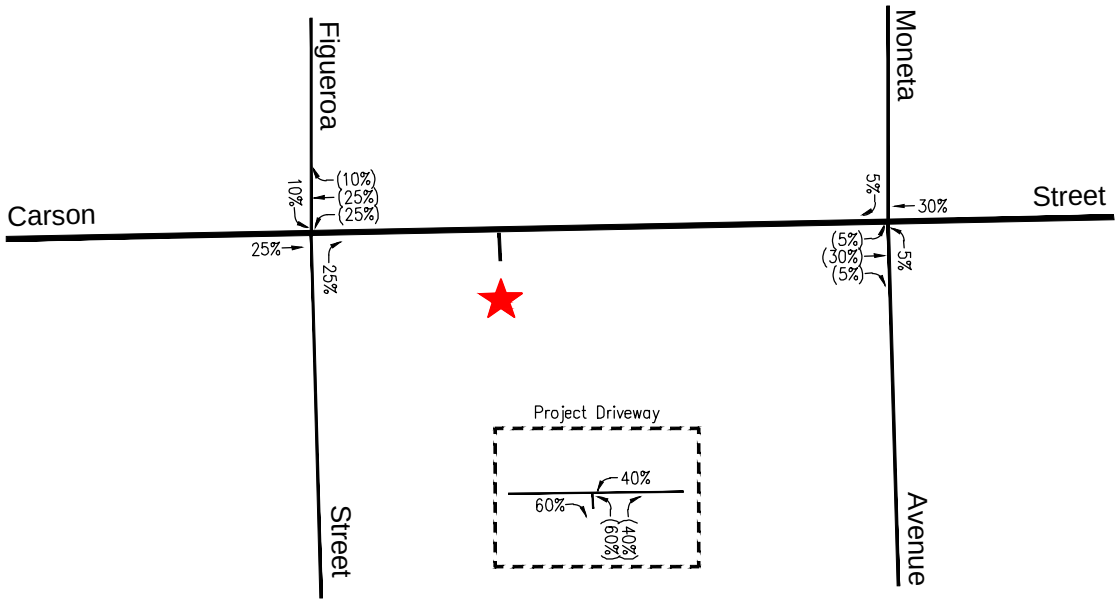
Figure 2-2
Site Plan

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Project Site

XX = Inbound Percentage

(XX) = Outbound Percentage

Figure 2-3
Project Trip Distribution

DWB Southland Project

**Table 2-1**
**PROJECT TRIP GENERATION FORECAST**

| TRIP GENERATION RATES [1] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | ITE | | | WEEKDAY AM PEAK HOUR | | | WEEKDAY PM PEAK HOUR | | |
| ITE LAND USE CATEGORY | LAND USE CODE | VARIABLE | WEEKDAY DAILY | IN (%) | OUT (%) | TOTAL | IN (%) | OUT (%) | TOTAL |
| Multifamily Housing (Low Rise) Not Close to Rail Transit | 220 | Per Dwelling Unit | 6.74 | 24% | 76% | 0.40 | 63% | 37% | 0.51 |

| PROJECT TRIP GENERATION FORECAST | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | ITE | | DAILY | AM PEAK HOUR VOLUMES [2] | | | PM PEAK HOUR VOLUMES [2] | | |
| LAND USE | LAND USE CODE | SIZE | TRIP ENDS [2] VOLUMES | IN | OUT | TOTAL | IN | OUT | TOTAL |
| ***Proposed Project*** | | | | | | | | | |
| Condominiums | 220 | 51 DU | 344 | 5 | 15 | 20 | 16 | 10 | 26 |
| ***TOTAL PROJECT TRIPS*** | | | ***344*** | ***5*** | ***15*** | ***20*** | ***16*** | ***10*** | ***26*** |

[1] Source: ITE "Trip Generation Manual", 11th Edition, 2021.
[2] Trips are one-way traffic movements, entering or leaving.

# APPENDIX B

## TRAFFIC, PEDESTRIAN, AND BICYCLE COUNT DATA

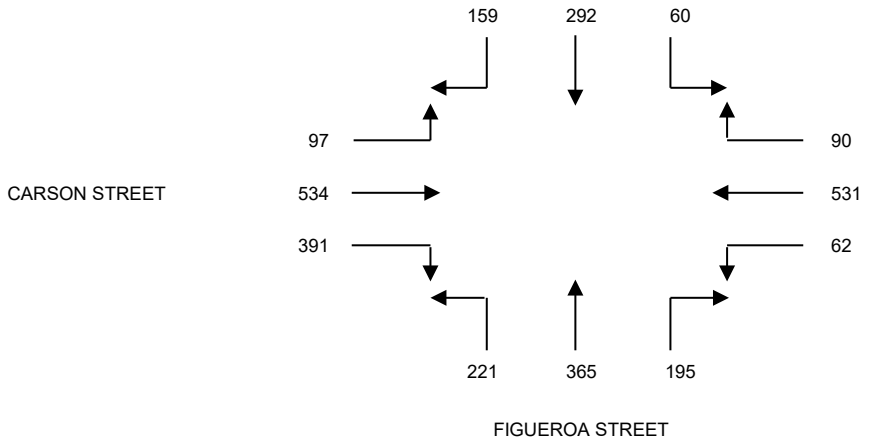
# INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: LLG - PASADENA
PROJECT: CITY OF CARSON
DATE: WEDNESDAY, SEPTEMBER 11, 2024
PERIOD: 07:00 AM TO 09:00 AM
INTERSECTION: N/S FIGUEROA STREET
E/W CARSON STREET
FILE NUMBER: 1_AM

| 15 MINUTE TOTALS | 1 SBRT | 2 SBTH | 3 SBLT | 4 WBRT | 5 WBTH | 6 WBLT | 7 NBRT | 8 NBTH | 9 NBLT | 10 EBRT | 11 EBTH | 12 EBLT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0700-0715 | 21 | 19 | 6 | 7 | 160 | 6 | 14 | 30 | 40 | 50 | 91 | 6 |
| 0715-0730 | 32 | 29 | 10 | 10 | 184 | 8 | 18 | 50 | 33 | 69 | 102 | 12 |
| 0730-0745 | 31 | 52 | 10 | 18 | 156 | 6 | 22 | 52 | 46 | 81 | 110 | 19 |
| 0745-0800 | 39 | 74 | 15 | 21 | 131 | 6 | 41 | 88 | 50 | 106 | 154 | 29 |
| 0800-0815 | 44 | 97 | 19 | 20 | 122 | 17 | 72 | 99 | 59 | 115 | 133 | 21 |
| 0815-0830 | 43 | 66 | 16 | 26 | 130 | 23 | 49 | 98 | 55 | 88 | 122 | 24 |
| 0830-0845 | 33 | 55 | 10 | 23 | 148 | 16 | 33 | 80 | 57 | 82 | 125 | 23 |
| 0845-0900 | 22 | 25 | 19 | 17 | 127 | 10 | 23 | 64 | 36 | 71 | 118 | 23 |

| 1 HOUR TOTALS | 1 SBRT | 2 SBTH | 3 SBLT | 4 WBRT | 5 WBTH | 6 WBLT | 7 NBRT | 8 NBTH | 9 NBLT | 10 EBRT | 11 EBTH | 12 EBLT | TOTALS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0700-0800 | 123 | 174 | 41 | 56 | 631 | 26 | 95 | 220 | 169 | 306 | 457 | 66 | 2364 |
| 0715-0815 | 146 | 252 | 54 | 69 | 593 | 37 | 153 | 289 | 188 | 371 | 499 | 81 | 2732 |
| 0730-0830 | 157 | 289 | 60 | 85 | 539 | 52 | 184 | 337 | 210 | 390 | 519 | 93 | 2915 |
| 0745-0845 | 159 | 292 | 60 | 90 | 531 | 62 | 195 | 365 | 221 | 391 | 534 | 97 | 2997 |
| 0800-0900 | 142 | 243 | 64 | 86 | 527 | 66 | 177 | 341 | 207 | 356 | 498 | 91 | 2798 |

A.M. PEAK HOUR
0745-0845




DATA PROVIDED BY:

THE TRAFFIC SOLUTION
329 DIAMOND STREET
ARCADIA, CALIFORNIA 91005
PH: 626-446-7978
FAX: 626-446-2877
.

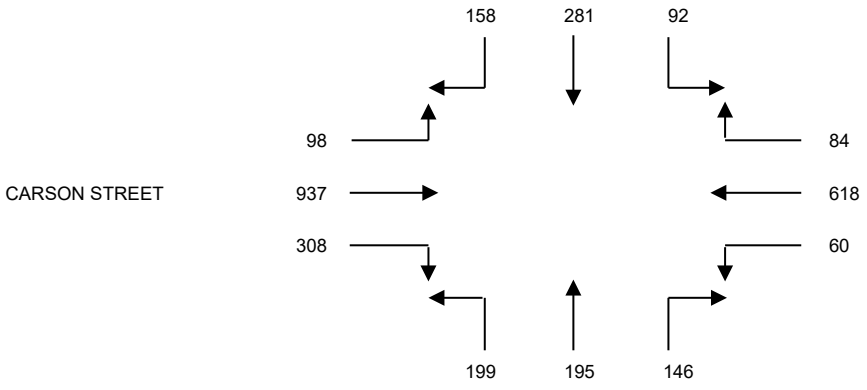
# INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: LLG - PASADENA
PROJECT: CITY OF CARSON
DATE: WEDNESDAY, SEPTEMBER 11, 2024
PERIOD: 04:00 PM TO 06:00 PM
INTERSECTION: N/S FIGUEROA STREET
E/W CARSON STREET
FILE NUMBER: 1_PM

| 15 MINUTE TOTALS | 1 SBRT | 2 SBTH | 3 SBLT | 4 WBRT | 5 WBTH | 6 WBLT | 7 NBRT | 8 NBTH | 9 NBLT | 10 EBRT | 11 EBTH | 12 EBLT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0400-0415 | 37 | 52 | 19 | 17 | 160 | 10 | 31 | 51 | 35 | 55 | 195 | 25 |
| 0415-0430 | 24 | 50 | 22 | 12 | 132 | 17 | 33 | 42 | 44 | 98 | 219 | 26 |
| 0430-0445 | 30 | 67 | 22 | 26 | 160 | 15 | 42 | 44 | 53 | 73 | 237 | 20 |
| 0445-0500 | 39 | 78 | 20 | 19 | 133 | 10 | 45 | 53 | 60 | 90 | 264 | 20 |
| 0500-0515 | 57 | 79 | 25 | 19 | 144 | 15 | 30 | 54 | 40 | 71 | 200 | 24 |
| 0515-0530 | 32 | 57 | 25 | 20 | 181 | 20 | 29 | 44 | 46 | 74 | 236 | 34 |
| 0530-0545 | 36 | 70 | 24 | 15 | 168 | 16 | 25 | 43 | 46 | 70 | 209 | 20 |
| 0545-0600 | 33 | 78 | 23 | 17 | 150 | 17 | 37 | 40 | 38 | 73 | 241 | 22 |

| 1 HOUR TOTALS | 1 SBRT | 2 SBTH | 3 SBLT | 4 WBRT | 5 WBTH | 6 WBLT | 7 NBRT | 8 NBTH | 9 NBLT | 10 EBRT | 11 EBTH | 12 EBLT | TOTALS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0400-0500 | 130 | 247 | 83 | 74 | 585 | 52 | 151 | 190 | 192 | 316 | 915 | 91 | 3026 |
| 0415-0515 | 150 | 274 | 89 | 76 | 569 | 57 | 150 | 193 | 197 | 332 | 920 | 90 | 3097 |
| 0430-0530 | 158 | 281 | 92 | 84 | 618 | 60 | 146 | 195 | 199 | 308 | 937 | 98 | 3176 |
| 0445-0545 | 164 | 284 | 94 | 73 | 626 | 61 | 129 | 194 | 192 | 305 | 909 | 98 | 3129 |
| 0500-0600 | 158 | 284 | 97 | 71 | 643 | 68 | 121 | 181 | 170 | 288 | 886 | 100 | 3067 |

P.M. PEAK HOUR
0430-0530




DATA PROVIDED BY:

THE TRAFFIC SOLUTION
329 DIAMOND STREET
ARCADIA, CALIFORNIA 91005
PH: 626-446-7978
FAX: 626-446-2877
.

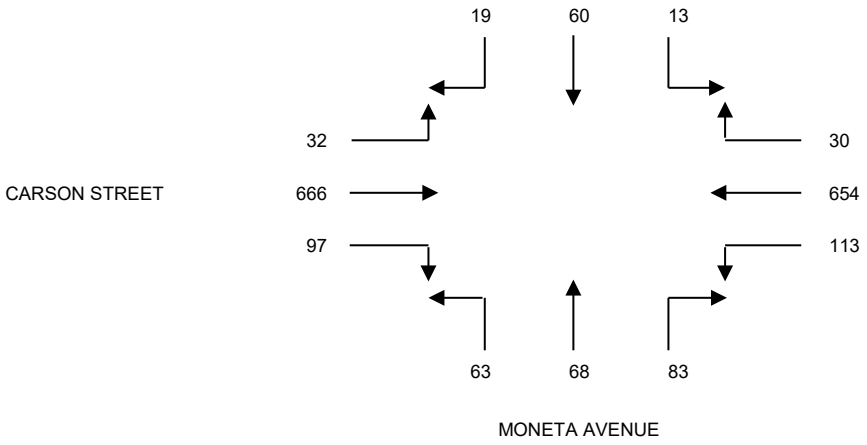
# INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: LLG - PASADENA
PROJECT: CITY OF CARSON
DATE: WEDNESDAY, SEPTEMBER 11, 2024
PERIOD: 07:00 AM TO 09:00 AM
INTERSECTION: N/S MONETA AVENUE
E/W CARSON STREET
FILE NUMBER: 2_AM

| 15 MINUTE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOTALS | SBRT | SBTH | SBLT | WBRT | WBTH | WBLT | NBRT | NBTH | NBLT | EBRT | EBTH | EBLT |
| 0700-0715 | 4 | 4 | 3 | 4 | 172 | 6 | 12 | 5 | 14 | 6 | 77 | 4 |
| 0715-0730 | 7 | 5 | 3 | 6 | 199 | 10 | 10 | 7 | 11 | 7 | 110 | 4 |
| 0730-0745 | 3 | 9 | 2 | 5 | 216 | 17 | 14 | 15 | 10 | 15 | 159 | 6 |
| 0745-0800 | 6 | 16 | 3 | 7 | 151 | 28 | 21 | 15 | 13 | 29 | 192 | 12 |
| 0800-0815 | 5 | 23 | 5 | 6 | 137 | 49 | 24 | 19 | 25 | 30 | 160 | 8 |
| 0815-0830 | 5 | 12 | 3 | 12 | 150 | 19 | 24 | 19 | 15 | 23 | 155 | 6 |
| 0830-0845 | 4 | 4 | 4 | 4 | 140 | 13 | 20 | 10 | 6 | 10 | 131 | 8 |
| 0845-0900 | 3 | 7 | 3 | 4 | 138 | 13 | 7 | 7 | 6 | 8 | 148 | 5 |

| 1 HOUR | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOTALS | SBRT | SBTH | SBLT | WBRT | WBTH | WBLT | NBRT | NBTH | NBLT | EBRT | EBTH | EBLT | TOTALS |
| 0700-0800 | 20 | 34 | 11 | 22 | 738 | 61 | 57 | 42 | 48 | 57 | 538 | 26 | 1654 |
| 0715-0815 | 21 | 53 | 13 | 24 | 703 | 104 | 69 | 56 | 59 | 81 | 621 | 30 | 1834 |
| 0730-0830 | 19 | 60 | 13 | 30 | 654 | 113 | 83 | 68 | 63 | 97 | 666 | 32 | 1898 |
| 0745-0845 | 20 | 55 | 15 | 29 | 578 | 109 | 89 | 63 | 59 | 92 | 638 | 34 | 1781 |
| 0800-0900 | 17 | 46 | 15 | 26 | 565 | 94 | 75 | 55 | 52 | 71 | 594 | 27 | 1637 |

A.M. PEAK HOUR
0730-0830




DATA PROVIDED BY:

THE TRAFFIC SOLUTION
329 DIAMOND STREET
ARCADIA, CALIFORNIA 91005
PH: 626-446-7978
FAX: 626-446-2877
.

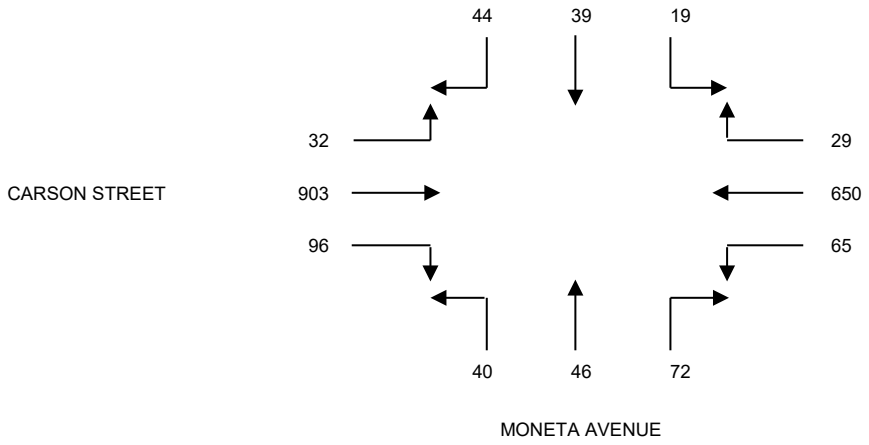
# INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: LLG - PASADENA
PROJECT: CITY OF CARSON
DATE: WEDNESDAY, SEPTEMBER 11, 2024
PERIOD: 04:00 PM TO 06:00 PM
INTERSECTION: N/S MONETA AVENUE
E/W CARSON STREET
FILE NUMBER: 1_PM

| 15 MINUTE TOTALS | 1 SBRT | 2 SBTH | 3 SBLT | 4 WBRT | 5 WBTH | 6 WBLT | 7 NBRT | 8 NBTH | 9 NBLT | 10 EBRT | 11 EBTH | 12 EBLT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0400-0415 | 7 | 5 | 5 | 5 | 156 | 17 | 26 | 18 | 17 | 29 | 220 | 6 |
| 0415-0430 | 10 | 10 | 6 | 5 | 159 | 17 | 21 | 12 | 15 | 17 | 248 | 11 |
| 0430-0445 | 11 | 6 | 4 | 5 | 133 | 17 | 11 | 10 | 11 | 12 | 225 | 10 |
| 0445-0500 | 10 | 9 | 2 | 9 | 160 | 16 | 13 | 16 | 7 | 21 | 245 | 10 |
| 0500-0515 | 12 | 12 | 7 | 7 | 148 | 15 | 21 | 10 | 8 | 23 | 208 | 6 |
| 0515-0530 | 14 | 7 | 4 | 8 | 189 | 18 | 19 | 9 | 14 | 31 | 211 | 11 |
| 0530-0545 | 8 | 11 | 6 | 5 | 153 | 16 | 19 | 11 | 11 | 21 | 239 | 5 |
| 0545-0600 | 11 | 13 | 4 | 2 | 162 | 12 | 14 | 8 | 13 | 23 | 241 | 7 |

| 1 HOUR TOTALS | 1 SBRT | 2 SBTH | 3 SBLT | 4 WBRT | 5 WBTH | 6 WBLT | 7 NBRT | 8 NBTH | 9 NBLT | 10 EBRT | 11 EBTH | 12 EBLT | TOTALS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0400-0500 | 38 | 30 | 17 | 24 | 608 | 67 | 71 | 56 | 50 | 79 | 938 | 37 | 2015 |
| 0415-0515 | 43 | 37 | 19 | 26 | 600 | 65 | 66 | 48 | 41 | 73 | 926 | 37 | 1981 |
| 0430-0530 | 47 | 34 | 17 | 29 | 630 | 66 | 64 | 45 | 40 | 87 | 889 | 37 | 1985 |
| 0445-0545 | 44 | 39 | 19 | 29 | 650 | 65 | 72 | 46 | 40 | 96 | 903 | 32 | 2035 |
| 0500-0600 | 45 | 43 | 21 | 22 | 652 | 61 | 73 | 38 | 46 | 98 | 899 | 29 | 2027 |

P.M. PEAK HOUR
0445-0545




DATA PROVIDED BY:

THE TRAFFIC SOLUTION
329 DIAMOND STREET
ARCADIA, CALIFORNIA 91005
PH: 626-446-7978
FAX: 626-446-2877
.

