GARVEY WALNUT MIXED USE PROJECT TRAFFIC IMPACT ANALYSIS

City of Rosemead

May 3, 2021

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Traffic Engineering ● Transportation Planning ● Parking ● Noise & Vibration
Air Quality ● Global Climate Change ● Health Risk Assessment

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City of Rosemead

May 3, 2021

prepared by

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Project No. 19302

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EXECUTIVE SUMMARY

The purpose of this Traffic Impact Analysis is to provide an assessment of traffic operations resulting from development of the proposed Garvey Walnut Mixed Use Project and to identify measures necessary to mitigate potentially significant traffic impacts. This report analyzes traffic impacts for the anticipated project opening year in Year 2022. Although this is a technical report, effort has been made to write the report clearly and concisely. A glossary is provided in Appendix A to assist the reader with terms related to transportation engineering.

Project Description

The project site is located at the northwest corner of Walnut Grove Avenue and Garvey Avenue in the City of Rosemead. The project site is currently occupied with office land uses.

The project is proposing to develop the site with 42 condominium dwelling units, 5,470 square feet of office, 5,500 square feet of community hall (plus 1,272 square feet storage area), 1,130 square feet of café/food service, 5,274 square feet of retail/service and ancillary uses including a recreation room, gym, library, and manager's office. As a project design feature, the project is proposing full access to Walnut Grove Avenue. The proposed project is anticipated to be constructed and fully operational by year 2022.

Existing Conditions

The study intersections currently operate at Levels of Service C or better during the peak hours for Existing conditions (see Table 1).

Project Trips

The proposed project is forecast to generate a total of approximately 1,009 daily trips, including 143 trips during the AM peak hour and 65 trips during the PM peak hour (see Table 2).

Forecast Levels of Service

The proposed project is forecast to result in no Level of Service operational impacts at the off-site study intersections during the weekday AM and PM peak hours for the scenarios evaluated.

Congestion Management Program

The proposed project would result in no operational CMP impact as it does not meet the thresholds requiring a traffic impact analysis for CMP purposes and no further CMP analysis is warranted. A transit impact review was conducted for compliance with the CMP requirements and found that the proposed project is forecast to have a nominal impact on transit service.

Site Access and Circulation

The proposed project shall construct the following improvements as project design features to provide project site access:

- Construct the Walnut Grove Avenue (NS) at Project Driveway (EW) to provide one inbound lane and one outbound lane with eastbound stop-control and the following lane configurations:

- Northbound: two through lanes
- Southbound: one through lane and shared through/right turn lane
- Eastbound: one shared left/ right turn lane
- Westbound: not applicable

Operational Improvements

No off-site operational improvements were identified since the proposed project is forecast to result in no operational traffic impact at the off-site study intersections for the scenarios analyzed.

VMT Assessment

The proposed project satisfies the screening criteria for low-VMT area and may be presumed to result in a less than significant VMT impact in accordance with City of Rosemead VMT guidelines.

1. INTRODUCTION

This section describes the purpose of this traffic impact analysis, project location, proposed development, and study area. Figure 1 shows the project location map. Figure 2 illustrates the project site plan.

PROJECT DESCRIPTION

The project site is located at the northwest corner of Walnut Grove Avenue and Garvey Avenue in the City of Rosemead. The project site is currently occupied with office land uses.

The project is proposing to develop the site with 42 condominium dwelling units, 5,470 square feet of office, 5,500 square feet of community hall (plus 1,272 square feet storage area), 1,130 square feet of café/food service, 5,274 square feet of retail/service and ancillary uses including a recreation room, gym, library, and manager's office. Vehicular access is proposed at Walnut Grove Avenue. The proposed project is anticipated to be constructed and fully operational by year 2022.