# DRIVEWAY COUNT SUMMARY - RESULTS

CLIENT: LLG - PASADENA
PROJECT: 510 WEST CARSON STREET, CARSON
DATE: WEDNESDAY, JULY 09, 2025
PERIOD: 07:00 AM TO 09:00 AM

FILE: DR_WED_1AM

| | 510 WEST CARSON STREET | | | |
|---|---|---|---|---|
| 15-MIN | INBOUND | | OUTBOUND | |
| PERIOD | RIGHT | LEFT | RIGHT | LEFT |
| 0700-0715 | 0 | 0 | 0 | 0 |
| 0715-0730 | 0 | 1 | 1 | 0 |
| 0730-0745 | 1 | 2 | 2 | 0 |
| 0745-0800 | 2 | 1 | 0 | 1 |
| 0800-0815 | 1 | 2 | 1 | 0 |
| 0815-0830 | 2 | 0 | 0 | 0 |
| 0830-0845 | 3 | 3 | 1 | 1 |
| 0845-0900 | 2 | 6 | 1 | 0 |

| | 510 WEST CARSON STREET | | | |
|---|---|---|---|---|
| 1-HR | INBOUND | | OUTBOUND | |
| PERIOD | RIGHT | LEFT | RIGHT | LEFT |
| 0700-0800 | 3 | 4 | 3 | 1 |
| 0715-0815 | 4 | 6 | 4 | 1 |
| 0730-0830 | 6 | 5 | 3 | 1 |
| 0745-0845 | 8 | 6 | 2 | 2 |
| 0800-0900 | 8 | 11 | 3 | 1 |

THE TRAFFIC SOLUTION
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# DRIVEWAY COUNT SUMMARY - RESULTS

CLIENT: LLG - PASADENA
PROJECT: 510 WEST CARSON STREET, CARSON
DATE: WEDNESDAY, JULY 09, 2025
PERIOD: 04:00 PM TO 06:00 PM

FILE: DR_WED_1PM

| | 510 WEST CARSON STREET | | | |
|---|---|---|---|---|
| 15-MIN | INBOUND | | OUTBOUND | |
| PERIOD | RIGHT | LEFT | RIGHT | LEFT |
| 0400-0415 | 5 | 2 | 6 | 3 |
| 0415-0430 | 7 | 4 | 8 | 4 |
| 0430-0445 | 4 | 3 | 3 | 4 |
| 0445-0500 | 2 | 2 | 4 | 4 |
| 0500-0515 | 1 | 4 | 12 | 4 |
| 0515-0530 | 1 | 3 | 5 | 0 |
| 0530-0545 | 0 | 1 | 0 | 3 |
| 0545-0600 | 0 | 2 | 3 | 0 |

| | 510 WEST CARSON STREET | | | |
|---|---|---|---|---|
| 1-HR | INBOUND | | OUTBOUND | |
| PERIOD | RIGHT | LEFT | RIGHT | LEFT |
| 0400-0500 | 18 | 11 | 21 | 15 |
| 0415-0515 | 14 | 13 | 27 | 16 |
| 0430-0530 | 8 | 12 | 24 | 12 |
| 0445-0545 | 4 | 10 | 21 | 11 |
| 0500-0600 | 2 | 10 | 20 | 7 |

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# APPENDIX C

## HCM AND LEVELS OF SERVICE EXPLANATION
## HCM DATA WORKSHEETS – WEEKDAY AM AND PM PEAK HOURS

## LEVEL OF SERVICE FOR SIGNALIZED INTERSECTIONS

In the *Highway Capacity Manual (HCM)*, published by the Transportation Research Board, level of service for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions: in the absence of traffic control, in the absence of geometric delay, in the absence of incidents, and when there are no other vehicles on the road. Only the portion of total delay attributed to the control facility is quantified. This delay is called *control delay*. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Level of Service criteria for traffic signals are stated in terms of the average control delay per vehicle. Delay is a complex measure and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the *v/c* ratio for the lane group in question.

Level of Service Criteria for Signalized Intersections

| Level of Service | Control Delay (Sec/Veh) |
|---|---|
| A | ≤ 10 |
| B | > 10 and ≤ 20 |
| C | > 20 and ≤ 35 |
| D | > 35 and ≤ 55 |
| E | > 55 and ≤ 80 |
| F | > 80 |

Level of Service (LOS) values are used to describe intersection operations with service levels varying from LOS A (free flow) to LOS F (jammed condition). The following descriptions summarize *HCM* criteria for each level of service:

**LOS A** describes operations with very low control delay, up to 10 seconds per vehicle. This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay values.

**LOS B** describes operations with control delay greater than 10 and up to 20 seconds per vehicle. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.

**LOS C** describes operations with control delay greater than 20 and up to 35 seconds per vehicle. These higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.

**LOS D** describes operations with control delay greater than 35 and up to 55 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high *v/c* ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

**LOS E** describes operations with control delay greater than 55 and up to 80 seconds per vehicle. This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high *v/c* ratios. Individual cycle failures are frequent occurrences.

**LOS F** describes operations with control delay in excess of 80 seconds per vehicle. This level, considered to be unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the lane groups. It may also occur at high *v/c* ratios with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors to such delay levels.

## LEVEL OF SERVICE FOR UNSIGNALIZED INTERSECTIONS

In the *Highway Capacity Manual (HCM)*, published by the Transportation Research Board, 2000, level of service for unsignalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, in the absence of incidents, control, traffic, or geometric delay. Only the portion of total delay attributed to the traffic control measures, either traffic signals or stop signs, is quantified. This delay is called *control delay*. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Level of Service criteria for unsignalized intersections are stated in terms of the average control delay per vehicle. The level of service is determined by the computed or measured control delay and is defined for each minor movement. Average control delay for any particular minor movement is a function of the service time for the approach and the degree of utilization. (Level of service is not defined for the intersection as a whole for two-way stop controlled intersections.)

Level of Service Criteria for TWSC/AWSC Intersections

| Level of Service | Average Control Delay (Sec/Veh) |
|---|---|
| A | ≤ 10 |
| B | > 10 and ≤ 15 |
| C | > 15 and ≤ 25 |
| D | > 25 and ≤ 35 |
| E | > 35 and ≤ 50 |
| F | > 50 |

Level of Service (LOS) values are used to describe intersection operations with service levels varying from LOS A (free flow) to LOS F (jammed condition). The following descriptions summarize *HCM* criteria for each level of service:

**LOS A** describes operations with very low control delay, up to 10 seconds per vehicle.

**LOS B** describes operations with control delay greater than 10 and up to 15 seconds per vehicle.

**LOS C** describes operations with control delay greater than 15 and up to 25 seconds per vehicle.

**LOS D** describes operations with control delay greater than 25 and up to 35 seconds per vehicle.

**LOS E** describes operations with control delay greater than 35 and up to 50 seconds per vehicle.

**LOS F** describes operations with control delay in excess of 50 seconds per vehicle. For two-way stop controlled intersections, LOS F exists when there are insufficient gaps of suitable size to allow side-street demand to safely cross through a major-street traffic stream. This level of service is generally evident from extremely long control delays experienced by side-street traffic and by queuing on the minor-street approaches.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 97 | 534 | 391 | 62 | 531 | 90 | 221 | 365 | 195 | 60 | 292 | 159 |
| Future Volume (veh/h) | 97 | 534 | 391 | 62 | 531 | 90 | 221 | 365 | 195 | 60 | 292 | 159 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width 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 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 105 | 580 | 425 | 67 | 577 | 98 | 240 | 397 | 212 | 65 | 317 | 173 |
| 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 | 144 | 1415 | 767 | 133 | 1191 | 202 | 296 | 636 | 335 | 255 | 606 | 323 |
| Arrive On Green | 0.08 | 0.40 | 0.40 | 0.15 | 0.78 | 0.78 | 0.09 | 0.28 | 0.28 | 0.07 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 1781 | 3040 | 515 | 3456 | 2248 | 1185 | 3456 | 2238 | 1194 |
| Grp Volume(v), veh/h | 105 | 580 | 425 | 67 | 337 | 338 | 240 | 313 | 296 | 65 | 250 | 240 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1781 | 1777 | 1778 | 1728 | 1777 | 1657 | 1728 | 1777 | 1655 |
| Q Serve(g_s), s | 6.9 | 14.1 | 22.7 | 4.2 | 7.9 | 8.0 | 8.2 | 18.4 | 18.7 | 2.1 | 14.3 | 14.8 |
| Cycle Q Clear(g_c), s | 6.9 | 14.1 | 22.7 | 4.2 | 7.9 | 8.0 | 8.2 | 18.4 | 18.7 | 2.1 | 14.3 | 14.8 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.29 | 1.00 | | 0.72 | 1.00 | | 0.72 |
| Lane Grp Cap(c), veh/h | 144 | 1415 | 767 | 133 | 696 | 696 | 296 | 503 | 469 | 255 | 481 | 448 |
| V/C Ratio(X) | 0.73 | 0.41 | 0.55 | 0.51 | 0.48 | 0.49 | 0.81 | 0.62 | 0.63 | 0.25 | 0.52 | 0.53 |
| Avail Cap(c_a), veh/h | 215 | 1415 | 767 | 215 | 696 | 696 | 403 | 503 | 469 | 403 | 481 | 448 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 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 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 53.9 | 26.0 | 21.8 | 49.0 | 8.8 | 8.8 | 53.9 | 37.4 | 37.6 | 52.5 | 37.1 | 37.3 |
| Incr Delay (d2), s/veh | 2.6 | 0.9 | 2.9 | 1.1 | 2.4 | 2.4 | 6.1 | 2.8 | 3.2 | 0.2 | 4.0 | 4.5 |
| 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(95%),veh/ln | 5.7 | 10.1 | 13.5 | 3.3 | 4.8 | 4.8 | 6.7 | 12.9 | 12.4 | 1.7 | 10.8 | 10.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 56.5 | 26.9 | 24.7 | 50.1 | 11.2 | 11.2 | 60.0 | 40.2 | 40.8 | 52.7 | 41.1 | 41.8 |
| LnGrp LOS | E | C | C | D | B | B | E | D | D | D | D | D |
| Approach Vol, veh/h | | 1110 | | | 742 | | | 849 | | | 555 | |
| Approach Delay, s/veh | | 28.8 | | | 14.7 | | | 46.0 | | | 42.8 | |
| Approach LOS | | C | | | B | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 13.4 | 53.3 | 13.9 | 39.4 | 14.2 | 52.5 | 15.3 | 38.0 |
| Change Period (Y+Rc), s | 4.5 | 5.5 | 5.0 | 5.5 | 4.5 | 5.5 | 5.0 | 5.5 |
| Max Green Setting (Gmax), s | 14.5 | 38.5 | 14.0 | 32.5 | 14.5 | 38.5 | 14.0 | 32.5 |
| Max Q Clear Time (g_c+I1), s | 6.2 | 24.7 | 4.1 | 20.7 | 8.9 | 10.0 | 10.2 | 16.8 |
| Green Ext Time (p_c), s | 0.0 | 6.3 | 0.0 | 3.7 | 0.0 | 6.4 | 0.1 | 3.4 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 32.5 |
| HCM 7th LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 98 | 937 | 308 | 60 | 618 | 84 | 199 | 195 | 146 | 92 | 281 | 158 |
| Future Volume (veh/h) | 98 | 937 | 308 | 60 | 618 | 84 | 199 | 195 | 146 | 92 | 281 | 158 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width 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 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 102 | 976 | 321 | 62 | 644 | 88 | 207 | 203 | 152 | 96 | 293 | 165 |
| 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, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 143 | 1459 | 783 | 130 | 1266 | 173 | 288 | 527 | 375 | 276 | 581 | 319 |
| Arrive On Green | 0.08 | 0.41 | 0.41 | 0.07 | 0.40 | 0.40 | 0.08 | 0.27 | 0.27 | 0.08 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 1781 | 3141 | 429 | 3456 | 1982 | 1411 | 3456 | 2214 | 1214 |
| Grp Volume(v), veh/h | 102 | 976 | 321 | 62 | 364 | 368 | 207 | 181 | 174 | 96 | 234 | 224 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1781 | 1777 | 1793 | 1728 | 1777 | 1616 | 1728 | 1777 | 1652 |
| Q Serve(g_s), s | 6.7 | 26.8 | 15.4 | 4.0 | 18.5 | 18.5 | 7.0 | 10.0 | 10.6 | 3.2 | 13.4 | 13.9 |
| Cycle Q Clear(g_c), s | 6.7 | 26.8 | 15.4 | 4.0 | 18.5 | 18.5 | 7.0 | 10.0 | 10.6 | 3.2 | 13.4 | 13.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.24 | 1.00 | | 0.87 | 1.00 | | 0.74 |
| Lane Grp Cap(c), veh/h | 143 | 1459 | 783 | 130 | 716 | 722 | 288 | 472 | 430 | 276 | 466 | 434 |
| V/C Ratio(X) | 0.71 | 0.67 | 0.41 | 0.48 | 0.51 | 0.51 | 0.72 | 0.38 | 0.41 | 0.35 | 0.50 | 0.52 |
| Avail Cap(c_a), veh/h | 260 | 1459 | 783 | 260 | 716 | 722 | 403 | 481 | 438 | 403 | 466 | 434 |
| 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 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 53.8 | 28.7 | 19.3 | 53.4 | 26.9 | 26.9 | 53.6 | 36.0 | 36.2 | 52.2 | 37.6 | 37.8 |
| Incr Delay (d2), s/veh | 2.4 | 2.5 | 1.6 | 1.0 | 2.6 | 2.6 | 1.7 | 0.7 | 0.9 | 0.3 | 3.8 | 4.4 |
| 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(95%),veh/ln | 5.5 | 17.2 | 9.7 | 3.3 | 12.9 | 13.0 | 5.5 | 7.8 | 7.6 | 2.5 | 10.3 | 10.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 56.2 | 31.2 | 20.9 | 54.5 | 29.5 | 29.5 | 55.3 | 36.7 | 37.1 | 52.5 | 41.4 | 42.1 |
| LnGrp LOS | E | C | C | D | C | C | E | D | D | D | D | D |
| Approach Vol, veh/h | | 1399 | | | 794 | | | 562 | | | 554 | |
| Approach Delay, s/veh | | 30.6 | | | 31.4 | | | 43.7 | | | 43.6 | |
| Approach LOS | | C | | | C | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 13.2 | 54.8 | 14.6 | 37.4 | 14.2 | 53.8 | 15.0 | 37.0 |
| Change Period (Y+Rc), s | 4.5 | 5.5 | 5.0 | * 5.5 | 4.5 | 5.5 | 5.0 | 5.5 |
| Max Green Setting (Gmax), s | 17.5 | 36.5 | 14.0 | * 33 | 17.5 | 36.5 | 14.0 | 31.5 |
| Max Q Clear Time (g_c+I1), s | 6.0 | 28.8 | 5.2 | 12.6 | 8.7 | 20.5 | 9.0 | 15.9 |
| Green Ext Time (p_c), s | 0.0 | 5.4 | 0.1 | 2.7 | 0.0 | 5.5 | 0.1 | 3.2 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 35.2 |
| HCM 7th LOS | D |