STUDY AREA

Based on the study intersections identified in the approved scoping agreement (Appendix B), the study area consists of the following study intersections within the City of Rosemead:

Study Intersections	Jurisdiction
1. I-10 Eastbound Ramps (NS) at Hellman Avenue (EW)	Caltrans
2. Walnut Grove Avenue (NS) at Hellman Avenue (EW)	Rosemead
3. Walnut Grove Avenue (NS) at Project Driveway (EW)	Rosemead
4. Walnut Grove Avenue (NS) at Garvey Avenue (EW)	Rosemead

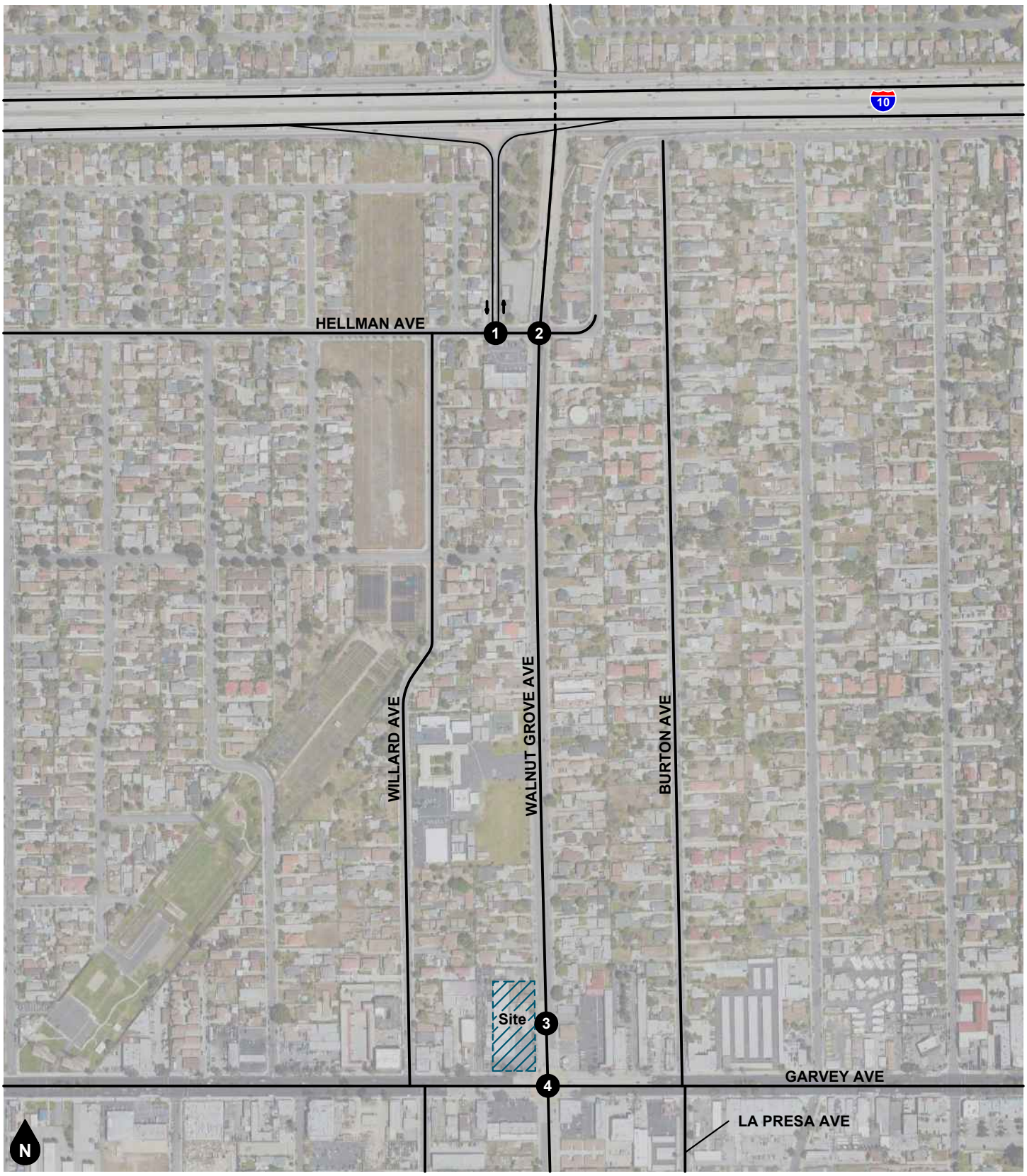
ANALYSIS SCENARIOS

According to the preliminary review of the scoping agreement by the City of Rosemead (see Appendix B, the following traffic conditions shall be included in a traffic impact analysis:

a) Existing Conditions;
b) Existing Plus Project Conditions;
c) Opening Year (Existing + Growth Factor + Cumulative Projects) Conditions; and
d) Opening Year Plus Project Conditions

Accordingly, the following scenarios are analyzed during typical weekday AM and PM peak hour conditions (with mitigation as necessary):

- Existing Conditions
- Existing Plus Project Conditions
- Opening Year (2022) Without Project Conditions
- Opening Year (2022) With Project Conditions



Legend

(#) Study Intersection

Figure 1
Project Location Map

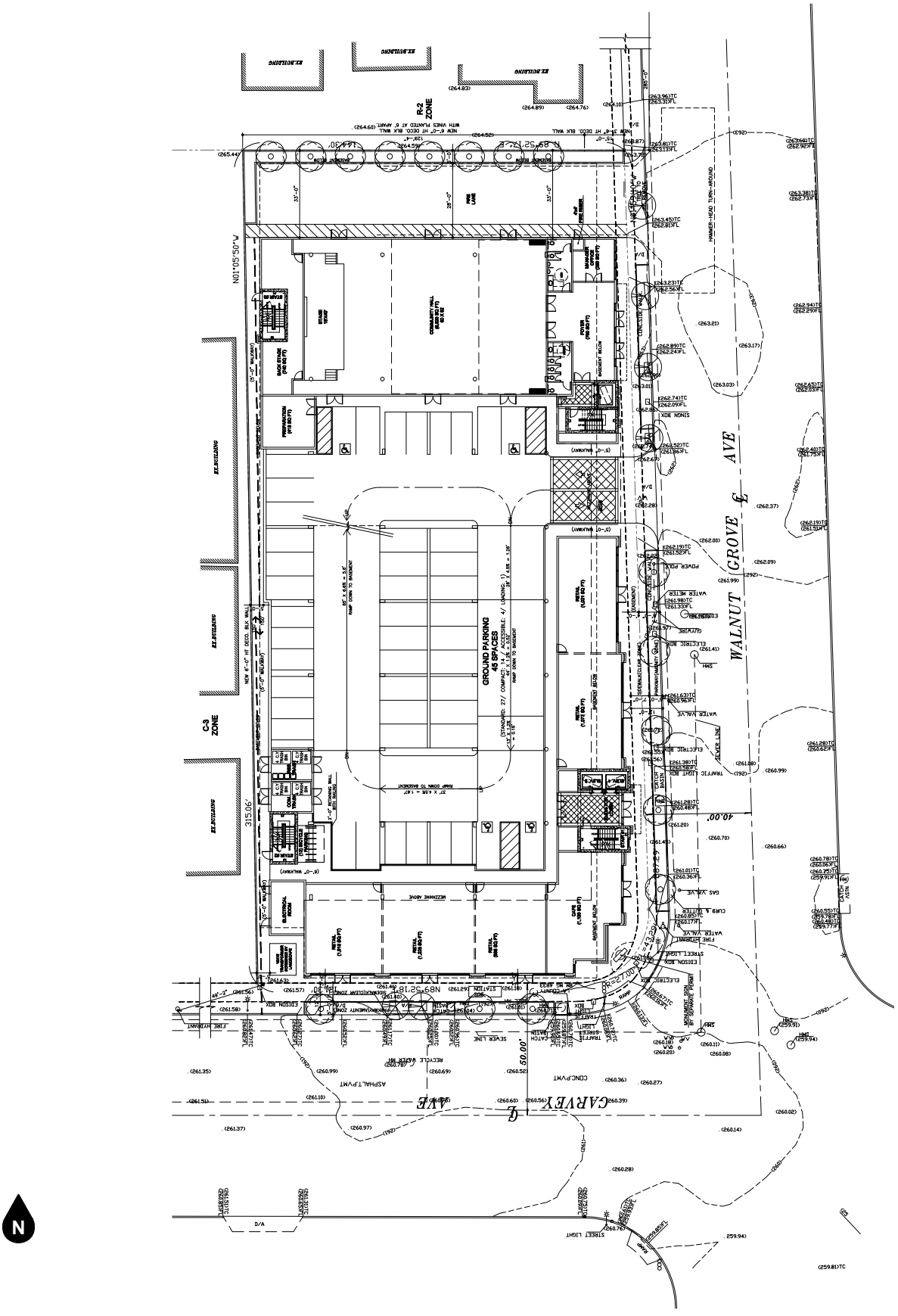


Figure 2
Site Plan

2. METHODOLOGY

This section discusses the analysis methodologies used to assess transportation facility performance as adopted by the respective jurisdictional agencies.

INTERSECTION CAPACITY UTILIZATION

In accordance with City of Rosemead guidelines, analysis of signalized intersections is based on the Intersection Capacity Utilization (ICU) methodology. The ICU methodology compares the volume of traffic using the intersection to the capacity of the intersection. The resulting volume-to-capacity (V/C) ratio represents that portion of the hour required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity. The volume-to-capacity ratio is then correlated to a performance measure known as Level of Service based on the following thresholds:

Level of Service	Volume/Capacity Ratio
A	≤ 0.600
B	0.601 to 0.700
C	0.701 to 0.800
D	0.801 to 0.900
E	0.901 to 1.000
F	> 1.000

Source: Transportation Research Board, Interim Materials on Highway Capacity, Transportation Research Circular No. 212, January 1980.

Level of Service is used to qualitatively describe the performance of a roadway facility, ranging from Level of Service A (free-flow conditions) to Level of Service F (extreme congestion and system failure). ICU analysis was performed using the Vistro software.

Consistent with City of Rosemead guidelines, this analysis uses the following input parameters for the ICU analysis: 1,800 vehicles per hour per lane for through and turn lanes, 3,240 vehicles per hour for dual left-turn lanes, and a total clearance time of 10 percent.