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 99 | 545 | 399 | 63 | 542 | 92 | 225 | 372 | 199 | 61 | 298 | 162 |
| Future Volume (veh/h) | 99 | 545 | 399 | 63 | 542 | 92 | 225 | 372 | 199 | 61 | 298 | 162 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width 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 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 108 | 592 | 434 | 68 | 589 | 100 | 245 | 404 | 216 | 66 | 324 | 176 |
| 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 | 144 | 1409 | 767 | 133 | 1186 | 201 | 301 | 638 | 337 | 256 | 607 | 323 |
| Arrive On Green | 0.08 | 0.40 | 0.40 | 0.15 | 0.78 | 0.78 | 0.09 | 0.28 | 0.28 | 0.07 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 1781 | 3040 | 515 | 3456 | 2247 | 1187 | 3456 | 2241 | 1191 |
| Grp Volume(v), veh/h | 108 | 592 | 434 | 68 | 344 | 345 | 245 | 319 | 301 | 66 | 255 | 245 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1781 | 1777 | 1778 | 1728 | 1777 | 1657 | 1728 | 1777 | 1656 |
| Q Serve(g_s), s | 7.1 | 14.5 | 23.4 | 4.2 | 8.3 | 8.4 | 8.4 | 18.8 | 19.1 | 2.2 | 14.7 | 15.2 |
| Cycle Q Clear(g_c), s | 7.1 | 14.5 | 23.4 | 4.2 | 8.3 | 8.4 | 8.4 | 18.8 | 19.1 | 2.2 | 14.7 | 15.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.29 | 1.00 | | 0.72 | 1.00 | | 0.72 |
| Lane Grp Cap(c), veh/h | 144 | 1409 | 767 | 133 | 693 | 693 | 301 | 505 | 470 | 256 | 481 | 448 |
| V/C Ratio(X) | 0.75 | 0.42 | 0.57 | 0.51 | 0.50 | 0.50 | 0.81 | 0.63 | 0.64 | 0.26 | 0.53 | 0.55 |
| Avail Cap(c_a), veh/h | 215 | 1409 | 767 | 215 | 693 | 693 | 403 | 505 | 470 | 403 | 481 | 448 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 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 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 53.9 | 26.2 | 22.0 | 49.0 | 9.0 | 9.0 | 53.8 | 37.5 | 37.6 | 52.4 | 37.3 | 37.4 |
| Incr Delay (d2), s/veh | 3.0 | 0.9 | 3.0 | 1.1 | 2.5 | 2.5 | 6.7 | 2.9 | 3.4 | 0.2 | 4.1 | 4.7 |
| 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(95%),veh/ln | 5.9 | 10.3 | 13.8 | 3.3 | 5.0 | 5.0 | 6.9 | 13.1 | 12.7 | 1.7 | 11.1 | 10.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 56.9 | 27.2 | 25.0 | 50.1 | 11.5 | 11.5 | 60.5 | 40.4 | 41.0 | 52.6 | 41.4 | 42.1 |
| LnGrp LOS | E | C | C | D | B | B | E | D | D | D | D | D |
| Approach Vol, veh/h | | 1134 | | | 757 | | | 865 | | | 566 | |
| Approach Delay, s/veh | | 29.2 | | | 15.0 | | | 46.3 | | | 43.0 | |
| Approach LOS | | C | | | B | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 13.5 | 53.1 | 13.9 | 39.6 | 14.2 | 52.3 | 15.5 | 38.0 |
| Change Period (Y+Rc), s | 4.5 | 5.5 | 5.0 | 5.5 | 4.5 | 5.5 | 5.0 | 5.5 |
| Max Green Setting (Gmax), s | 14.5 | 38.5 | 14.0 | 32.5 | 14.5 | 38.5 | 14.0 | 32.5 |
| Max Q Clear Time (g_c+I1), s | 6.2 | 25.4 | 4.2 | 21.1 | 9.1 | 10.4 | 10.4 | 17.2 |
| Green Ext Time (p_c), s | 0.0 | 6.2 | 0.0 | 3.7 | 0.0 | 6.5 | 0.1 | 3.5 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 32.8 |
| HCM 7th LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 100 | 956 | 314 | 61 | 630 | 86 | 203 | 199 | 149 | 94 | 287 | 161 |
| Future Volume (veh/h) | 100 | 956 | 314 | 61 | 630 | 86 | 203 | 199 | 149 | 94 | 287 | 161 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width 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 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 104 | 996 | 327 | 64 | 656 | 90 | 211 | 207 | 155 | 98 | 299 | 168 |
| 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, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 144 | 1457 | 782 | 131 | 1264 | 173 | 288 | 526 | 375 | 277 | 582 | 318 |
| Arrive On Green | 0.08 | 0.41 | 0.41 | 0.07 | 0.40 | 0.40 | 0.08 | 0.27 | 0.27 | 0.08 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 1781 | 3140 | 430 | 3456 | 1981 | 1412 | 3456 | 2216 | 1213 |
| Grp Volume(v), veh/h | 104 | 996 | 327 | 64 | 371 | 375 | 211 | 185 | 177 | 98 | 238 | 229 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1781 | 1777 | 1793 | 1728 | 1777 | 1616 | 1728 | 1777 | 1652 |
| Q Serve(g_s), s | 6.8 | 27.6 | 15.8 | 4.1 | 18.9 | 19.0 | 7.2 | 10.2 | 10.9 | 3.2 | 13.7 | 14.2 |
| Cycle Q Clear(g_c), s | 6.8 | 27.6 | 15.8 | 4.1 | 18.9 | 19.0 | 7.2 | 10.2 | 10.9 | 3.2 | 13.7 | 14.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.24 | 1.00 | | 0.87 | 1.00 | | 0.73 |
| Lane Grp Cap(c), veh/h | 144 | 1457 | 782 | 131 | 715 | 722 | 288 | 472 | 429 | 277 | 466 | 434 |
| V/C Ratio(X) | 0.72 | 0.68 | 0.42 | 0.49 | 0.52 | 0.52 | 0.73 | 0.39 | 0.41 | 0.35 | 0.51 | 0.53 |
| Avail Cap(c_a), veh/h | 260 | 1457 | 782 | 260 | 715 | 722 | 403 | 481 | 438 | 403 | 466 | 434 |
| 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 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 53.8 | 29.0 | 19.4 | 53.4 | 27.1 | 27.1 | 53.7 | 36.1 | 36.4 | 52.2 | 37.7 | 37.9 |
| Incr Delay (d2), s/veh | 2.6 | 2.6 | 1.6 | 1.0 | 2.7 | 2.7 | 2.1 | 0.8 | 0.9 | 0.3 | 4.0 | 4.5 |
| 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(95%),veh/ln | 5.7 | 17.7 | 9.9 | 3.4 | 13.2 | 13.3 | 5.7 | 7.9 | 7.7 | 2.5 | 10.5 | 10.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 56.4 | 31.6 | 21.1 | 54.5 | 29.7 | 29.7 | 55.8 | 36.9 | 37.3 | 52.5 | 41.6 | 42.4 |
| LnGrp LOS | E | C | C | D | C | C | E | D | D | D | D | D |
| Approach Vol, veh/h | | 1427 | | | 810 | | | 573 | | | 565 | |
| Approach Delay, s/veh | | 31.0 | | | 31.7 | | | 44.0 | | | 43.8 | |
| Approach LOS | | C | | | C | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 13.3 | 54.7 | 14.6 | 37.4 | 14.2 | 53.8 | 15.0 | 37.0 |
| Change Period (Y+Rc), s | 4.5 | 5.5 | 5.0 | * 5.5 | 4.5 | 5.5 | 5.0 | 5.5 |
| Max Green Setting (Gmax), s | 17.5 | 36.5 | 14.0 | * 33 | 17.5 | 36.5 | 14.0 | 31.5 |
| Max Q Clear Time (g_c+I1), s | 6.1 | 29.6 | 5.2 | 12.9 | 8.8 | 21.0 | 9.2 | 16.2 |
| Green Ext Time (p_c), s | 0.0 | 5.0 | 0.1 | 2.7 | 0.0 | 5.5 | 0.1 | 3.2 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 35.5 |
| HCM 7th LOS | D |

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 99 | 546 | 399 | 67 | 546 | 94 | 225 | 372 | 200 | 62 | 298 | 162 |
| Future Volume (veh/h) | 99 | 546 | 399 | 67 | 546 | 94 | 225 | 372 | 200 | 62 | 298 | 162 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width 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 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 108 | 593 | 434 | 73 | 593 | 102 | 245 | 404 | 217 | 67 | 324 | 176 |
| 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 | 144 | 1404 | 764 | 135 | 1183 | 203 | 301 | 636 | 338 | 257 | 607 | 323 |
| Arrive On Green | 0.08 | 0.40 | 0.40 | 0.15 | 0.78 | 0.78 | 0.09 | 0.28 | 0.28 | 0.07 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 1781 | 3033 | 520 | 3456 | 2243 | 1190 | 3456 | 2241 | 1191 |
| Grp Volume(v), veh/h | 108 | 593 | 434 | 73 | 347 | 348 | 245 | 319 | 302 | 67 | 255 | 245 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1781 | 1777 | 1777 | 1728 | 1777 | 1656 | 1728 | 1777 | 1656 |
| Q Serve(g_s), s | 7.1 | 14.5 | 23.4 | 4.5 | 8.4 | 8.5 | 8.4 | 18.8 | 19.2 | 2.2 | 14.7 | 15.2 |
| Cycle Q Clear(g_c), s | 7.1 | 14.5 | 23.4 | 4.5 | 8.4 | 8.5 | 8.4 | 18.8 | 19.2 | 2.2 | 14.7 | 15.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.29 | 1.00 | | 0.72 | 1.00 | | 0.72 |
| Lane Grp Cap(c), veh/h | 144 | 1404 | 764 | 135 | 693 | 693 | 301 | 504 | 470 | 257 | 481 | 448 |
| V/C Ratio(X) | 0.75 | 0.42 | 0.57 | 0.54 | 0.50 | 0.50 | 0.81 | 0.63 | 0.64 | 0.26 | 0.53 | 0.55 |
| Avail Cap(c_a), veh/h | 215 | 1404 | 764 | 215 | 693 | 693 | 403 | 504 | 470 | 403 | 481 | 448 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 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 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 53.9 | 26.4 | 22.1 | 48.9 | 9.0 | 9.0 | 53.8 | 37.5 | 37.7 | 52.4 | 37.3 | 37.4 |
| Incr Delay (d2), s/veh | 3.0 | 0.9 | 3.0 | 1.2 | 2.6 | 2.6 | 6.7 | 3.0 | 3.4 | 0.2 | 4.1 | 4.7 |
| 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(95%),veh/ln | 5.9 | 10.3 | 13.9 | 3.6 | 5.1 | 5.1 | 6.9 | 13.2 | 12.7 | 1.7 | 11.1 | 10.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 56.9 | 27.3 | 25.2 | 50.2 | 11.5 | 11.6 | 60.5 | 40.5 | 41.1 | 52.6 | 41.4 | 42.1 |
| LnGrp LOS | E | C | C | D | B | B | E | D | D | D | D | D |
| Approach Vol, veh/h | | 1135 | | | 768 | | | 866 | | | 567 | |
| Approach Delay, s/veh | | 29.3 | | | 15.2 | | | 46.4 | | | 43.0 | |
| Approach LOS | | C | | | B | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 13.6 | 52.9 | 13.9 | 39.5 | 14.2 | 52.3 | 15.5 | 38.0 |
| Change Period (Y+Rc), s | 4.5 | 5.5 | 5.0 | 5.5 | 4.5 | 5.5 | 5.0 | 5.5 |
| Max Green Setting (Gmax), s | 14.5 | 38.5 | 14.0 | 32.5 | 14.5 | 38.5 | 14.0 | 32.5 |
| Max Q Clear Time (g_c+I1), s | 6.5 | 25.4 | 4.2 | 21.2 | 9.1 | 10.5 | 10.4 | 17.2 |
| Green Ext Time (p_c), s | 0.0 | 6.2 | 0.0 | 3.7 | 0.0 | 6.6 | 0.1 | 3.5 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 32.8 |
| HCM 7th LOS | C |

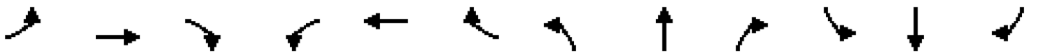
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 100 | 960 | 314 | 64 | 633 | 87 | 203 | 199 | 153 | 96 | 287 | 161 |
| Future Volume (veh/h) | 100 | 960 | 314 | 64 | 633 | 87 | 203 | 199 | 153 | 96 | 287 | 161 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width 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 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 104 | 1000 | 327 | 67 | 659 | 91 | 211 | 207 | 159 | 100 | 299 | 168 |
| 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, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 144 | 1453 | 780 | 133 | 1263 | 174 | 288 | 520 | 380 | 278 | 582 | 318 |
| Arrive On Green | 0.08 | 0.41 | 0.41 | 0.07 | 0.40 | 0.40 | 0.08 | 0.27 | 0.27 | 0.08 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 1781 | 3137 | 433 | 3456 | 1958 | 1431 | 3456 | 2216 | 1213 |
| Grp Volume(v), veh/h | 104 | 1000 | 327 | 67 | 373 | 377 | 211 | 187 | 179 | 100 | 238 | 229 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1781 | 1777 | 1792 | 1728 | 1777 | 1613 | 1728 | 1777 | 1652 |
| Q Serve(g_s), s | 6.8 | 27.8 | 15.8 | 4.3 | 19.0 | 19.1 | 7.2 | 10.4 | 11.0 | 3.3 | 13.7 | 14.2 |
| Cycle Q Clear(g_c), s | 6.8 | 27.8 | 15.8 | 4.3 | 19.0 | 19.1 | 7.2 | 10.4 | 11.0 | 3.3 | 13.7 | 14.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.24 | 1.00 | | 0.89 | 1.00 | | 0.73 |
| Lane Grp Cap(c), veh/h | 144 | 1453 | 780 | 133 | 715 | 722 | 288 | 472 | 428 | 278 | 466 | 434 |
| V/C Ratio(X) | 0.72 | 0.69 | 0.42 | 0.51 | 0.52 | 0.52 | 0.73 | 0.40 | 0.42 | 0.36 | 0.51 | 0.53 |
| Avail Cap(c_a), veh/h | 260 | 1453 | 780 | 260 | 715 | 722 | 403 | 481 | 437 | 403 | 466 | 434 |
| 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 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 53.8 | 29.2 | 19.5 | 53.4 | 27.1 | 27.1 | 53.7 | 36.2 | 36.4 | 52.3 | 37.7 | 37.9 |
| Incr Delay (d2), s/veh | 2.6 | 2.7 | 1.7 | 1.1 | 2.7 | 2.7 | 2.1 | 0.8 | 0.9 | 0.3 | 4.0 | 4.5 |
| 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(95%),veh/ln | 5.7 | 17.8 | 10.0 | 3.6 | 13.2 | 13.4 | 5.7 | 8.0 | 7.8 | 2.6 | 10.5 | 10.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 56.4 | 31.8 | 21.1 | 54.5 | 29.8 | 29.8 | 55.8 | 37.0 | 37.4 | 52.5 | 41.6 | 42.4 |
| LnGrp LOS | E | C | C | D | C | C | E | D | D | D | D | D |
| Approach Vol, veh/h | | 1431 | | | 817 | | | 577 | | | 567 | |
| Approach Delay, s/veh | | 31.2 | | | 31.8 | | | 44.0 | | | 43.9 | |
| Approach LOS | | C | | | C | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 13.4 | 54.6 | 14.6 | 37.3 | 14.2 | 53.8 | 15.0 | 37.0 |
| Change Period (Y+Rc), s | 4.5 | 5.5 | 5.0 | * 5.5 | 4.5 | 5.5 | 5.0 | 5.5 |
| Max Green Setting (Gmax), s | 17.5 | 36.5 | 14.0 | * 33 | 17.5 | 36.5 | 14.0 | 31.5 |
| Max Q Clear Time (g_c+I1), s | 6.3 | 29.8 | 5.3 | 13.0 | 8.8 | 21.1 | 9.2 | 16.2 |
| Green Ext Time (p_c), s | 0.0 | 4.9 | 0.1 | 2.7 | 0.0 | 5.5 | 0.1 | 3.2 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 35.6 |
| HCM 7th LOS | D |

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 102 | 613 | 467 | 63 | 637 | 92 | 271 | 374 | 199 | 81 | 298 | 162 |
| Future Volume (veh/h) | 102 | 613 | 467 | 63 | 637 | 92 | 271 | 374 | 199 | 81 | 298 | 162 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width 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 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 111 | 666 | 508 | 68 | 692 | 100 | 295 | 407 | 216 | 88 | 324 | 176 |
| 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 | 145 | 1359 | 767 | 133 | 1171 | 169 | 350 | 661 | 346 | 273 | 607 | 323 |
| Arrive On Green | 0.08 | 0.38 | 0.38 | 0.15 | 0.75 | 0.75 | 0.10 | 0.29 | 0.29 | 0.08 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 1781 | 3116 | 450 | 3456 | 2253 | 1182 | 3456 | 2241 | 1191 |
| Grp Volume(v), veh/h | 111 | 666 | 508 | 68 | 394 | 398 | 295 | 320 | 303 | 88 | 255 | 245 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1781 | 1777 | 1789 | 1728 | 1777 | 1658 | 1728 | 1777 | 1656 |
| Q Serve(g_s), s | 7.3 | 17.1 | 29.2 | 4.2 | 11.9 | 11.9 | 10.1 | 18.6 | 19.0 | 2.9 | 14.7 | 15.2 |
| Cycle Q Clear(g_c), s | 7.3 | 17.1 | 29.2 | 4.2 | 11.9 | 11.9 | 10.1 | 18.6 | 19.0 | 2.9 | 14.7 | 15.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.25 | 1.00 | | 0.71 | 1.00 | | 0.72 |
| Lane Grp Cap(c), veh/h | 145 | 1359 | 767 | 133 | 668 | 672 | 350 | 521 | 486 | 273 | 481 | 448 |
| V/C Ratio(X) | 0.77 | 0.49 | 0.66 | 0.51 | 0.59 | 0.59 | 0.84 | 0.61 | 0.62 | 0.32 | 0.53 | 0.55 |
| Avail Cap(c_a), veh/h | 215 | 1359 | 767 | 215 | 668 | 672 | 403 | 521 | 486 | 403 | 481 | 448 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 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 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 54.0 | 28.2 | 23.5 | 49.0 | 10.8 | 10.8 | 53.0 | 36.6 | 36.7 | 52.2 | 37.3 | 37.4 |
| Incr Delay (d2), s/veh | 4.3 | 1.3 | 4.5 | 1.1 | 3.8 | 3.8 | 12.0 | 2.5 | 2.9 | 0.3 | 4.1 | 4.7 |
| 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(95%),veh/ln | 6.2 | 11.9 | 16.8 | 3.3 | 6.8 | 6.8 | 8.5 | 13.0 | 12.5 | 2.2 | 11.1 | 10.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 58.3 | 29.4 | 28.0 | 50.1 | 14.6 | 14.6 | 64.9 | 39.1 | 39.6 | 52.5 | 41.4 | 42.1 |
| LnGrp LOS | E | C | C | D | B | B | E | D | D | D | D | D |
| Approach Vol, veh/h | | 1285 | | | 860 | | | 918 | | | 588 | |
| Approach Delay, s/veh | | 31.4 | | | 17.4 | | | 47.6 | | | 43.4 | |
| Approach LOS | | C | | | B | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 13.5 | 51.4 | 14.5 | 40.7 | 14.3 | 50.6 | 17.2 | 38.0 |
| Change Period (Y+Rc), s | 4.5 | 5.5 | 5.0 | 5.5 | 4.5 | 5.5 | 5.0 | 5.5 |
| Max Green Setting (Gmax), s | 14.5 | 38.5 | 14.0 | 32.5 | 14.5 | 38.5 | 14.0 | 32.5 |
| Max Q Clear Time (g_c+I1), s | 6.2 | 31.2 | 4.9 | 21.0 | 9.3 | 13.9 | 12.1 | 17.2 |
| Green Ext Time (p_c), s | 0.0 | 4.6 | 0.0 | 3.8 | 0.0 | 7.3 | 0.1 | 3.5 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 34.1 |
| HCM 7th LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 118 | 1065 | 488 | 61 | 705 | 86 | 242 | 209 | 149 | 101 | 287 | 161 |
| Future Volume (veh/h) | 118 | 1065 | 488 | 61 | 705 | 86 | 242 | 209 | 149 | 101 | 287 | 161 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width 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 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 123 | 1109 | 508 | 64 | 734 | 90 | 252 | 218 | 155 | 105 | 299 | 168 |
| 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, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 149 | 1436 | 782 | 131 | 1255 | 154 | 308 | 548 | 373 | 279 | 582 | 318 |
| Arrive On Green | 0.08 | 0.40 | 0.40 | 0.07 | 0.39 | 0.39 | 0.09 | 0.27 | 0.27 | 0.08 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 1781 | 3186 | 391 | 3456 | 2024 | 1376 | 3456 | 2216 | 1213 |
| Grp Volume(v), veh/h | 123 | 1109 | 508 | 64 | 409 | 415 | 252 | 190 | 183 | 105 | 238 | 229 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1781 | 1777 | 1800 | 1728 | 1777 | 1623 | 1728 | 1777 | 1652 |
| Q Serve(g_s), s | 8.2 | 32.4 | 28.7 | 4.1 | 21.8 | 21.8 | 8.6 | 10.5 | 11.1 | 3.5 | 13.7 | 14.2 |
| Cycle Q Clear(g_c), s | 8.2 | 32.4 | 28.7 | 4.1 | 21.8 | 21.8 | 8.6 | 10.5 | 11.1 | 3.5 | 13.7 | 14.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.22 | 1.00 | | 0.85 | 1.00 | | 0.73 |
| Lane Grp Cap(c), veh/h | 149 | 1436 | 782 | 131 | 700 | 709 | 308 | 481 | 440 | 279 | 466 | 434 |
| V/C Ratio(X) | 0.83 | 0.77 | 0.65 | 0.49 | 0.58 | 0.59 | 0.82 | 0.40 | 0.42 | 0.38 | 0.51 | 0.53 |
| Avail Cap(c_a), veh/h | 260 | 1436 | 782 | 260 | 700 | 709 | 403 | 481 | 440 | 403 | 466 | 434 |
| 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 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 54.1 | 31.0 | 22.7 | 53.4 | 28.6 | 28.6 | 53.7 | 35.7 | 35.9 | 52.3 | 37.7 | 37.9 |
| Incr Delay (d2), s/veh | 4.3 | 4.1 | 4.2 | 1.0 | 3.6 | 3.5 | 7.4 | 0.7 | 0.9 | 0.3 | 4.0 | 4.5 |
| 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(95%),veh/ln | 6.8 | 20.5 | 16.5 | 3.4 | 14.9 | 15.1 | 7.2 | 8.1 | 7.9 | 2.7 | 10.5 | 10.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 58.5 | 35.1 | 26.8 | 54.5 | 32.2 | 32.2 | 61.1 | 36.5 | 36.8 | 52.6 | 41.6 | 42.4 |
| LnGrp LOS | E | D | C | D | C | C | E | D | D | D | D | D |
| Approach Vol, veh/h | | 1740 | | | 888 | | | 625 | | | 572 | |
| Approach Delay, s/veh | | 34.3 | | | 33.8 | | | 46.5 | | | 44.0 | |
| Approach LOS | | C | | | C | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 13.3 | 54.0 | 14.7 | 38.0 | 14.5 | 52.8 | 15.7 | 37.0 |
| Change Period (Y+Rc), s | 4.5 | 5.5 | 5.0 | * 5.5 | 4.5 | 5.5 | 5.0 | 5.5 |
| Max Green Setting (Gmax), s | 17.5 | 36.5 | 14.0 | * 33 | 17.5 | 36.5 | 14.0 | 31.5 |
| Max Q Clear Time (g_c+I1), s | 6.1 | 34.4 | 5.5 | 13.1 | 10.2 | 23.8 | 10.6 | 16.2 |
| Green Ext Time (p_c), s | 0.0 | 1.8 | 0.1 | 2.8 | 0.0 | 5.5 | 0.1 | 3.2 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 37.6 |
| HCM 7th LOS | D |