If the paved lane width of a shared through/right turn lane is wide enough to permit a separate right turn, it is common practice for a right turn lane to be considered "de facto." To function as a de facto right turn lane there must be sufficient width for right turning vehicles to travel outside the through lane. This analysis uses a minimum lane width of 19 feet from curb to lane stripe. Additionally, a de facto right turn lane was only considered where on-street parking is prohibited near the intersection approach.

INTERSECTION DELAY METHODOLOGY

The technique used to assess the performance of unsignalized intersections in the City of Rosemead and California Department of Transportation (Caltrans) freeway ramp intersections is known as the intersection delay methodology based on the procedures contained in the Highway Capacity Manual. The methodology compares the traffic volume using the intersection to the capacity of the intersection to calculate the delay associated with the traffic control at the intersection. The intersection delay is then correlated to a performance measure known as Level of Service based on the following thresholds:

Level of Service	Intersection Control Delay (Seconds / Vehicle)	
	Signalized Intersection	Unsignalized Intersection
A	≤ 10.0	≤ 10.0
B	> 10.0 to ≤ 20.0	> 10.0 to ≤ 15.0
C	> 20.0 to ≤ 35.0	> 15.0 to ≤ 25.0
D	> 35.0 to ≤ 55.0	> 25.0 to ≤ 35.0
E	> 55.0 to ≤ 80.0	> 35.0 to ≤ 50.0
F	> 80.0	> 50.0

Source: Transportation Research Board, Highway Capacity Manual (6th Edition).

Level of Service is used to qualitatively describe the performance of a roadway facility, ranging from Level of Service A (free-flow conditions) to Level of Service F (extreme congestion and system failure). Intersection delay analysis was performed using the Vistro software.