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 102 | 614 | 467 | 67 | 641 | 94 | 271 | 374 | 200 | 82 | 298 | 162 |
| Future Volume (veh/h) | 102 | 614 | 467 | 67 | 641 | 94 | 271 | 374 | 200 | 82 | 298 | 162 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width 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 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 111 | 667 | 508 | 73 | 697 | 102 | 295 | 407 | 217 | 89 | 324 | 176 |
| 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 | 145 | 1354 | 764 | 135 | 1169 | 171 | 350 | 659 | 347 | 273 | 607 | 323 |
| Arrive On Green | 0.08 | 0.38 | 0.38 | 0.15 | 0.75 | 0.75 | 0.10 | 0.29 | 0.29 | 0.08 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 1781 | 3111 | 455 | 3456 | 2249 | 1185 | 3456 | 2241 | 1191 |
| Grp Volume(v), veh/h | 111 | 667 | 508 | 73 | 398 | 401 | 295 | 321 | 303 | 89 | 255 | 245 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1781 | 1777 | 1788 | 1728 | 1777 | 1657 | 1728 | 1777 | 1656 |
| Q Serve(g_s), s | 7.3 | 17.2 | 29.3 | 4.5 | 12.1 | 12.1 | 10.1 | 18.7 | 19.0 | 2.9 | 14.7 | 15.2 |
| Cycle Q Clear(g_c), s | 7.3 | 17.2 | 29.3 | 4.5 | 12.1 | 12.1 | 10.1 | 18.7 | 19.0 | 2.9 | 14.7 | 15.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.25 | 1.00 | | 0.72 | 1.00 | | 0.72 |
| Lane Grp Cap(c), veh/h | 145 | 1354 | 764 | 135 | 668 | 672 | 350 | 521 | 486 | 273 | 481 | 448 |
| V/C Ratio(X) | 0.77 | 0.49 | 0.66 | 0.54 | 0.60 | 0.60 | 0.84 | 0.62 | 0.62 | 0.33 | 0.53 | 0.55 |
| Avail Cap(c_a), veh/h | 215 | 1354 | 764 | 215 | 668 | 672 | 403 | 521 | 486 | 403 | 481 | 448 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 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 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 54.0 | 28.3 | 23.7 | 48.9 | 10.8 | 10.8 | 53.0 | 36.6 | 36.7 | 52.2 | 37.3 | 37.4 |
| Incr Delay (d2), s/veh | 4.3 | 1.3 | 4.5 | 1.2 | 3.9 | 3.9 | 12.0 | 2.6 | 2.9 | 0.3 | 4.1 | 4.7 |
| 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(95%),veh/ln | 6.2 | 11.9 | 16.9 | 3.6 | 6.8 | 6.9 | 8.5 | 13.0 | 12.5 | 2.3 | 11.1 | 10.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 58.3 | 29.6 | 28.2 | 50.2 | 14.7 | 14.7 | 64.9 | 39.1 | 39.6 | 52.5 | 41.4 | 42.1 |
| LnGrp LOS | E | C | C | D | B | B | E | D | D | D | D | D |
| Approach Vol, veh/h | | 1286 | | | 872 | | | 919 | | | 589 | |
| Approach Delay, s/veh | | 31.5 | | | 17.7 | | | 47.6 | | | 43.4 | |
| Approach LOS | | C | | | B | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 13.6 | 51.2 | 14.5 | 40.7 | 14.3 | 50.6 | 17.2 | 38.0 |
| Change Period (Y+Rc), s | 4.5 | 5.5 | 5.0 | 5.5 | 4.5 | 5.5 | 5.0 | 5.5 |
| Max Green Setting (Gmax), s | 14.5 | 38.5 | 14.0 | 32.5 | 14.5 | 38.5 | 14.0 | 32.5 |
| Max Q Clear Time (g_c+I1), s | 6.5 | 31.3 | 4.9 | 21.0 | 9.3 | 14.1 | 12.1 | 17.2 |
| Green Ext Time (p_c), s | 0.0 | 4.5 | 0.0 | 3.8 | 0.0 | 7.4 | 0.1 | 3.5 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 34.2 |
| HCM 7th LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 118 | 1069 | 488 | 64 | 708 | 87 | 242 | 209 | 153 | 103 | 287 | 161 |
| Future Volume (veh/h) | 118 | 1069 | 488 | 64 | 708 | 87 | 242 | 209 | 153 | 103 | 287 | 161 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width 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 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 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 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 123 | 1114 | 508 | 67 | 738 | 91 | 252 | 218 | 159 | 107 | 299 | 168 |
| 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, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 149 | 1432 | 780 | 133 | 1254 | 155 | 308 | 542 | 378 | 280 | 582 | 318 |
| Arrive On Green | 0.08 | 0.40 | 0.40 | 0.07 | 0.39 | 0.39 | 0.09 | 0.27 | 0.27 | 0.08 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 1781 | 3184 | 392 | 3456 | 2002 | 1395 | 3456 | 2216 | 1213 |
| Grp Volume(v), veh/h | 123 | 1114 | 508 | 67 | 412 | 417 | 252 | 192 | 185 | 107 | 238 | 229 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1781 | 1777 | 1800 | 1728 | 1777 | 1619 | 1728 | 1777 | 1652 |
| Q Serve(g_s), s | 8.2 | 32.7 | 28.7 | 4.3 | 21.9 | 22.0 | 8.6 | 10.6 | 11.3 | 3.5 | 13.7 | 14.2 |
| Cycle Q Clear(g_c), s | 8.2 | 32.7 | 28.7 | 4.3 | 21.9 | 22.0 | 8.6 | 10.6 | 11.3 | 3.5 | 13.7 | 14.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.22 | 1.00 | | 0.86 | 1.00 | | 0.73 |
| Lane Grp Cap(c), veh/h | 149 | 1432 | 780 | 133 | 700 | 709 | 308 | 481 | 438 | 280 | 466 | 434 |
| V/C Ratio(X) | 0.83 | 0.78 | 0.65 | 0.51 | 0.59 | 0.59 | 0.82 | 0.40 | 0.42 | 0.38 | 0.51 | 0.53 |
| Avail Cap(c_a), veh/h | 260 | 1432 | 780 | 260 | 700 | 709 | 403 | 481 | 439 | 403 | 466 | 434 |
| 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 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 54.1 | 31.1 | 22.8 | 53.4 | 28.7 | 28.7 | 53.7 | 35.8 | 36.0 | 52.3 | 37.7 | 37.9 |
| Incr Delay (d2), s/veh | 4.3 | 4.2 | 4.2 | 1.1 | 3.6 | 3.6 | 7.4 | 0.8 | 0.9 | 0.3 | 4.0 | 4.5 |
| 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(95%),veh/ln | 6.8 | 20.7 | 16.5 | 3.6 | 15.0 | 15.2 | 7.2 | 8.2 | 8.0 | 2.7 | 10.5 | 10.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 58.5 | 35.4 | 27.0 | 54.5 | 32.3 | 32.3 | 61.1 | 36.6 | 36.9 | 52.6 | 41.6 | 42.4 |
| LnGrp LOS | E | D | C | D | C | C | E | D | D | D | D | D |
| Approach Vol, veh/h | | 1745 | | | 896 | | | 629 | | | 574 | |
| Approach Delay, s/veh | | 34.5 | | | 33.9 | | | 46.5 | | | 44.0 | |
| Approach LOS | | C | | | C | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 13.4 | 53.9 | 14.7 | 38.0 | 14.5 | 52.8 | 15.7 | 37.0 |
| Change Period (Y+Rc), s | 4.5 | 5.5 | 5.0 | * 5.5 | 4.5 | 5.5 | 5.0 | 5.5 |
| Max Green Setting (Gmax), s | 17.5 | 36.5 | 14.0 | * 33 | 17.5 | 36.5 | 14.0 | 31.5 |
| Max Q Clear Time (g_c+I1), s | 6.3 | 34.7 | 5.5 | 13.3 | 10.2 | 24.0 | 10.6 | 16.2 |
| Green Ext Time (p_c), s | 0.0 | 1.6 | 0.1 | 2.8 | 0.0 | 5.5 | 0.1 | 3.2 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 37.8 |
| HCM 7th LOS | D |

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 32 | 666 | 97 | 113 | 654 | 30 | 63 | 68 | 83 | 13 | 60 | 19 |
| Future Volume (veh/h) | 32 | 666 | 97 | 113 | 654 | 30 | 63 | 68 | 83 | 13 | 60 | 19 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width 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 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 0.98 | | 0.98 | 0.99 | | 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 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 33 | 694 | 101 | 118 | 681 | 31 | 66 | 71 | 86 | 14 | 62 | 20 |
| 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, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 525 | 2189 | 318 | 540 | 2435 | 111 | 118 | 121 | 126 | 65 | 252 | 74 |
| Arrive On Green | 1.00 | 1.00 | 1.00 | 0.70 | 0.70 | 0.70 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 |
| Sat Flow, veh/h | 737 | 3110 | 452 | 682 | 3461 | 157 | 388 | 591 | 615 | 147 | 1232 | 363 |
| Grp Volume(v), veh/h | 33 | 396 | 399 | 118 | 349 | 363 | 223 | 0 | 0 | 96 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 737 | 1777 | 1786 | 682 | 1777 | 1841 | 1593 | 0 | 0 | 1743 | 0 | 0 |
| Q Serve(g_s), s | 0.6 | 0.0 | 0.0 | 7.4 | 8.7 | 8.7 | 9.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 9.3 | 0.0 | 0.0 | 7.4 | 8.7 | 8.7 | 15.2 | 0.0 | 0.0 | 5.4 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.25 | 1.00 | | 0.09 | 0.30 | | 0.39 | 0.15 | | 0.21 |
| Lane Grp Cap(c), veh/h | 525 | 1250 | 1257 | 540 | 1250 | 1296 | 365 | 0 | 0 | 391 | 0 | 0 |
| V/C Ratio(X) | 0.06 | 0.32 | 0.32 | 0.22 | 0.28 | 0.28 | 0.61 | 0.00 | 0.00 | 0.25 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 525 | 1250 | 1257 | 540 | 1250 | 1296 | 525 | 0 | 0 | 564 | 0 | 0 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.5 | 0.0 | 0.0 | 6.4 | 6.6 | 6.6 | 43.8 | 0.0 | 0.0 | 40.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.2 | 0.7 | 0.7 | 0.9 | 0.6 | 0.5 | 1.7 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| 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(95%),veh/ln | 0.1 | 0.4 | 0.4 | 2.0 | 5.6 | 5.8 | 10.4 | 0.0 | 0.0 | 4.4 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 0.7 | 0.7 | 0.7 | 7.3 | 7.1 | 7.1 | 45.5 | 0.0 | 0.0 | 40.4 | 0.0 | 0.0 |
| LnGrp LOS | A | A | A | A | A | A | D | | | D | | |
| Approach Vol, veh/h | | 828 | | | 830 | | | 223 | | | 96 | |
| Approach Delay, s/veh | | 0.7 | | | 7.1 | | | 45.5 | | | 40.4 | |
| Approach LOS | | A | | | A | | | D | | | D | |

| Timer - Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 90.4 | | 29.6 | | 90.4 | | 29.6 | | | | |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | | 72.0 | | 37.0 | | 72.0 | | 37.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 11.3 | | 17.2 | | 10.7 | | 7.4 | | | | |
| Green Ext Time (p_c), s | | 3.6 | | 1.3 | | 3.7 | | 0.5 | | | | |

| Intersection Summary | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HCM 7th Control Delay, s/veh | | | 10.4 | | | | | | | | | |
| HCM 7th LOS | | | B | | | | | | | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 32 | 903 | 96 | 65 | 650 | 29 | 40 | 46 | 72 | 19 | 39 | 44 |
| Future Volume (veh/h) | 32 | 903 | 96 | 65 | 650 | 29 | 40 | 46 | 72 | 19 | 39 | 44 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width 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 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 0.98 | | 0.98 | 0.99 | | 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 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 34 | 951 | 101 | 68 | 684 | 31 | 42 | 48 | 76 | 20 | 41 | 46 |
| 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 | 546 | 2357 | 250 | 450 | 2519 | 114 | 91 | 103 | 133 | 71 | 136 | 130 |
| Arrive On Green | 1.00 | 1.00 | 1.00 | 0.73 | 0.73 | 0.73 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| Sat Flow, veh/h | 735 | 3239 | 344 | 536 | 3462 | 157 | 296 | 573 | 734 | 197 | 754 | 717 |
| Grp Volume(v), veh/h | 34 | 522 | 530 | 68 | 351 | 364 | 166 | 0 | 0 | 107 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 735 | 1777 | 1806 | 536 | 1777 | 1842 | 1603 | 0 | 0 | 1668 | 0 | 0 |
| Q Serve(g_s), s | 0.5 | 0.0 | 0.0 | 4.7 | 8.0 | 8.1 | 4.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 8.6 | 0.0 | 0.0 | 4.8 | 8.0 | 8.1 | 10.9 | 0.0 | 0.0 | 6.5 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.19 | 1.00 | | 0.09 | 0.25 | | 0.46 | 0.19 | | 0.43 |
| Lane Grp Cap(c), veh/h | 546 | 1293 | 1314 | 450 | 1293 | 1340 | 327 | 0 | 0 | 337 | 0 | 0 |
| V/C Ratio(X) | 0.06 | 0.40 | 0.40 | 0.15 | 0.27 | 0.27 | 0.51 | 0.00 | 0.00 | 0.32 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 546 | 1293 | 1314 | 450 | 1293 | 1340 | 525 | 0 | 0 | 539 | 0 | 0 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.4 | 0.0 | 0.0 | 5.1 | 5.5 | 5.5 | 44.7 | 0.0 | 0.0 | 43.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.2 | 0.9 | 0.9 | 0.1 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 |
| 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(95%),veh/ln | 0.1 | 0.6 | 0.6 | 0.8 | 4.7 | 4.9 | 8.1 | 0.0 | 0.0 | 5.1 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 0.6 | 0.9 | 0.9 | 5.2 | 5.6 | 5.6 | 45.9 | 0.0 | 0.0 | 43.5 | 0.0 | 0.0 |
| LnGrp LOS | A | A | A | A | A | A | D | | | D | | |
| Approach Vol, veh/h | | 1086 | | | 783 | | | 166 | | | 107 | |
| Approach Delay, s/veh | | 0.9 | | | 5.5 | | | 45.9 | | | 43.5 | |
| Approach LOS | | A | | | A | | | D | | | D | |

| Timer - Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 93.3 | | 26.7 | | 93.3 | | 26.7 | | | | |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | | 72.0 | | 37.0 | | 72.0 | | 37.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 10.6 | | 12.9 | | 10.1 | | 8.5 | | | | |
| Green Ext Time (p_c), s | | 5.1 | | 1.0 | | 3.6 | | 0.6 | | | | |

| Intersection Summary | | |
|---|---|---|
| HCM 7th Control Delay, s/veh | | 8.2 |
| HCM 7th LOS | | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 33 | 679 | 99 | 115 | 667 | 31 | 64 | 69 | 85 | 13 | 61 | 19 |
| Future Volume (veh/h) | 33 | 679 | 99 | 115 | 667 | 31 | 64 | 69 | 85 | 13 | 61 | 19 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width 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 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 0.98 | | 0.98 | 0.99 | | 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 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 34 | 707 | 103 | 120 | 695 | 32 | 67 | 72 | 89 | 14 | 64 | 20 |
| 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, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 516 | 2182 | 318 | 532 | 2427 | 112 | 119 | 121 | 129 | 64 | 257 | 74 |
| Arrive On Green | 1.00 | 1.00 | 1.00 | 0.70 | 0.70 | 0.70 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| Sat Flow, veh/h | 727 | 3110 | 453 | 672 | 3459 | 159 | 387 | 585 | 622 | 143 | 1245 | 356 |
| Grp Volume(v), veh/h | 34 | 404 | 406 | 120 | 357 | 370 | 228 | 0 | 0 | 98 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 727 | 1777 | 1786 | 672 | 1777 | 1841 | 1593 | 0 | 0 | 1744 | 0 | 0 |
| Q Serve(g_s), s | 0.6 | 0.0 | 0.0 | 7.8 | 9.0 | 9.0 | 10.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 9.7 | 0.0 | 0.0 | 7.8 | 9.0 | 9.0 | 15.6 | 0.0 | 0.0 | 5.5 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.25 | 1.00 | | 0.09 | 0.29 | | 0.39 | 0.14 | | 0.20 |
| Lane Grp Cap(c), veh/h | 516 | 1247 | 1253 | 532 | 1247 | 1292 | 368 | 0 | 0 | 395 | 0 | 0 |
| V/C Ratio(X) | 0.07 | 0.32 | 0.32 | 0.23 | 0.29 | 0.29 | 0.62 | 0.00 | 0.00 | 0.25 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 516 | 1247 | 1253 | 532 | 1247 | 1292 | 525 | 0 | 0 | 565 | 0 | 0 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.5 | 0.0 | 0.0 | 6.5 | 6.7 | 6.7 | 43.7 | 0.0 | 0.0 | 39.9 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.2 | 0.7 | 0.7 | 1.0 | 0.6 | 0.6 | 1.7 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| 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(95%),veh/ln | 0.1 | 0.4 | 0.4 | 2.1 | 5.9 | 6.1 | 10.6 | 0.0 | 0.0 | 4.5 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 0.8 | 0.7 | 0.7 | 7.5 | 7.3 | 7.2 | 45.4 | 0.0 | 0.0 | 40.3 | 0.0 | 0.0 |
| LnGrp LOS | A | A | A | A | A | A | D | | | D | | |
| Approach Vol, veh/h | | 844 | | | 847 | | | 228 | | | 98 | |
| Approach Delay, s/veh | | 0.7 | | | 7.3 | | | 45.4 | | | 40.3 | |
| Approach LOS | | A | | | A | | | D | | | D | |

| Timer - Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 90.2 | | 29.8 | | 90.2 | | 29.8 | | | | |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | | 72.0 | | 37.0 | | 72.0 | | 37.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 11.7 | | 17.6 | | 11.0 | | 7.5 | | | | |
| Green Ext Time (p_c), s | | 3.7 | | 1.3 | | 3.9 | | 0.5 | | | | |

| Intersection Summary | | |
|---|---|---|
| HCM 7th Control Delay, s/veh | | 10.4 |
| HCM 7th LOS | | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 33 | 921 | 98 | 66 | 663 | 30 | 41 | 47 | 73 | 19 | 40 | 45 |
| Future Volume (veh/h) | 33 | 921 | 98 | 66 | 663 | 30 | 41 | 47 | 73 | 19 | 40 | 45 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width 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 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 0.98 | | 0.98 | 0.99 | | 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 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 35 | 969 | 103 | 69 | 698 | 32 | 43 | 49 | 77 | 20 | 42 | 47 |
| 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 | 537 | 2354 | 250 | 442 | 2514 | 115 | 92 | 104 | 133 | 70 | 138 | 131 |
| Arrive On Green | 1.00 | 1.00 | 1.00 | 0.73 | 0.73 | 0.73 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| Sat Flow, veh/h | 725 | 3239 | 344 | 526 | 3460 | 159 | 300 | 573 | 731 | 192 | 758 | 720 |
| Grp Volume(v), veh/h | 35 | 532 | 540 | 69 | 358 | 372 | 169 | 0 | 0 | 109 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 725 | 1777 | 1806 | 526 | 1777 | 1841 | 1604 | 0 | 0 | 1670 | 0 | 0 |
| Q Serve(g_s), s | 0.6 | 0.0 | 0.0 | 5.0 | 8.3 | 8.3 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 8.9 | 0.0 | 0.0 | 5.0 | 8.3 | 8.3 | 11.1 | 0.0 | 0.0 | 6.7 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.19 | 1.00 | | 0.09 | 0.25 | | 0.46 | 0.18 | | 0.43 |
| Lane Grp Cap(c), veh/h | 537 | 1291 | 1312 | 442 | 1291 | 1338 | 329 | 0 | 0 | 339 | 0 | 0 |
| V/C Ratio(X) | 0.07 | 0.41 | 0.41 | 0.16 | 0.28 | 0.28 | 0.51 | 0.00 | 0.00 | 0.32 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 537 | 1291 | 1312 | 442 | 1291 | 1338 | 525 | 0 | 0 | 539 | 0 | 0 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.4 | 0.0 | 0.0 | 5.2 | 5.6 | 5.6 | 44.6 | 0.0 | 0.0 | 42.9 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.2 | 1.0 | 1.0 | 0.1 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 |
| 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(95%),veh/ln | 0.1 | 0.6 | 0.6 | 0.9 | 4.9 | 5.0 | 8.3 | 0.0 | 0.0 | 5.2 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 0.7 | 1.0 | 1.0 | 5.2 | 5.7 | 5.7 | 45.9 | 0.0 | 0.0 | 43.5 | 0.0 | 0.0 |
| LnGrp LOS | A | A | A | A | A | A | D | | | D | | |
| Approach Vol, veh/h | | 1107 | | | 799 | | | 169 | | | 109 | |
| Approach Delay, s/veh | | 1.0 | | | 5.6 | | | 45.9 | | | 43.5 | |
| Approach LOS | | A | | | A | | | D | | | D | |

| Timer - Assigned Phs | 2 | 4 | 6 | 8 |
|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 93.2 | 26.8 | 93.2 | 26.8 |
| Change Period (Y+Rc), s | 6.0 | 5.0 | 6.0 | 5.0 |
| Max Green Setting (Gmax), s | 72.0 | 37.0 | 72.0 | 37.0 |
| Max Q Clear Time (g_c+I1), s | 10.9 | 13.1 | 10.3 | 8.7 |
| Green Ext Time (p_c), s | 5.3 | 1.0 | 3.7 | 0.6 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 8.3 |
| HCM 7th LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 34 | 684 | 100 | 115 | 669 | 31 | 64 | 69 | 85 | 13 | 61 | 19 |
| Future Volume (veh/h) | 34 | 684 | 100 | 115 | 669 | 31 | 64 | 69 | 85 | 13 | 61 | 19 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width 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 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 0.98 | | 0.98 | 0.99 | | 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 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 35 | 712 | 104 | 120 | 697 | 32 | 67 | 72 | 89 | 14 | 64 | 20 |
| 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, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 515 | 2181 | 318 | 529 | 2427 | 111 | 119 | 121 | 129 | 64 | 257 | 74 |
| Arrive On Green | 1.00 | 1.00 | 1.00 | 0.70 | 0.70 | 0.70 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| Sat Flow, veh/h | 726 | 3109 | 454 | 668 | 3459 | 159 | 387 | 585 | 622 | 143 | 1245 | 356 |
| Grp Volume(v), veh/h | 35 | 407 | 409 | 120 | 358 | 371 | 228 | 0 | 0 | 98 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 726 | 1777 | 1786 | 668 | 1777 | 1841 | 1593 | 0 | 0 | 1744 | 0 | 0 |
| Q Serve(g_s), s | 0.7 | 0.0 | 0.0 | 7.8 | 9.0 | 9.0 | 10.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 9.7 | 0.0 | 0.0 | 7.8 | 9.0 | 9.0 | 15.6 | 0.0 | 0.0 | 5.5 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.25 | 1.00 | | 0.09 | 0.29 | | 0.39 | 0.14 | | 0.20 |
| Lane Grp Cap(c), veh/h | 515 | 1247 | 1253 | 529 | 1247 | 1292 | 368 | 0 | 0 | 395 | 0 | 0 |
| V/C Ratio(X) | 0.07 | 0.33 | 0.33 | 0.23 | 0.29 | 0.29 | 0.62 | 0.00 | 0.00 | 0.25 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 515 | 1247 | 1253 | 529 | 1247 | 1292 | 525 | 0 | 0 | 565 | 0 | 0 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.5 | 0.0 | 0.0 | 6.5 | 6.7 | 6.7 | 43.7 | 0.0 | 0.0 | 39.9 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.3 | 0.7 | 0.7 | 1.0 | 0.6 | 0.6 | 1.7 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| 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(95%),veh/ln | 0.1 | 0.4 | 0.4 | 2.1 | 5.9 | 6.1 | 10.6 | 0.0 | 0.0 | 4.5 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 0.8 | 0.7 | 0.7 | 7.5 | 7.3 | 7.2 | 45.4 | 0.0 | 0.0 | 40.3 | 0.0 | 0.0 |
| LnGrp LOS | A | A | A | A | A | A | D | | | D | | |
| Approach Vol, veh/h | | 851 | | | 849 | | | 228 | | | 98 | |
| Approach Delay, s/veh | | 0.7 | | | 7.3 | | | 45.4 | | | 40.3 | |
| Approach LOS | | A | | | A | | | D | | | D | |

| Timer - Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 90.2 | | 29.8 | | 90.2 | | 29.8 | | | | |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | | 72.0 | | 37.0 | | 72.0 | | 37.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 11.7 | | 17.6 | | 11.0 | | 7.5 | | | | |
| Green Ext Time (p_c), s | | 3.7 | | 1.3 | | 3.9 | | 0.5 | | | | |

| Intersection Summary | | |
|---|---|---|
| HCM 7th Control Delay, s/veh | | 10.4 |
| HCM 7th LOS | | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 34 | 924 | 99 | 66 | 668 | 30 | 42 | 47 | 73 | 19 | 40 | 46 |
| Future Volume (veh/h) | 34 | 924 | 99 | 66 | 668 | 30 | 42 | 47 | 73 | 19 | 40 | 46 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width 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 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 0.98 | | 0.98 | 0.99 | | 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 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 36 | 973 | 104 | 69 | 703 | 32 | 44 | 49 | 77 | 20 | 42 | 48 |
| 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 | 534 | 2351 | 251 | 440 | 2514 | 114 | 94 | 104 | 132 | 70 | 137 | 133 |
| Arrive On Green | 1.00 | 1.00 | 1.00 | 0.73 | 0.73 | 0.73 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| Sat Flow, veh/h | 722 | 3237 | 346 | 523 | 3461 | 157 | 307 | 570 | 727 | 189 | 751 | 728 |
| Grp Volume(v), veh/h | 36 | 534 | 543 | 69 | 361 | 374 | 170 | 0 | 0 | 110 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 722 | 1777 | 1806 | 523 | 1777 | 1842 | 1604 | 0 | 0 | 1669 | 0 | 0 |
| Q Serve(g_s), s | 0.6 | 0.0 | 0.0 | 5.0 | 8.4 | 8.4 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 9.0 | 0.0 | 0.0 | 5.0 | 8.4 | 8.4 | 11.2 | 0.0 | 0.0 | 6.7 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.19 | 1.00 | | 0.09 | 0.26 | | 0.45 | 0.18 | | 0.44 |
| Lane Grp Cap(c), veh/h | 534 | 1291 | 1312 | 440 | 1291 | 1338 | 330 | 0 | 0 | 339 | 0 | 0 |
| V/C Ratio(X) | 0.07 | 0.41 | 0.41 | 0.16 | 0.28 | 0.28 | 0.52 | 0.00 | 0.00 | 0.32 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 534 | 1291 | 1312 | 440 | 1291 | 1338 | 525 | 0 | 0 | 539 | 0 | 0 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.4 | 0.0 | 0.0 | 5.2 | 5.6 | 5.6 | 44.6 | 0.0 | 0.0 | 42.9 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.2 | 1.0 | 1.0 | 0.1 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 |
| 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(95%),veh/ln | 0.1 | 0.6 | 0.6 | 0.9 | 4.9 | 5.1 | 8.3 | 0.0 | 0.0 | 5.3 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 0.7 | 1.0 | 1.0 | 5.2 | 5.7 | 5.7 | 45.9 | 0.0 | 0.0 | 43.5 | 0.0 | 0.0 |
| LnGrp LOS | A | A | A | A | A | A | D | | | D | | |
| Approach Vol, veh/h | | 1113 | | | 804 | | | 170 | | | 110 | |
| Approach Delay, s/veh | | 1.0 | | | 5.6 | | | 45.9 | | | 43.5 | |
| Approach LOS | | A | | | A | | | D | | | D | |

| Timer - Assigned Phs | 2 | 4 | 6 | 8 |
|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 93.2 | 26.8 | 93.2 | 26.8 |
| Change Period (Y+Rc), s | 6.0 | 5.0 | 6.0 | 5.0 |
| Max Green Setting (Gmax), s | 72.0 | 37.0 | 72.0 | 37.0 |
| Max Q Clear Time (g_c+I1), s | 11.0 | 13.2 | 10.4 | 8.7 |
| Green Ext Time (p_c), s | 5.3 | 1.0 | 3.8 | 0.6 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 8.3 |
| HCM 7th LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 33 | 765 | 99 | 120 | 762 | 31 | 64 | 69 | 85 | 13 | 61 | 19 |
| Future Volume (veh/h) | 33 | 765 | 99 | 120 | 762 | 31 | 64 | 69 | 85 | 13 | 61 | 19 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width 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 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 0.98 | | 0.98 | 0.99 | | 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 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 34 | 797 | 103 | 125 | 794 | 32 | 67 | 72 | 89 | 14 | 64 | 20 |
| 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, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 467 | 2219 | 287 | 494 | 2443 | 98 | 119 | 121 | 129 | 64 | 257 | 74 |
| Arrive On Green | 1.00 | 1.00 | 1.00 | 0.70 | 0.70 | 0.70 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| Sat Flow, veh/h | 663 | 3162 | 409 | 618 | 3481 | 140 | 387 | 585 | 622 | 143 | 1245 | 356 |
| Grp Volume(v), veh/h | 34 | 448 | 452 | 125 | 405 | 421 | 228 | 0 | 0 | 98 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 663 | 1777 | 1794 | 618 | 1777 | 1845 | 1593 | 0 | 0 | 1744 | 0 | 0 |
| Q Serve(g_s), s | 0.8 | 0.0 | 0.0 | 9.1 | 10.6 | 10.6 | 10.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 11.4 | 0.0 | 0.0 | 9.1 | 10.6 | 10.6 | 15.6 | 0.0 | 0.0 | 5.5 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.23 | 1.00 | | 0.08 | 0.29 | | 0.39 | 0.14 | | 0.20 |
| Lane Grp Cap(c), veh/h | 467 | 1247 | 1259 | 494 | 1247 | 1294 | 368 | 0 | 0 | 395 | 0 | 0 |
| V/C Ratio(X) | 0.07 | 0.36 | 0.36 | 0.25 | 0.33 | 0.33 | 0.62 | 0.00 | 0.00 | 0.25 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 467 | 1247 | 1259 | 494 | 1247 | 1294 | 525 | 0 | 0 | 565 | 0 | 0 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.7 | 0.0 | 0.0 | 6.7 | 6.9 | 6.9 | 43.7 | 0.0 | 0.0 | 39.9 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.3 | 0.8 | 0.8 | 1.2 | 0.7 | 0.7 | 1.7 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| 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(95%),veh/ln | 0.1 | 0.5 | 0.5 | 2.2 | 6.9 | 7.2 | 10.6 | 0.0 | 0.0 | 4.5 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 1.0 | 0.8 | 0.8 | 7.9 | 7.6 | 7.6 | 45.4 | 0.0 | 0.0 | 40.3 | 0.0 | 0.0 |
| LnGrp LOS | A | A | A | A | A | A | D | | | D | | |
| Approach Vol, veh/h | | 934 | | | 951 | | | 228 | | | 98 | |
| Approach Delay, s/veh | | 0.8 | | | 7.6 | | | 45.4 | | | 40.3 | |
| Approach LOS | | A | | | A | | | D | | | D | |

| Timer - Assigned Phs | 2 | 4 | 6 | 8 |
|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 90.2 | 29.8 | 90.2 | 29.8 |
| Change Period (Y+Rc), s | 6.0 | 5.0 | 6.0 | 5.0 |
| Max Green Setting (Gmax), s | 72.0 | 37.0 | 72.0 | 37.0 |
| Max Q Clear Time (g_c+I1), s | 13.4 | 17.6 | 12.6 | 7.5 |
| Green Ext Time (p_c), s | 4.2 | 1.3 | 4.6 | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 10.1 |
| HCM 7th LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 33 | 1034 | 98 | 69 | 738 | 30 | 41 | 47 | 73 | 19 | 40 | 45 |
| Future Volume (veh/h) | 33 | 1034 | 98 | 69 | 738 | 30 | 41 | 47 | 73 | 19 | 40 | 45 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width 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 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 0.98 | | 0.98 | 0.99 | | 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 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 35 | 1088 | 103 | 73 | 777 | 32 | 43 | 49 | 77 | 20 | 42 | 47 |
| 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 | 497 | 2383 | 225 | 401 | 2527 | 104 | 92 | 104 | 133 | 70 | 138 | 131 |
| Arrive On Green | 1.00 | 1.00 | 1.00 | 0.73 | 0.73 | 0.73 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| Sat Flow, veh/h | 674 | 3279 | 310 | 470 | 3478 | 143 | 300 | 573 | 731 | 192 | 758 | 720 |
| Grp Volume(v), veh/h | 35 | 589 | 602 | 73 | 397 | 412 | 169 | 0 | 0 | 109 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 674 | 1777 | 1813 | 470 | 1777 | 1844 | 1604 | 0 | 0 | 1670 | 0 | 0 |
| Q Serve(g_s), s | 0.7 | 0.0 | 0.0 | 6.0 | 9.4 | 9.4 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 10.2 | 0.0 | 0.0 | 6.0 | 9.4 | 9.4 | 11.1 | 0.0 | 0.0 | 6.7 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.17 | 1.00 | | 0.08 | 0.25 | | 0.46 | 0.18 | | 0.43 |
| Lane Grp Cap(c), veh/h | 497 | 1291 | 1317 | 401 | 1291 | 1340 | 329 | 0 | 0 | 339 | 0 | 0 |
| V/C Ratio(X) | 0.07 | 0.46 | 0.46 | 0.18 | 0.31 | 0.31 | 0.51 | 0.00 | 0.00 | 0.32 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 497 | 1291 | 1317 | 401 | 1291 | 1340 | 525 | 0 | 0 | 539 | 0 | 0 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.6 | 0.0 | 0.0 | 5.3 | 5.8 | 5.8 | 44.6 | 0.0 | 0.0 | 42.9 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.3 | 1.2 | 1.1 | 0.1 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 |
| 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(95%),veh/ln | 0.1 | 0.8 | 0.8 | 0.9 | 5.5 | 5.8 | 8.3 | 0.0 | 0.0 | 5.2 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 0.8 | 1.2 | 1.1 | 5.4 | 5.8 | 5.8 | 45.9 | 0.0 | 0.0 | 43.5 | 0.0 | 0.0 |
| LnGrp LOS | A | A | A | A | A | A | D | | | D | | |
| Approach Vol, veh/h | | 1226 | | | 882 | | | 169 | | | 109 | |
| Approach Delay, s/veh | | 1.1 | | | 5.8 | | | 45.9 | | | 43.5 | |
| Approach LOS | | A | | | A | | | D | | | D | |

| Timer - Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 93.2 | | 26.8 | | 93.2 | | 26.8 | | | | |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | | 72.0 | | 37.0 | | 72.0 | | 37.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 12.2 | | 13.1 | | 11.4 | | 8.7 | | | | |
| Green Ext Time (p_c), s | | 6.2 | | 1.0 | | 4.4 | | 0.6 | | | | |

| Intersection Summary | | |
|---|---|---|
| HCM 7th Control Delay, s/veh | | 8.0 |
| HCM 7th LOS | | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 34 | 770 | 100 | 120 | 764 | 31 | 64 | 69 | 85 | 13 | 61 | 19 |
| Future Volume (veh/h) | 34 | 770 | 100 | 120 | 764 | 31 | 64 | 69 | 85 | 13 | 61 | 19 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width 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 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 0.98 | | 0.98 | 0.99 | | 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 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 35 | 802 | 104 | 125 | 796 | 32 | 67 | 72 | 89 | 14 | 64 | 20 |
| 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, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 466 | 2218 | 288 | 491 | 2443 | 98 | 119 | 121 | 129 | 64 | 257 | 74 |
| Arrive On Green | 1.00 | 1.00 | 1.00 | 0.70 | 0.70 | 0.70 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| Sat Flow, veh/h | 662 | 3161 | 410 | 614 | 3482 | 140 | 387 | 585 | 622 | 143 | 1245 | 356 |
| Grp Volume(v), veh/h | 35 | 451 | 455 | 125 | 406 | 422 | 228 | 0 | 0 | 98 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 662 | 1777 | 1794 | 614 | 1777 | 1845 | 1593 | 0 | 0 | 1744 | 0 | 0 |
| Q Serve(g_s), s | 0.9 | 0.0 | 0.0 | 9.1 | 10.6 | 10.6 | 10.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 11.5 | 0.0 | 0.0 | 9.1 | 10.6 | 10.6 | 15.6 | 0.0 | 0.0 | 5.5 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.23 | 1.00 | | 0.08 | 0.29 | | 0.39 | 0.14 | | 0.20 |
| Lane Grp Cap(c), veh/h | 466 | 1247 | 1259 | 491 | 1247 | 1294 | 368 | 0 | 0 | 395 | 0 | 0 |
| V/C Ratio(X) | 0.08 | 0.36 | 0.36 | 0.25 | 0.33 | 0.33 | 0.62 | 0.00 | 0.00 | 0.25 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 466 | 1247 | 1259 | 491 | 1247 | 1294 | 525 | 0 | 0 | 565 | 0 | 0 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.7 | 0.0 | 0.0 | 6.7 | 6.9 | 6.9 | 43.7 | 0.0 | 0.0 | 39.9 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.3 | 0.8 | 0.8 | 1.2 | 0.7 | 0.7 | 1.7 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| 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(95%),veh/ln | 0.1 | 0.5 | 0.5 | 2.2 | 6.9 | 7.2 | 10.6 | 0.0 | 0.0 | 4.5 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 1.0 | 0.8 | 0.8 | 8.0 | 7.6 | 7.6 | 45.4 | 0.0 | 0.0 | 40.3 | 0.0 | 0.0 |
| LnGrp LOS | A | A | A | A | A | A | D | | | D | | |
| Approach Vol, veh/h | | 941 | | | 953 | | | 228 | | | 98 | |
| Approach Delay, s/veh | | 0.8 | | | 7.7 | | | 45.4 | | | 40.3 | |
| Approach LOS | | A | | | A | | | D | | | D | |