If the paved lane width of a shared through/right turn lane is wide enough to permit a separate right turn, it is common practice for a right turn lane to be considered "de facto." To function as a de facto right turn lane there must be sufficient width for right turning vehicles to travel outside the through lane. This analysis uses a minimum lane width of 20 feet from curb to lane stripe.

PERFORMANCE STANDARDS

The City of Rosemead has established minimum acceptable Level of Service standards during peak hour conditions of LOS D or better for intersections. In accordance with CEQA provision, any Level of Service impacts identified are solely for General Plan consistency and would not constitute a significant impact under CEQA.

NEED FOR IMPROVEMENTS

In accordance with the City of Rosemead guidelines, a project operational traffic impact occurs if the project related increase in the volume-to-capacity ratio equals or exceeds the thresholds shown below:

Significant Impact Threshold for Intersections		
Level of Service	Volume/Capacity	Incremental Increase
F	1.01 or more	0.02 or more

Based on the California Department of Transportation established performance standards, a potentially operational traffic impact is defined to occur if the addition of project generated trips is forecast to cause the performance of a State Highway study intersection to change from acceptable Level of Service (D or better) to unacceptable Level of Service (E or F).

If a project is forecast to cause an operational traffic impact, feasible improvements that will reduce the operational impact to an acceptable LOS are identified. Improvements can be in many forms, including the addition of lanes, traffic control modification, or demand management measures. If no feasible improvements can be identified for an operationally deficient facility, the operational traffic impact will remain deficient.

3. EXISTING CONDITIONS

EXISTING ROADWAY SYSTEM

Figure 3 identifies the lane geometry and intersection traffic controls for Existing conditions based on a field survey of the study area. Regional access to the project area is provided by the I-10 Freeway north of the project site. The key north-south roadway providing local circulation is Walnut Grove Avenue. The key east-west roadways providing local circulation are Hellman Avenue and Garvey Avenue.

Walnut Grove Avenue is a 4-lane undivided to divided roadway in the study area. Walnut Grove Avenue is classified as a Major Arterial in the City of Rosemead Circulation Plan. On-street parking is generally permitted in the project area south of Hellman Avenue and prohibited north of Hellman Avenue. No bicycle facilities are provided in the study area. Sidewalks are provided on both sides of the roadway south of Hellman Avenue and on the west side of the roadway north of Hellman Avenue.

Hellman Avenue is a 2-lane undivided roadway in the study area. Hellman Avenue is classified as a Collector in the City of Rosemead Circulation Plan. On-street parking is intermittently permitted in the project area. On-street bicycle facilities are provided in the study area. No bicycle facilities are provided in the study area. Sidewalks are provided on both sides of the roadway.

Garvey Avenue is a 4-lane divided roadway in the study area. Garvey Avenue is classified as a Major Arterial in the City of Rosemead Circulation Plan. On-street parking is intermittently permitted in the project area. On-street bicycle facilities are provided in the study area. No bicycle facilities are provided in the study area. Sidewalks are provided on both sides of the roadway.

PEDESTRIAN FACILITIES

Existing pedestrian facilities in the project vicinity are shown on Figure 4.

BICYCLE ROUTES

No on-street bicycle facilities are provided in the project area. The City of Rosemead Existing Bicycle Routes and Potential Future Routes is depicted on Figure 5, and shows potential future bicycle facilities in the project area along Walnut Grove Avenue and Garvey Avenue.

TRANSIT FACILITIES

Figure 6 and Figure 7 show the existing transit routes available in the project vicinity. As shown on Figure 6, Foothill Transit does not service the study area. As shown on Figure 7, Los Angeles County Metropolitan Transportation Authority Routes 176 and Rosemead Explorer service Walnut Grove Avenue, and Routes 70, 770, and Rosemead Explorer service Garvey Avenue. Bus stops are located along Garvey Avenue including on at the southwest corner of the Walnut Grove Avenue and Garvey Avenue intersection.