| Timer - Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 90.2 | | 29.8 | | 90.2 | | 29.8 | | | | |
| Change Period (Y+Rc), s | | 6.0 | | 5.0 | | 6.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | | 72.0 | | 37.0 | | 72.0 | | 37.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 13.5 | | 17.6 | | 12.6 | | 7.5 | | | | |
| Green Ext Time (p_c), s | | 4.3 | | 1.3 | | 4.6 | | 0.5 | | | | |

| Intersection Summary | | |
|---|---|---|
| HCM 7th Control Delay, s/veh | | 10.1 |
| HCM 7th LOS | | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 34 | 1037 | 99 | 69 | 743 | 30 | 42 | 47 | 73 | 19 | 40 | 46 |
| Future Volume (veh/h) | 34 | 1037 | 99 | 69 | 743 | 30 | 42 | 47 | 73 | 19 | 40 | 46 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width 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 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 1.00 | 0.98 | | 0.98 | 0.99 | | 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 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 36 | 1092 | 104 | 73 | 782 | 32 | 44 | 49 | 77 | 20 | 42 | 48 |
| 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 | 494 | 2380 | 227 | 400 | 2527 | 103 | 94 | 104 | 132 | 70 | 137 | 133 |
| Arrive On Green | 1.00 | 1.00 | 1.00 | 0.73 | 0.73 | 0.73 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| Sat Flow, veh/h | 671 | 3277 | 312 | 467 | 3479 | 142 | 307 | 570 | 727 | 189 | 751 | 728 |
| Grp Volume(v), veh/h | 36 | 592 | 604 | 73 | 399 | 415 | 170 | 0 | 0 | 110 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 671 | 1777 | 1812 | 467 | 1777 | 1844 | 1604 | 0 | 0 | 1669 | 0 | 0 |
| Q Serve(g_s), s | 0.8 | 0.0 | 0.0 | 6.1 | 9.5 | 9.5 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 10.3 | 0.0 | 0.0 | 6.1 | 9.5 | 9.5 | 11.2 | 0.0 | 0.0 | 6.7 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.17 | 1.00 | | 0.08 | 0.26 | | 0.45 | 0.18 | | 0.44 |
| Lane Grp Cap(c), veh/h | 494 | 1291 | 1316 | 400 | 1291 | 1340 | 330 | 0 | 0 | 339 | 0 | 0 |
| V/C Ratio(X) | 0.07 | 0.46 | 0.46 | 0.18 | 0.31 | 0.31 | 0.52 | 0.00 | 0.00 | 0.32 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 494 | 1291 | 1316 | 400 | 1291 | 1340 | 525 | 0 | 0 | 539 | 0 | 0 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.6 | 0.0 | 0.0 | 5.3 | 5.8 | 5.8 | 44.6 | 0.0 | 0.0 | 42.9 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.3 | 1.2 | 1.2 | 0.1 | 0.1 | 0.0 | 1.2 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 |
| 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(95%),veh/ln | 0.1 | 0.8 | 0.8 | 1.0 | 5.6 | 5.8 | 8.3 | 0.0 | 0.0 | 5.3 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d), s/veh | 0.8 | 1.2 | 1.2 | 5.4 | 5.8 | 5.8 | 45.9 | 0.0 | 0.0 | 43.5 | 0.0 | 0.0 |
| LnGrp LOS | A | A | A | A | A | A | D | | | D | | |
| Approach Vol, veh/h | | 1232 | | | 887 | | | 170 | | | 110 | |
| Approach Delay, s/veh | | 1.2 | | | 5.8 | | | 45.9 | | | 43.5 | |
| Approach LOS | | A | | | A | | | D | | | D | |

| Timer - Assigned Phs | 2 | 4 | 6 | 8 |
|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 93.2 | 26.8 | 93.2 | 26.8 |
| Change Period (Y+Rc), s | 6.0 | 5.0 | 6.0 | 5.0 |
| Max Green Setting (Gmax), s | 72.0 | 37.0 | 72.0 | 37.0 |
| Max Q Clear Time (g_c+I1), s | 12.3 | 13.2 | 11.5 | 8.7 |
| Green Ext Time (p_c), s | 6.2 | 1.0 | 4.4 | 0.6 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 8.0 |
| HCM 7th LOS | A |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 789 | 8 | 11 | 683 | 1 | 3 |
| Future Vol, veh/h | 789 | 8 | 11 | 683 | 1 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 100 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 858 | 9 | 12 | 742 | 1 | 3 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 866 | 0 | 1257 | 433 |
| Stage 1 | - | - | - | - | 862 | - |
| Stage 2 | - | - | - | - | 395 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 773 | - | 163 | 571 |
| Stage 1 | - | - | - | - | 374 | - |
| Stage 2 | - | - | - | - | 650 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 773 | - | 161 | 571 |
| Mov Cap-2 Maneuver | - | - | - | - | 161 | - |
| Stage 1 | - | - | - | - | 374 | - |
| Stage 2 | - | - | - | - | 639 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s/v | 0 | 0.15 | 15.47 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 348 | - | - | 773 | - |
| HCM Lane V/C Ratio | 0.012 | - | - | 0.015 | - |
| HCM Control Delay (s/veh) | 15.5 | - | - | 9.7 | - |
| HCM Lane LOS | C | - | - | A | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1175 | 14 | 13 | 762 | 16 | 27 |
| Future Vol, veh/h | 1175 | 14 | 13 | 762 | 16 | 27 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 100 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1277 | 15 | 14 | 828 | 17 | 29 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1292 | 0 | 1727 | 646 |
| Stage 1 | - | - | - | - | 1285 | - |
| Stage 2 | - | - | - | - | 442 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 532 | - | 80 | 414 |
| Stage 1 | - | - | - | - | 223 | - |
| Stage 2 | - | - | - | - | 615 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 532 | - | 77 | 414 |
| Mov Cap-2 Maneuver | - | - | - | - | 77 | - |
| Stage 1 | - | - | - | - | 223 | - |
| Stage 2 | - | - | - | - | 598 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s/v | 0 | 0.2 | 37.01 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 158 | - | - | 532 | - |
| HCM Lane V/C Ratio | 0.295 | - | - | 0.027 | - |
| HCM Control Delay (s/veh) | 37 | - | - | 11.9 | - |
| HCM Lane LOS | E | - | - | B | - |
| HCM 95th %tile Q(veh) | 1.2 | - | - | 0.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 805 | 8 | 11 | 697 | 1 | 3 |
| Future Vol, veh/h | 805 | 8 | 11 | 697 | 1 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 100 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 875 | 9 | 12 | 758 | 1 | 3 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 884 | 0 | 1282 | 442 |
| Stage 1 | - | - | - | - | 879 | - |
| Stage 2 | - | - | - | - | 403 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 761 | - | 157 | 563 |
| Stage 1 | - | - | - | - | 366 | - |
| Stage 2 | - | - | - | - | 644 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 761 | - | 155 | 563 |
| Mov Cap-2 Maneuver | - | - | - | - | 155 | - |
| Stage 1 | - | - | - | - | 366 | - |
| Stage 2 | - | - | - | - | 634 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s/v | 0 | 0.15 | 15.75 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 339 | - | - | 761 | - |
| HCM Lane V/C Ratio | 0.013 | - | - | 0.016 | - |
| HCM Control Delay (s/veh) | 15.8 | - | - | 9.8 | - |
| HCM Lane LOS | C | - | - | A | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1199 | 14 | 13 | 777 | 16 | 28 |
| Future Vol, veh/h | 1199 | 14 | 13 | 777 | 16 | 28 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 100 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1303 | 15 | 14 | 845 | 17 | 30 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1318 | 0 | 1761 | 659 |
| Stage 1 | - | - | - | - | 1311 | - |
| Stage 2 | - | - | - | - | 451 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 520 | - | 75 | 406 |
| Stage 1 | - | - | - | - | 216 | - |
| Stage 2 | - | - | - | - | 609 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 520 | - | 73 | 406 |
| Mov Cap-2 Maneuver | - | - | - | - | 73 | - |
| Stage 1 | - | - | - | - | 216 | - |
| Stage 2 | - | - | - | - | 592 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s/v | 0 | 0.2 | 38.76 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 153 | - | - | 520 | - |
| HCM Lane V/C Ratio | 0.312 | - | - | 0.027 | - |
| HCM Control Delay (s/veh) | 38.8 | - | - | 12.1 | - |
| HCM Lane LOS | E | - | - | B | - |
| HCM 95th %tile Q(veh) | 1.2 | - | - | 0.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 805 | 11 | 13 | 697 | 10 | 9 |
| Future Vol, veh/h | 805 | 11 | 13 | 697 | 10 | 9 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 100 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 875 | 12 | 14 | 758 | 11 | 10 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 887 | 0 | 1288 | 443 |
| Stage 1 | - | - | - | - | 881 | - |
| Stage 2 | - | - | - | - | 407 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 759 | - | 156 | 562 |
| Stage 1 | - | - | - | - | 365 | - |
| Stage 2 | - | - | - | - | 641 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 759 | - | 153 | 562 |
| Mov Cap-2 Maneuver | - | - | - | - | 153 | - |
| Stage 1 | - | - | - | - | 365 | - |
| Stage 2 | - | - | - | - | 629 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s/v | 0 | 0.18 | 21.94 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 233 | - | - | 759 | - |
| HCM Lane V/C Ratio | 0.089 | - | - | 0.019 | - |
| HCM Control Delay (s/veh) | 21.9 | - | - | 9.8 | - |
| HCM Lane LOS | C | - | - | A | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 0.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.4 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1199 | 24 | 19 | 777 | 22 | 32 |
| Future Vol, veh/h | 1199 | 24 | 19 | 777 | 22 | 32 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 100 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1303 | 26 | 21 | 845 | 24 | 35 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1329 | 0 | 1780 | 665 |
| Stage 1 | - | - | - | - | 1316 | - |
| Stage 2 | - | - | - | - | 464 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 515 | - | 73 | 403 |
| Stage 1 | - | - | - | - | 215 | - |
| Stage 2 | - | - | - | - | 600 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 515 | - | 70 | 403 |
| Mov Cap-2 Maneuver | - | - | - | - | 70 | - |
| Stage 1 | - | - | - | - | 215 | - |
| Stage 2 | - | - | - | - | 576 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s/v | 0 | 0.29 | 49.24 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 138 | - | - | 515 | - |
| HCM Lane V/C Ratio | 0.426 | - | - | 0.04 | - |
| HCM Control Delay (s/veh) | 49.2 | - | - | 12.3 | - |
| HCM Lane LOS | E | - | - | B | - |
| HCM 95th %tile Q(veh) | 1.9 | - | - | 0.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 891 | 8 | 11 | 792 | 1 | 3 |
| Future Vol, veh/h | 891 | 8 | 11 | 792 | 1 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 100 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 968 | 9 | 12 | 861 | 1 | 3 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 977 | 0 | 1427 | 489 |
| Stage 1 | - | - | - | - | 973 | - |
| Stage 2 | - | - | - | - | 454 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 702 | - | 126 | 525 |
| Stage 1 | - | - | - | - | 327 | - |
| Stage 2 | - | - | - | - | 606 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 702 | - | 124 | 525 |
| Mov Cap-2 Maneuver | - | - | - | - | 124 | - |
| Stage 1 | - | - | - | - | 327 | - |
| Stage 2 | - | - | - | - | 596 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s/v | 0 | 0.14 | 17.6 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 290 | - | - | 702 | - |
| HCM Lane V/C Ratio | 0.015 | - | - | 0.017 | - |
| HCM Control Delay (s/veh) | 17.6 | - | - | 10.2 | - |
| HCM Lane LOS | C | - | - | B | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.1 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1312 | 14 | 13 | 852 | 16 | 28 |
| Future Vol, veh/h | 1312 | 14 | 13 | 852 | 16 | 28 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 100 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1426 | 15 | 14 | 926 | 17 | 30 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1441 | 0 | 1925 | 721 |
| Stage 1 | - | - | - | - | 1434 | - |
| Stage 2 | - | - | - | - | 491 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 467 | - | 59 | 370 |
| Stage 1 | - | - | - | - | 186 | - |
| Stage 2 | - | - | - | - | 580 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 467 | - | 57 | 370 |
| Mov Cap-2 Maneuver | - | - | - | - | 57 | - |
| Stage 1 | - | - | - | - | 186 | - |
| Stage 2 | - | - | - | - | 563 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s/v | 0 | 0.19 | 51.7 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 123 | - | - | 467 | - |
| HCM Lane V/C Ratio | 0.388 | - | - | 0.03 | - |
| HCM Control Delay (s/veh) | 51.7 | - | - | 13 | - |
| HCM Lane LOS | F | - | - | B | - |
| HCM 95th %tile Q(veh) | 1.6 | - | - | 0.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 891 | 11 | 13 | 792 | 10 | 9 |
| Future Vol, veh/h | 891 | 11 | 13 | 792 | 10 | 9 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 100 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 968 | 12 | 14 | 861 | 11 | 10 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 980 | 0 | 1433 | 490 |
| Stage 1 | - | - | - | - | 974 | - |
| Stage 2 | - | - | - | - | 459 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 700 | - | 125 | 524 |
| Stage 1 | - | - | - | - | 326 | - |
| Stage 2 | - | - | - | - | 603 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 700 | - | 122 | 524 |
| Mov Cap-2 Maneuver | - | - | - | - | 122 | - |
| Stage 1 | - | - | - | - | 326 | - |
| Stage 2 | - | - | - | - | 591 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s/v | 0 | 0.17 | 25.98 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 192 | - | - | 700 | - |
| HCM Lane V/C Ratio | 0.108 | - | - | 0.02 | - |
| HCM Control Delay (s/veh) | 26 | - | - | 10.3 | - |
| HCM Lane LOS | D | - | - | B | - |
| HCM 95th %tile Q(veh) | 0.4 | - | - | 0.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.8 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1312 | 24 | 19 | 852 | 22 | 32 |
| Future Vol, veh/h | 1312 | 24 | 19 | 852 | 22 | 32 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 100 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1426 | 26 | 21 | 926 | 24 | 35 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1452 | 0 | 1943 | 726 |
| Stage 1 | - | - | - | - | 1439 | - |
| Stage 2 | - | - | - | - | 504 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 462 | - | 57 | 367 |
| Stage 1 | - | - | - | - | 185 | - |
| Stage 2 | - | - | - | - | 572 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 462 | - | 54 | 367 |
| Mov Cap-2 Maneuver | - | - | - | - | 54 | - |
| Stage 1 | - | - | - | - | 185 | - |
| Stage 2 | - | - | - | - | 546 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s/v | 0 | 0.29 | 70.38 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 110 | - | - | 462 | - |
| HCM Lane V/C Ratio | 0.535 | - | - | 0.045 | - |
| HCM Control Delay (s/veh) | 70.4 | - | - | 13.2 | - |
| HCM Lane LOS | F | - | - | B | - |
| HCM 95th %tile Q(veh) | 2.5 | - | - | 0.1 | - |

**CITY OF CARSON**

**PLANNING COMMISSION**

**RESOLUTION NO. __-____**

**A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF CARSON FINDING A CEQA EXEMPTION AND CONDITIONALLY APPROVING SITE PLAN AND DESIGN OVERLAY REVIEW NO. 00018-25 FOR A 51-UNIT CONDOMINIUM DEVELOPMENT AT 438 W. CARSON STREET (APN 7343019092)**

**WHEREAS,** on November 9, 2023, the Department of Community Development received an application from the Maupin Development for the following entitlements for a proposed 51-unit multi-family condominium development on a 1.23-acre site which is one unoccupied parcel located at 438 W. Carson Street (APN **7343-019-092**) and is legally described in Exhibit "A" attached hereto (the "Property").

- Site Plan Review and Design Review (DOR) No. 00018-25, to approve the development plan for the project; and
- Tentative Tract Map (TTM) No. 84347, to approve a subdivision of the project site into a lot for purposes of the 51-unit multi-family condominium development.

**WHEREAS** the proposed use and development is a 51-unit multi-family condominium development consisting of a four-story, 54-foot-high building, private and common open space, off-street parking, internal roadway, infrastructure connections, and landscaping. Five of the 51 units will be deed-restricted as affordable to low-income households. The proposed residential unit mix consists of 36 two-bedroom units and 15 one-bedroom units with unit sizes ranging from 705 square feet to 1,060 square feet. Each unit will have 60 square feet of private open space, and the project site would provide approximately 7,487 square feet of open recreation space.

**WHEREAS,** the application was deemed complete in April 2024, after the General Plan 2040 and Zoning Code Phase 1 were adopted. The General Plan and zoning standards that were in effect at that time apply to the project, including the General Plan land use designation of Downtown Mixed Use (DMU) and the zoning of Downtown Mixed-use (DMX) for the project site.

**WHEREAS,** pursuant to Section 9411.4(O) of the Zoning Code, the Director of Community Development may refer items to the Planning Commission where, in the Director's opinion, the public interest would be better served by a Planning Commission public hearing and action.

**WHEREAS,** studies and investigations were made, and a staff report with recommendations was submitted, and the Planning Commission, upon giving the required notice, did on the 28th day of October 2025, conduct a duly noticed public hearing as required by law to consider the project DOR application. Notice of the hearing was posted on the subject property and mailed to property owners of properties within a 750-foot radius by October 2, 2025.

**WHEREAS,** the Planning Commission, having duly reviewed and considered the project and all associated documents and evidence in the record, hereby intends to approve DOR No. 00018-25 for the project, subject to the conditions of approval set forth in Exhibit "B" hereto ("Conditions").

**WHEREAS** all legal prerequisites to the adoption of this Resolution have occurred.

**NOW, THEREFORE, THE PLANNING COMMISSION OF THE CITY OF CARSON, CALIFORNIA, HEREBY FINDS AND RESOLVES AS FOLLOWS:**

**SECTION 1.** The Planning Commission finds that the foregoing recitals are true and correct, and the same are incorporated herein by this reference as findings of fact.