GENERAL PLAN CONTEXT

Figure 8 shows the City of Rosemead Circulation Plan roadway classifications map. This figure shows the nature and extent of arterial and collector highways that are needed to adequately serve the ultimate development depicted by the Land Use Element of the General Plan.

EXISTING TRAFFIC VOLUMES

Figure 9 shows the Existing average daily traffic volumes. The Existing average daily traffic volumes have been factored from peak hour intersection turning movement volumes using the following formula for each intersection leg:

Evening Peak Hour (Approach Volume + Exit Volume) x 10 = Leg Volume.

Existing peak hour volumes are based upon AM peak period and PM peak period intersection turning movement counts. The AM peak period was counted between 7:00 AM and 9:00 AM and the PM peak period was counted between 4:00 PM and 6:00 PM. The actual peak hour within the peak period is the four consecutive 15-minute periods with the highest total volume. Thus, the weekday PM peak hour at one intersection may be 4:45 PM to 5:45 PM if those four consecutive 15-minute periods have the highest combined volume. Intersection turning movement count worksheets are provided in Appendix C.

The current COVID-19 pandemic and related stay-at-home orders imposed by state and local municipalities have resulted in a substantial decrease in traffic volumes. In addition to the current public health restrictions, it is anticipated that the pandemic may have a lasting effect on travel behaviors, such as an increase telecommuting. To provide a conservative analysis, the Existing conditions traffic volumes used in this analysis are based on historic counts provided by City of Rosemead staff with adjustments applied with the intent to represent pre-pandemic conditions for the current year. This approach is likely to overestimate actual volumes for the near future since many commuters are expected to continue working from home even as stay-at-home orders are eased.

Historical intersection turning movement counts conducted in 2018 were obtained for the study intersections of Walnut Grove Avenue at Hellman Avenue and Walnut Grove Avenue at Hellman Avenue. The AM and PM peak hour traffic volumes based on these historical counts were adjusted by a growth rate of 0.8 percent per year over a two-year period to reflect existing year 2020 conditions prior to issuance of statewide stay-at-home orders. The growth rate was obtained from the County of Los Angeles Congestion Management Program.

The combined AM and PM peak hour turning movement volumes from these modified traffic counts were then compared to the combined AM and PM peak hour turning movement volumes for the current traffic counts conducted in October 2020. An AM Peak hour increase of 91.91% was applied to bring the current traffic counts (October 2020) to a comparable level as calculated using the historic 2018 traffic counts with annual ambient growth rate (0.8%) applied. A PM Peak hour increase of 33.96% was applied to bring the current traffic counts (October 2020) to a comparable level as calculated using the historic 2018 traffic counts with annual ambient growth rate (0.8%) applied.

Therefore, all of the current October 2020 turning movement counts were increased by 91.91% during the AM Peak Hour and 33.96% during the PM peak hour to reflect pre-pandemic conditions. These spreadsheets, and the growth rate increased intersection turning movement counts, are included in Appendix C.

Figure 10 and Figure 11 show the Existing AM peak hour and PM peak hour intersection turning movement volumes. Peak hour volumes shown in the figures and Level of Service calculations throughout this report are based on the measured count data with adjustments described above.

EXISTING INTERSECTION LEVEL OF SERVICE

The intersection Levels of Service for Existing conditions have been calculated and are shown in Table 1. Existing intersection Level of Service worksheets are provided in Appendix D.

As shown in Table 1, the study intersections currently operate at Levels of Service C or better during the peak hours for Existing conditions.

Table 1
Existing Intersection Level of Service

ID	Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
			ICU[2]	LOS[3]	ICU[2]	LOS[3]
1.	I-10 EB Ramps at Hellman Ave	TS	0.591	A	0.583	A
2.	Walnut Grove Ave at Hellman Ave	TS	0.685	B	0.726	C
4.	Walnut Grove Ave at Garvey Ave	TS	0.696	B	0.765	C