**SECTION 2**. With respect to **Site Plan and Design Review No. (DOR) 00018-25,** the Planning Commission finds that, with the inclusion of the Conditions:

a) The proposed development plan is compatible with the applicable General Plan and the surrounding uses.

The General Plan 2040 sets forth goals and policies that provide guidance related to the community's vision for Carson. Goal 2 of the Housing Element is to encourage the development of a variety of housing to meet need of the broad spectrum of the community, and Policy 2-5 is to increase the number of owner-occupied units within condominiums and planned unit developments. The project furthers those goals and policies and is consistent with the applicable General Plan land use designation of Downtown Mixed Use, which allows residential development at a minimum density of 40 dwelling units per acre and with a minimum 0.2 FAR active ground floor or commercial use required, except the City may permit substitution of required minimum commercial space with other desired uses or community benefits.

The project would include 51 new residential units, including 36 two-bedroom units and 15 one-bedroom units, on a lot that is currently unoccupied. The density of the project is 41 dwelling units per acre, which meets the required minimum density.

The project does not include any active ground floor or commercial use, and is therefore required to provide a desired use or community benefit to qualify for the exception from the aforementioned General Plan requirement. To qualify for this exception the project includes five units that will be deed-restricted as affordable to low income households.

The proposed development is compatible with the surrounding uses, which are commercial and residential, including a mobile home park to the north, a multi-unit office building to the east, a medical office to the west and an apartment building and single-family homes to the south. The development plan is consistent with the surrounding neighborhood character and would supply new housing in the City. There is no applicable specific plan for the area.

b) The proposed development plan is compatible in architecture and design with existing and anticipated development in the vicinity, including the aspects of site planning, land coverage, landscaping, appearance and scale of structures and open spaces, and other features relative to a harmonious and attractive development of the area. All applicable development standards of the City's Zoning Code are met. The building's exterior design is contemporary architecture consisting of neutral stucco cement panels, accentuated by block volumes with a mix of contrasting colors and siding.

A parking art wall will provide street level frontage and is designed to enhance street level visual aesthetic and screening consisting of stucco, metal artwork and siding.

c) The proposed development plan provides for convenience and safety of circulation for pedestrians and vehicles. The development will have pedestrian and vehicular accessibility via one access driveway on Carson Street. Paved minimum 28-foot-wide internal roadway as private streets will provide circulation throughout the project site. The

proposed project features include landscaped and lighted pedestrian walkways connecting facilities within the site, as well as connections with the adjacent public sidewalks along the project frontage. Pedestrian access is provided from Carson Street along the frontage, between portions of the buildings and along the south, east, west perimeters for convenient and safe circulation. The project driveway is planned to accommodate full access (i.e., left-turn and right-turn ingress and egress traffic movements) on West Carson Street. The City's Traffic Engineer has reviewed and approved the project traffic analysis and project plans and determined that safe and adequate access and circulation will be provided, and the proposed project will not have a significant traffic effect. The Los Angeles County Fire Department reviewed the proposed development plan and determined there will be adequate emergency access subject to the conditions of approval. The proposed development will include 56 covered parking spaces and 59 open parking spaces (including one ADA van accessible space and four EV charging spaces), for a total of 115 parking spaces, and 9 bicycle spaces, all of which complies with the Carson Zoning Ordinance parking requirements. The project design will allow for and promote safe and convenient pedestrian and vehicle circulation.

d) There is no proposed signage for the project. Any signage associated with the project will be pursuant to a separate permit and shall exhibit attractiveness, effectiveness, and restraint in signing graphics and color.

e) The proposed development will be in one phase (i.e., will not be a phased development).

f) The required findings pursuant to Carson Municipal Code Section 9415.4(B), "Development and Site Review," can be and are made in the affirmative.

**SECTION 3.** With respect to **Tentative Tract Map No. 84347**, the Planning Commission finds that because the tentative map is solely for a condominium project (i.e., it is solely for creation of condominiums with no other proposed "division of land," as that term is defined in CMC 9202.10, the Director of Community Development, with the prior concurrence of the City Manager, is the "Advisory Agency" having authority to approve the map pursuant to CMC Section 9202.1 as amended by Ordinance No. 25-2513, which remains in effect until July 17, 2026. Accordingly a Condition has been included for the applicant to obtain approval of the tentative map by the Director, with the prior concurrence of the Community Development Director.:

**SECTION 4.** The Planning Commission further finds, based on the entire administrative record, the project is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15332, In-Fill Development, which consists of projects characterized as in-fill development meeting the conditions described below.

(a) The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.

(b) The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.

(c) The project site has no value as habitat for endangered, rare, or threatened species.

(d) Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.

(e) The site can be adequately served by all required utilities and public services.

The project meets all the critera for this CEQA categorical exemption. The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations. The development is within the City of

Carson jurisdiction, and the project site is not larger than five acres and is substantially surrounded by urban uses. There is no natural or native vegetation on the project site; the property has no value as a habitat of endangered species. The site was previously developed and can be adequately serviced by all required utilities and public services. Approval of the project will not result in any significant effects related to traffic, noise, air quality or water quality. With respect to traffic, scoping and VMT memos have been prepared for the project and reviewed by the City's Traffic Engineer, who upon doing so determined the proposed project will not have any significant traffic effects.

No exception to the categorical exemption applies under CEQA Guidelines Section 15300.2.

A Notice of Exemption shall be filed with the County Clerk of the County of Los Angeles pursuant to CEQA.

**SECTION 5.** Based on the findings and conclusions set forth above, the Planning Commission hereby approves DOR No. 00018-25, subject to the Conditions.

**SECTION 6.** This decision of the Planning Commission shall become effective and final 10 days after the date of the action unless an appeal is filed within that time in accordance with Section 9412.13 of the Zoning Code.

**SECTION 7.** The Secretary shall certify to the adoption of the Resolution and shall transmit copies of the same to the applicant.

**APPROVED** and **ADOPTED** this 28th day of October 2025.

**DIANNE THOMAS**
**CHAIRPERSON**

**ATTEST:**

**LAURA GONZALEZ**
**SECRETARY**

**EXHIBIT A: LEGAL DESCRIPTION [TO BE ATTACHED]**
**EXHIBIT B: CONDITIONS [TO BE ATTACHED]**

# EXHIBIT "A"

## Legal Description

The land referred to herein is situated in the State of California, County of Los Angeles, City of Carson and described as follows:

Lot 2 as shown Lot line adjustment No. 194-04, as evidenced by document recorded February 7, 2005 as Instrument No. 05-286031 of official records, being more Particularly described as follows: A portion of Parcel 1 and all of Parcel 2 of Parcel Map No. 19687 as recorded in Book 213, Pages 40 and 41 of Parcel Maps, in the Office of the Recorder of said County. Commencing at the Northwest corner of said Parcel 1, thence, Easterly along the Northerly line of said Parcel 1, N 89° 40' 20" E, 129.00 feet to the true point of beginning; thence, continuing along said Northerly line and the Northerly, Easterly and so jtherly lines of said Parcel 2, N 89° 40' 20" E, 157.50 feet, thence, S 0° 07' 59" E, 256.84 feet; thence, S 89° 48' 29" 63.50 feet; thence s 0° 07' 59" E, 66.00 feet; thence, N 89° 48' 29" W, 277.00 feet to the Southerly terminus of that certain course in the Westerly line of said Parcel 1, shown as N 0° 07' 59" W, 66.00 feet on said Parcel Map No. 19687, thence, Northerly along said Westerly line and its prolongation, N 0° 07' 59" W, 89.15 feet; thence, N 89° 52' 01" E, 56.00 feet; thence, N 0° 07' 59" W, 231.94 feet to the true point of beginning, said point also being the point of termination for this description

APN: 7343-019-092

**CITY OF CARSON**
**COMMUNITY DEVELOPMENT DEPARTMENT**
**PLANNING DIVISION**
**CONDITIONS OF APPROVAL**
**EXHIBIT "B"**

**SITE PLAN AND DESIGN REVIEW NO. 00018-25**

## GENERAL CONDITIONS

1. Site Plan and Design Overlay Review No. 00018-25is for the development of a 51-unit multi-family condominium development and related site improvements at 438 Carson Street (APN: 7343-019-092).

2. Development project approval for Design Overlay Review No. Review No. 00018-25 shall become null and void if building permits are not issued within two years of the effective date unless an extension of time is requested prior to expiration and approved by the Planning Commission.

3. The applicant shall submit a complete set of electronic plans that conform to all the Conditions of Approval to be reviewed and approved by the Planning Division prior to Building and Safety plan check submittal.

4. **Interim Development Impact Fee**: In accordance with Article XI (Interim Development Impact Fee Program) of the Carson Municipal Code ("CMC"), the applicant, property owner, and/or successor to whom this project approval is assigned ("Developer") shall be responsible for payment of one-time interim development impact fees ("IDIF") at the applicable rate detailed below for each unit of residential development constructed for the project. If the project increases or decreases in regard to the number of units constructed, the total IDIF amount will be adjusted accordingly at the applicable rate.

   Per CMC 11504, the IDIF shall be paid prior to issuance of the building permit(s), and the applicable IDIF rate (detailed below) shall be in effect at the time of such payment, unless the timing or requirements of payment is modified by applicable State Law. No building permit shall be issued prior to the full payment of the required IDIF amount, the payment which shall be made in one lump sum installment. IDIF amounts/rates are subject to adjustment every July 1st based on State of California Construction Cost Index (Prior March to Current March Adjustment), per CMC Section 11500.

   IDIF amounts/rates for residential development (all other) have been set at $16,918.01 per unit (1 bedroom or studio) and $21,147.52 (All Other) per unit for Fiscal Year 2025-26, effective July 1, 2025, through June 30, 2026. Affordable Housing Units are exempted from IDIF. Based on these rates, the Developer would be responsible for a total payment of IDIF in the amount of $930,490.82 for the proposed project, calculated as follows: 10 Residential Units (1 Bedroom/ Studio) X $16,918.01 per unit = $169,180.10 plus 36 Residential Units (All Other) X $21,147.52 per unit =

$761,310.72. The 5 Residential Units designated as Affordable Units are exempted from IDIF.

However, if the IDIF for the project is not paid in 2025-26 fiscal year (i.e., by June 30, 2026), a new IDIF rate/amount will apply for the period of July 1, 2026, through June 30, 2027, based on the IDIF rate for Fiscal Year 2026-27, and so on for subsequent fiscal year(s). The fee for Fiscal Year 2026-2027 IDIF has not yet been determined.

To understand the requirements in more detail, please visit the City's IDIF webpage at: https://ci.carson.ca.us/communitydevelopment/IDIFProgram.aspx and/or contact James Nguyen at jnguyen@carsonca.gov or 310-952-1700 ext. 1310

**Notice of Imposition of Interim Development Impact Fees; Right to Protest**

Pursuant to CMC Section 11503, Developer is hereby notified of the IDIF imposed on the project, as described and in the amount stated above. In accordance with Government Code Section 66020, Developer may protest the imposition of the IDIF on the project by complying with the requirements set forth in CMC 11900. Any such protest shall be filed within ninety (90) days after the effective date of the City's approval/conditional approval of the project.

If you have any questions or comments regarding this notice, please contact James Nguyen at jnguyen@carsonca.gov or (310) 952-1700 ext. 1310.

5. Developer shall comply with all city, county, state, and federal regulations applicable to the Project.

6. Developer shall make any necessary site plan and design revisions to the site plan and elevations approved by the Planning Commission to comply with all the conditions of approval and applicable Zoning Ordinance provisions. Any revisions will require review and approval by the Planning Division.

7. A modification of these conditions, including additions or deletions, may be considered upon filing of an application by Developer in accordance with the Carson Municipal Code.

8. Precedence of Conditions. If any of the Conditions of Approval alter a commitment made by Developer in another document, the conditions enumerated herein shall take precedence unless superseded by a Development Agreement, which shall govern over any conflicting provisions of any other approval.

9. City Approvals. All approvals by City, unless otherwise specified, shall be by the department head of the department requiring the condition. All agreements, covenants, easements, deposits, and other documents required herein where City is a party shall be in a form approved by the City Attorney. The Developer shall pay the cost for review and approval of such agreements and deposit necessary funds pursuant to a deposit agreement.

10. Deposit Account. A trust deposit account shall be established for all deposits and fees required in all applicable conditions of approval of the Project. The trust deposit shall be maintained by Developer with no deficits. The trust deposit shall be governed by

a deposit agreement. The trust deposit account shall be maintained separate from other City funds and shall be non-interest bearing. City may make demands for additional deposits to cover all expenses over a period of 60 days, and funds shall be deposited within 15 days of the request therefor, or work may cease on the Project.

11. Indemnification. The applicant, owner, and tenant(s), for themselves and their successors in interest ("Indemnitors"), agree to defend, indemnify and hold harmless the City of Carson, its agents, officers and employees, and each of them ("Indemnitees") from and against any and all claims, liabilities, damages, losses, costs, fees, expenses, penalties, errors, omissions, forfeitures, actions, and proceedings (collectively, "Claims") against Indemnitees to attack, set aside, void, or annul any of the project entitlements or approvals that are the subject of these conditions, and any Claims against Indemnitees which are in any way related to Indemnitees' review of or decision upon the project that is the subject of these conditions (including without limitation any Claims related to any finding, determination, or claim of exemption made by Indemnitees pursuant to the requirements of the California Environmental Quality Act), and any Claims against Indemnitees which are in any way related to any damage or harm to people or property, real or personal, arising from Indemnitors' operations or any of the project entitlements or approvals that are the subject of these conditions. The City will promptly notify Indemnitors of any such claim, action or proceeding against Indemnitees, and, at the option of the City, Indemnitors shall either undertake the defense of the matter or pay Indemnitees associated legal costs or shall advance funds assessed by the City to pay for the defense of the matter by the City Attorney. In the event the City opts for Indemnitors to undertake defense of the matter, the City will cooperate reasonably in the defense, but retains the right to settle or abandon the matter without Indemnitors' consent. Indemnitors shall provide a deposit to the City in the amount of 100% of the City's estimate, in its sole and absolute discretion, of the cost of litigation, including the cost of any award of attorneys' fees, and shall make additional deposits as requested by the City to keep the deposit at such level. If Indemnitors fail to provide or maintain the deposit, Indemnitees may abandon the action and Indemnitors shall pay all costs resulting therefrom and Indemnitees shall have no liability to Indemnitors.

12. Developer shall pay all applicable City fees when due, and at the applicable rate.

13. The Developer shall ensure that a fugitive dust control program to the satisfaction of the Community Development Director is implemented during construction. The program shall be depicted on the construction drawings/grading plans and the contractor shall be responsible for implementation.

14. To the satisfaction of the Community Development Director, temporary construction fencing equipped with sound blankets to minimize offsite noise shall be placed around the project site during construction.

15. Pursuant to Carson Municipal Code (CMC) Section 9202.1 as amended by City Ordinance No. 25-2513, the Community Development Director is the "Advisory Agency" having authority to approve Tentative Tract Map (TTM). Prior to issuance of any permits, Developer must obtain Community Development Director approval of

TTM No. 84347 pursuant to Part 3 (Tentative Maps) of Chapter 2 (Subdivision Regulations) of CMC Article IX (Planning and Zoning).

16. The applicant/Developer and property owner shall enter into an affordable housing covenant agreement with the City, which shall be recorded as a deed restriction on the parcel that is the subject of the project prior to approval of the Final Map pursuant to any Community Development Director approval of TTM No. 84347. The affordable housing covenant agreement shall run with the land and bind future owners and successors in interest. The terms of the draft agreement shall be reviewed and revised as appropriate by the Community Development Director. The recorded agreement shall ensure the continued affordability of all five (5) affordable housing units on the subject property to low-income households (50-80% AMI) for a minimum of 55 years for rental housing and 45 years for ownership housing. The agreement shall specify that said units shall be sold or rented at affordable housing cost, as defined in Section 50052.5 of the California Health and Safety Code, or affordable rent, as defined in Section 50053 of the California Health and Safety Code, to low-income-qualified households, and that the units must at all times be occupied by low-income-qualified households. The applicant/Developer or subsequent property manager shall be responsible to locate and qualify buyers or tenants who meet the affordable housing restrictions. The agreement shall be signed by the applicant/Developer, the property owner (if other than the applicant/Developer), and the City as parties. Any loans on the subject parcel must be subordinated to the agreement in a form acceptable to the City Attorney. The agreement shall include such other terms and conditions as reasonably required by the City consistent with this condition. The City may monitor the occupancy of the restricted units during the affordability period at applicant's/Developer's cost.

**COVENANTS, CONDITIONS AND RESTRICTIONS (CC&Rs)**

17. CC&Rs shall be submitted to the Planning Division for review and approval before issuance of building permits.

18. CC&Rs shall be executed by the property owner, not the HOA.

19. Any loans on the property shall be subordinated to the CC&Rs at the time of recordation, which will be concurrently with the Final Map.

**DRIVEWAY**

20. Decorative colored concrete flagstone patterned enhanced paving shall be provided at all driveways.

**FENCE/WALLS**

21. Chain link and barb wire fencing is prohibited on the exterior of the property, any location that is visible from the public right of way, any other public areas, and any location that is visible to any adjacent properties.
22. Prior to the issuance of any building permits, the Applicant shall submit a Wall and Fence Plan to the Planning Division for review and approval.
23. All walls shall include graffiti-resistant coating.

**LANDSCAPE/IRRIGATION**

24. Landscaping shall conform to all City codes regarding water conservation, and the proposed irrigation system shall include best water conservation practices.

25. Landscaping shall be provided with a permanently installed, automatic irrigation system and operated by an electrically timed controller station set for early morning or late evening irrigation. Installation, maintenance, and repair of all landscaping shall be the responsibility of the property owner.

26. Installation of 6" x 6" concrete curbs are required around all landscaped planter areas, except for areas determined by National Pollutant Discharge Elimination System (NPDES) permit or other applicable condition of approval that requires certain landscaped areas to remain clear of concrete curbs for more efficient storm water runoff flow and percolation. Revised landscaping and irrigation plans shall be reviewed and approved by the Planning Division should subsequent modifications be required by other concerned agencies regarding the removal of concrete curbs.

27. Installation, maintenance, and repair of all landscaping shall be the responsibility of the property owner.

28. Tree Protection fencing to be placed at the edge of the tree well with the following signage "Tree Protection Zone: No entry, no cutting branches, no storage of supplies/debris."

29. Contractor and Subcontractors shall be responsible for any damage to the existing Street trees (Koelreuteria) replacement will be at the contractor's expense. Replacement trees will be Gold Medallion (36" box size) to be watered weekly for 90 days and guaranteed for one year to the satisfaction of the City's Certified Arborist.

30. Revised Landscaping Plans are to reflect the following:

    a. T4 Phoenix dactylifera are to be 'Medjool' variety (see SW corner of Carson St and Figueroa St) to match center median trees.

31. Prior to City issuance of any permit, the applicant shall electronically submit landscape and irrigation plans drawn, stamped, and signed by a licensed landscape architect. Such plans are to be approved by the Planning Division.

32. All new and retrofitted landscape of 500 square feet or greater is subject to the Model Water Efficient Landscape Ordinance (MWELO) per Department of Water Resources Title 23, Chapter 2.7. The Developer shall include the signed MWELO project information, WELO water budget calculations and compliance checklist items on landscape plans, prior to the issuance of building permits.

**LIGHTING**

33. All exterior lighting shall be provided in compliance with the standards pursuant to Part 3-A / Division 4 (Lighting and Glare) of the Zoning Ordinance.

34. Such lights are to be directed on-site in such a manner as to not create a nuisance or hazard to adjacent street and properties, subject to the approval of the Planning Division.

**PARKING**

35. Parking areas and driveways shall remain clear. No encroachment into parking areas and/or driveways shall be permitted.

36. All areas used for the movement parking, loading, repair, or storage of vehicles shall be paved with either:

    a. Concrete or asphaltic concrete to a minimum thickness of three and one-half inches over four inches of crushed aggregate base; or

    b. Other surfacing material which, in the opinion of the City Engineer, provides equivalent life, service and appearance.

**RECIPROCAL EASEMENT AGREEMENT**

37. Prior to approval of Final Map and issuance of Building Permits, a reciprocal easement agreement (REA) shall be recorded: (1) against the parcel that is the subject of the project, for ingress and egress, sanitary sewer, utilities, drainage, water, right to grade, maintenance purposes, etc., over the common private driveways; and (2) against the parcel that is the subject of this project and the adjacent parcel to the west, for access shown to be utilized at the adjacent property.

38. REA must state it is effective immediately upon recordation, City is a third-party beneficiary and the REA cannot be amended or terminated without the written consent of the City.

39. REA shall be reviewed and approved in writing by the City prior to recordation.

**TRASH**

40. Trash collection shall comply with the requirements of the City's trash collection company.

**UTILITIES**

41. All utilities and aboveground equipment shall be constructed and located pursuant to Section 9126.8 (Utilities) of the Zoning Ordinance, unless otherwise provided for in these conditions.

42. Public utility easements shall be provided in the location as required by all utility companies with easements free and clear of obstructions, and electrical utilities shall be installed underground.

43. Developer shall remove at its own expense any obstructions within the utility easements that would interfere with the use for which the easements are intended.

44. Any aboveground air conditioning unit, utility cabinet or equipment cabinet shall be screened from the public right-of way by a decorative block wall or landscaping, to

the satisfaction of the Planning Division, and in compliance with public utility access requirements.

**BUILDING AND SAFETY DIVISION**

45. The building shall be addressed as 438 W. Carson Street, and an application to assign unit numbers shall be filed with the City prior to plan check submittal.
46. The second sheet of building plans is to list all conditions of approval and to include a copy of the Planning Commission Decision letter. This information shall be incorporated into the plans prior to the first submittal for plan check.
47. Plans prepared in compliance with the current Building Code shall be submitted to Building Division for review prior to permit issuance.
48. School Developmental Fees shall be paid to School District prior to the issuance of the building permit.
49. Fees shall be paid to the County of Los Angeles Sanitation District prior to issuance of the building permit.
50. 
51. In accordance with paragraph 5538(b) of the California Business and Professions Code, plans are to be prepared and stamped by a licensed architect.
52. Structural calculations prepared under the direction of an architect, civil engineer or structural engineer shall be provided.
53. The property shall be surveyed, and the boundaries marked by a land surveyor licensed by the State of California.
54. A separate building permit is required for any masonry perimeter walls of height taller than 6 feet above grade.
55. A geotechnical and soils investigation report is required; the duties of the soils engineer of record, as indicated on the first sheet of the approved plans, shall include the following:

    a) Observation of cleared areas and benches prepared to receive fill;

    b) Observation of the removal of all unsuitable soils and other materials;

    c) The approval of soils to be used as fill material;

    d) Inspection of compaction and placement of fill;

    e) The testing of compacted fills; and

    f) The inspection of review of drainage devices.

56. The owner shall retain the soils engineer preparing the Preliminary Soils and/or Geotechnical Investigation accepted by the City for observation of all grading, site preparation, and compaction testing. Observation and testing shall not be performed by other soils and/or geotechnical engineer unless the subsequent soils and/or geotechnical engineer submits and has accepted by the City, a new Preliminary Soils and/or Geotechnical Investigation.
57. A grading and drainage plan shall be approved prior to issuance of the building permit. The grading and drainage plan shall indicate how all storm drainage including

contributory drainage from adjacent lots is carried to the public way or drainage structure approved to receive storm water.

58. Stormwater Planning Program LID Plan Checklist (MS4-1 FORM) completed by Engineer of Record shall be copied on the first sheet of Building Plans and on the first sheet of Grading Plans. The form can be found at the following link https://www.dropbox.com/scl/fi/up1jbcg2e9sv4i0t6vrp3/CARSON-LID-PLAN-CHECKLIST-MS4-1-FORM.pdf?rlkey=1y5bsf2iladt6mzv56qgyz7cj&dl=0
59. Tuck-under parking facility not meeting the definition of "private garages" shall be classified as parking garage of S-2 Group Occupancy per Section 406.31 of the Building Code. If open parking garage is desired for the tuck-under parking facility, it shall be of Type I, II, or IV construction as required per Section 406.5.1, which shall be designed as a separate building from the residential building of Type VA construction per Section 510 or Section 705.3.
60. Tuck-under parking facility of Storage S-2 Group Occupancy shall be separated from the residential R-2 Group Occupancy or common area/commercial space of the building in accordance with Table 508.4 of the Building Code.
61. If Section 510.2 (podium type) of the Building Code is applied, the occupant load at the Roof Recreation Deck of Assembly Occupancy shall be limited to 299 per Item 5 under this section.
62. A building design with occupied roof recreation deck more than 4 stories above the level of exit discharge would trigger Section 503.1.4, 1004.7, and 1009.2.1 of the Building Code, where an elevator with standby power be used as an accessible means of egress is required.
63. Interior exit stairways and ramps shall terminate at an exit discharge or a public way per Section 1023.3 of the Building Code. Egress court shall be provided to facilitate the exit discharge from the termination point of the interior exit stairway to the public way per Section 1028.5 and 1029.
64. Where nonrated walls or unprotected openings enclose the exterior of the stairway or ramps and the walls or openings are exposed by other parts of the building at an angle of less than 180 degrees (3.14 rad), the building exterior walls within 10 feet (3048 mm) horizontally of a nonrated wall or unprotected opening shall have a fire-resistance rating of not less than 1 hour Per Section 1023.7 of the Building Code. Openings within such exterior walls shall be protected by opening protectives having a fire protection rating of not less than 3/4 hour. This construction shall extend vertically from the ground to a point 10 feet above the topmost landing of the stairway or ramp, or to the roof line, whichever is lower.
65. Project shall comply with the CalGreen Residential mandatory requirements.
66. In addition to the requirements in Section 4.106.4.2.2.1.1, all EV chargers, where installed, shall comply with the accessibility provisions for EV chargers in the California Building Code, Chapter 11B. EV ready spaces and EVCS in multifamily developments shall comply with California Building Code, Chapter 11A, Section 1109A.
67. All State of California disability access regulations for accessibility and adaptability shall be complied with.
68. Foundation inspection will not be made until the excavation has been surveyed and the setbacks are determined to be in accordance with the approved plans by a land

surveyor licensed by the State of California. THIS NOTE IS TO BE PLACED ON THE FOUNDATION PLAN IN A PROMINENT LOCATION.

69. Separate application and plan review is required for Electrical plans.
70. Separate application and plan review is required for Mechanical plans.
71. Separate application and plan review is required for Plumbing plans.
72. No form work or other construction materials will be permitted to encroach into adjacent property without written approval of the affected property owner
73. Fire-resistance rating requirements for exterior walls based on fire separation distance of 5 to 10 feet shall comply with Table 602 of the Building Code
74. Maximum area of exterior wall openings and degree of open protection based on fire separation distance of 5 to 10 feet shall comply with Table 705.8 of the Building Code
75. All fire sprinkler hangers must be designed, and their location approved by an engineer or an architect. Calculations must be provided indicating that the hangers are designed to carry the tributary weight of the water filled pipe plus a 250-pound point load. A plan indicating this information must be stamped by the engineer or the architect and submitted for approval prior to issuance of the building permit.
76. Separate permit is required for Fire Sprinklers.
77. A reciprocal easement for ingress and egress, sanitary sewer, utility, drainage, water shall be provided for each property that does not front on or have direct access to the public way to the City's review. Services to each property shall be underground and shall be located in a trench within this easement.
78. Building permits shall not be issued until the LLA documentation has been approved by the Planning Division, and a copy of the document is provided to the Building Division.
79. Building permits shall not be issued until the Final Map has been prepared to the satisfaction of the Building Official and the City Engineer.

**BUSINESS LICENSE**

80. All parties involved in the development of the Project, including but not limited to contractors and subcontractors, are required to obtain a City business license per Section 6310 of the Carson Municipal Code.

**PUBLIC WORKS DEPARTMENT, ENGINEERING SERVICES DIVISION**

*General Conditions*

81. All utilities and aboveground equipment shall be constructed and located pursuant to Section 9126.8 of the Zoning Ordinance, unless otherwise provided for in these conditions.
82. Public utility easements shall be provided in the locations as required by all utility companies with easements free and clear of obstructions.
83. The applicant shall remove at his/her own expense any obstructions within the utility easements that would interfere with the use for which the easements are intended.

84. The Developer shall submit an electronic copy of approved plans *(such as, Sewer, Street and/or Storm Drain Improvements, whichever applies)*, to the City of Carson – Engineering Division, prior to issuance of permit by Engineering Division.

85. Any existing off-site improvements damaged during the construction shall be removed and reconstructed per City of Carson PW Standard Drawings and to the satisfaction of the City Engineer.

86. A construction permit from the Engineering Division is required for any work to be done in the public right-of-way.

87. Construction bond for all work to be done within the public right of way shall be submitted and approved by Engineering Division prior to issuance of permit by Engineering Division.

88. Proof of Worker's Compensation and Liability Insurance shall be submitted to the City prior to issuance of permit by Engineering Division.

89. Following Community Development Director approval of TTM No. 84347, unless otherwise provided in the conditions of such approval, a Final Map prepared by, or under the direction of, a pre-1982 Registered Civil Engineer or Licensed Land Surveyor must be processed through the City Engineer for City Council approval prior to being filed with the County Recorder.

90. CC&R's (covenants, conditions, and restrictions) to address drainage responsibilities are required.

91. Unless otherwise provided in conditions of Community Development Director approval of TTM No. 84347: (1) Private easements will not be granted or recorded within areas proposed to be granted, dedicated, or offered for dedication until after the Final Map is filed with the County Recorder; (2) If easements are granted after the date of tentative map approval, a subordination must be executed by the easement holder prior to the filing of the Final Map.

92. Unless otherwise provided in conditions of Community Development Director approval of TTM No. 84347, prior to Final Map approval, quitclaim or relocate any easements interfering with building locations to the satisfaction of the City, appropriate agency, or entity.

93. Provide suitable turnaround and unless otherwise provided in conditions of Community Development Director approval of TTM No. 84347, label the driveways "Private Driveway and Fire Lane" on the Final Map to the satisfaction of the Fire Department.

94. The Developer shall install separate sewer laterals to individually serve each building in the development. Installation and dedication of main line sewers may be necessary to meet this requirement.

95. Unless otherwise provided in conditions of Community Development Director approval of TTM No. 84347, a final guarantee will be required at the time of the filing of the Final Map with the County Recorder/County Clerk's Office.

*Prior to Issuance of Building Permits*

96. Process and obtain Community Development Director approval of a required Lot Line Adjustment pursuant to CMC 9207.26 or other applicable law prior to issuance of any Building Permit.

97. Final Map shall be recorded (i.e., filed for record with the County Recorder), following Community Development Director approval of TTM No. 84347 and City Council approval of the Final Map.

98. Soils report, sewer area study, drainage concept, hydrology study and stormwater quality plan shall be submitted for review and approval. Building Permit issuance will not be granted until the required soils, sewer, drainage concept, hydrology study and stormwater information have been received and found satisfactory. Comply with mitigation measures recommended in the approved soils, sewer area study, drainage concept, hydrology study and stormwater quality plan.

99. The Developer shall submit improvement plans to the Engineering Division showing all the required improvements in the public right of way for review and approval of the City Engineer. A copy of approved conditions of approval shall be attached to the plans when submitted.

    a) Sewer Main improvements as determined by the sewer area study

    b) Storm Drain Improvements (if any) as determined by the aforementioned requirement.

100. Off-site improvements *(e.g. driveways, sidewalk, parkway drains, trees, curb/gutter etc.)* shown on the grading plans must provide a concurrent submittal to City of Carson Engineering Division. Off-site improvements may be shown on a separate set of street improvement plans.

101. Prior to issuance of Grading permit, the Developer shall obtain clearance from City of Carson Engineering Division.

102. Drainage/Grading plan prepared by a registered Civil Engineer shall be submitted for approval of the Building and Safety Division. The Developer shall submit a copy of the approved Drainage/Grading plans on bond paper to the City of Carson – Engineering Services Division of the Department of Public Works.

103. The Developer shall submit a sewer area study to the Los Angeles County Department of Public Works (LACDPW) to determine if capacity is adequate in the sewerage system to be used as the outlet for the sewer of this development. If the system is found to have insufficient capacity, the problem must be addressed and resolved to the satisfaction of the L.A. County Sewer Department.

104. The Developer shall comply with applicable LID requirements (*Carson Municipal Code 5809*) and shall include Best Management Practices necessary to control storm water pollution from construction activities and facility operations to the satisfaction of City Building and Safety, LA County DPW and the City Engineer.

105. The Developer shall execute and provide to the City Engineer a written statement from the water purveyor indicating the water system will be operated by the purveyor and that under normal conditions, the system will meet the requirements for the Project and that water service will be provided to each building.

106. A water system maintained by the water purveyor, with appurtenant facilities to serve all buildings (and other structures with respect to fire suppression needs) in the

Project, must be provided. The system shall include fire hydrants of the type and location as determined by the Fire Department. The water mains shall be sized to accommodate the total domestic and fire flows.

107. The City of Carson Engineering Division shall contact LA County Department of Public Works for street lighting Conditions of Approval.

108. The Developer shall execute and provide to the City Engineer, a will serve letter from the utility companies.

*Prior to Issuance of Certificate of Occupancy*

109. The Developer shall comply with all requirements from L.A. County Sewer Maintenance Division for maintenance of new and/or existing sewer main relating to the Project, prior to release of all improvement bonds.

110. The Developer shall construct and guarantee the construction of all required drainage infrastructures in accordance with the requirements and recommendations of the hydrology study, subject to the approval of the City Engineer.

111. Repair any broken or raised/sagged sidewalk, curb, and gutter within the public right of way along Carson St. abutting this proposed development per City of Carson PW Standard Drawings and to the satisfaction of the City Engineer.

112. Fill in any missing sidewalk within the public right of way along Carson St. abutting this proposed development.

113. Remove and replace any broken/damaged driveway approach within the public right of way along Carson St. abutting this proposed development per City of Carson PW Standard Drawings and to the satisfaction of the City Engineer.

114. Remove unused driveway approach if any, within the public right of way along Carson St. abutting this proposed development and replace it with full height curb and gutter and sidewalk per City of Carson PW Standard Drawings and to the satisfaction of the City Engineer.

115. The Developer shall construct new driveway approach per City of Carson PW Standard Drawings and in compliance with the ADA requirements. The Developer shall protect or relocate any facilities to accommodate the proposed driveway approach. Developer may be required to grant an easement to the City to accommodate the construction of the driveway and meet the ADA requirement. The maximum driveway approach width allowed for the site is 28 feet.

116. Refurbish parkway grass. Replant parkway grass in the public right of way along Carson Street abutting this proposed development to the satisfaction of the City Engineer. Install irrigation system for the purpose of maintaining the parkway trees and other vegetation to be planted within the public right of way along Carson Street abutting this proposed development.

117. All new utility lines servicing the proposed development shall be underground to the satisfaction of the City Engineer.

118. Install striping and pavement legend per City of Carson PW Standard Drawings.
119. If needed, easements shall be granted to the City, appropriate agency, or entity for the purpose of ingress, egress, construction, and maintenance of all infrastructures constructed and handicap access for this development to the satisfaction of the City Engineer and or appropriate agency or entity.
120. All infrastructures necessary to serve the proposed development (water, sewer, storm drain, and street improvements) shall be in operation prior to the issuance of Certificate of Occupancy.

**PUBLIC WORKS DEPARTMENT, WATER QUALITY**

*Prior to issuance of Building Permit, the proposed development is subject to the following*

121. Per City of Carson Municipal Code Section 5809, Developer shall comply with all applicable Low Impact Development (LID) requirements and shall include Best Management Practices necessary to control storm water pollution from construction activities and facility operations to the satisfaction of the City Engineer.
122. Per City of Carson Municipal Code Section 5809(d)(2), Developer shall comply with all street and road construction of 10,000 sq. ft. or more of impervious surface, shall manage wet weather with Green Infrastructure: Greens Streets.
123. Developer shall apply for a Construction Activities Storm Water General Permit from the State Water Resources Control Board.
124. Developer shall provide an approved SWPPP stamped by the Building and Safety Division along with WDID number.
125. Developer shall provide contact information of the Qualified Storm Water Developer (QSD) and/or Qualified SWPPP (Storm Water Pollution Prevention Plan) Developer (QSP) of the site to the City via e-mail to rjen@carsonca.gov.
126. Developer shall submit digital copies of the LID/NPDES/Grading Plans, Hydrology and Hydraulic analysis concurrently to City of Carson, Engineering Services Department and Building & Safety Division. Deliver City copy via e-mail to rjen@carsonca.gov
127. Developer shall complete, sign, and return the Stormwater Planning Program LID Plan Checklist form and return to the City via e-mail to rjen@carsonca.gov.

*Prior to Issuance of Certificate of Occupancy*

128. For any structural and/or treatment control device installed, Developer shall record a maintenance covenant pursuant to Section 106.4.3 of the County of Los Angeles Building Code and title 12, Chapter 12.80 of the Los Angeles County Code relating to the control of pollutants carried by storm water runoff. In addition, an exhibit shall be attached to identify the location and maintenance information for any structural and/or treatment control device installed.
129. Developer shall complete and submit digital BMP Reporting Template Spreadsheet to Roland Jen at rjen@carsonca.gov.

130. The covenant shall receive approval by the City Engineer prior to recordation with the Los Angeles County Register Recorder/County Clerk.

131. RECORDATION is the responsibility of the Developer. Provide a copy of the recorded covenant agreement to the City Engineer.

132. Inspection will be conducted once a year after all Post Construction Best Management Practices (BMP) are constructed.

133. Developer shall provide an approved Notice of Termination (NOT) by the State Water Resources Control Board.

**PUBLIC WORKS DEPARTMENT, TRAFFIC ENGINEER**

134. The access driveway on Carson Street shall be constructed per City of Carson Standard No. 111 or No. 112.

135. All project driveways and sidewalks shall be built to meet ADA accessibility standards and built per City Standards.

**FIRE DEPARTMENT – LOS ANGELES COUNTY FIRE DEPARTMENT**

1. The proposed development for the project shall obtain approval from the Los Angeles County Fire Department and comply with all Los Angeles County Fire Department requirements prior to the issuance of any permits.

**SHERIFF DEPARTMENT –LOS ANGELES COUNTY**

1. A Construction Traffic Management Plan shall be implemented as part of the proposed Project to address construction-related traffic congestion and emergency access issues. If temporary lane closures are necessary for the installation of utilities, emergency access shall be always maintained. Flag persons and/or detours should also be provided as needed to ensure safe traffic operations, and construction signs shall be posted to advise motorists of reduced construction zone speed limits. On-site inspector shall notify the Carson Station when these measures are in place.