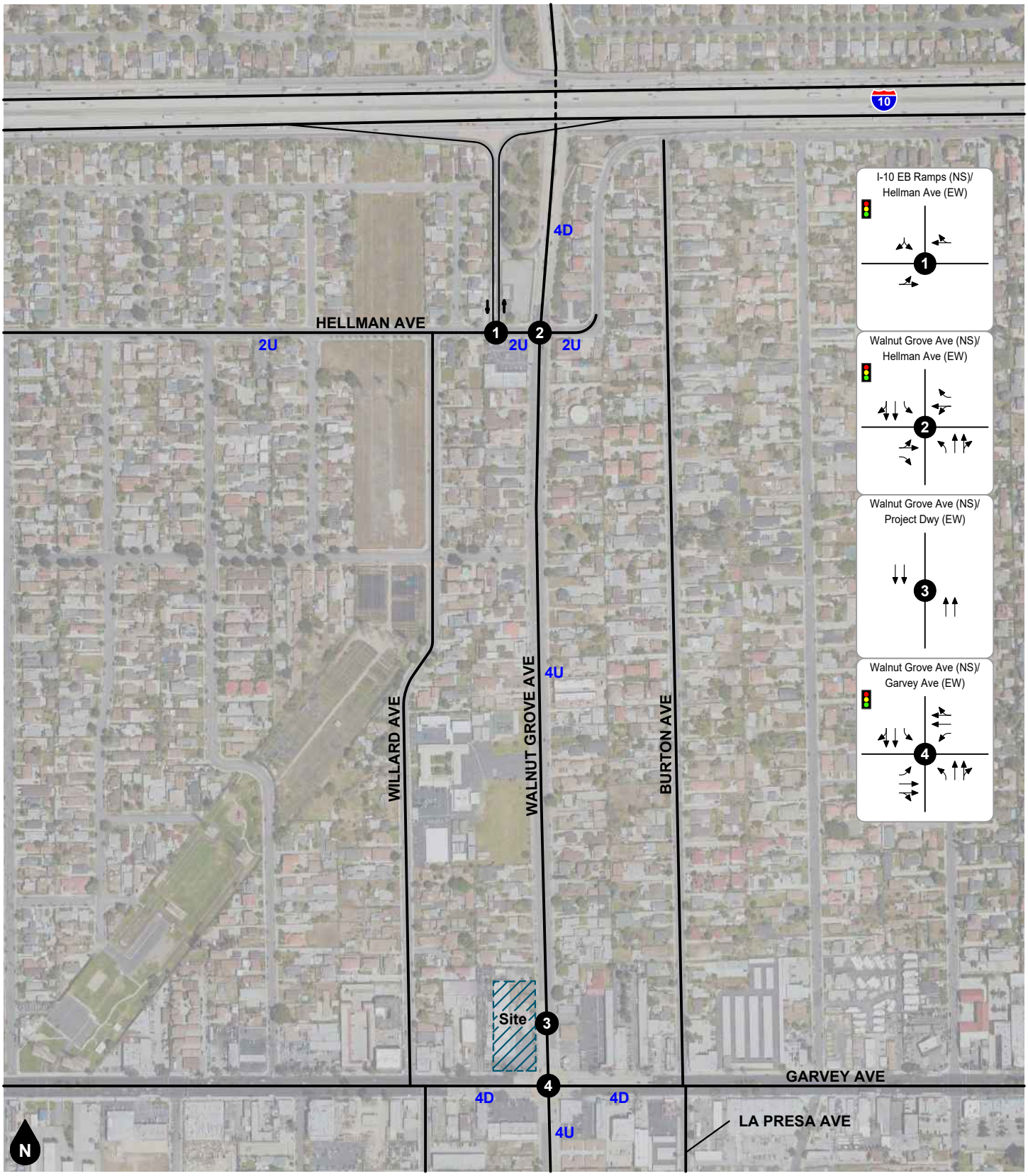
Caltrans Highway Capacity Methodology Analysis						
ID	Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
			Delay[2]	LOS[3]	Delay[2]	LOS[3]
1.	I-10 EB Ramps at Hellman Ave	TS	34.3	C	34.0	C

Notes:

(1) TS = Traffic Signal

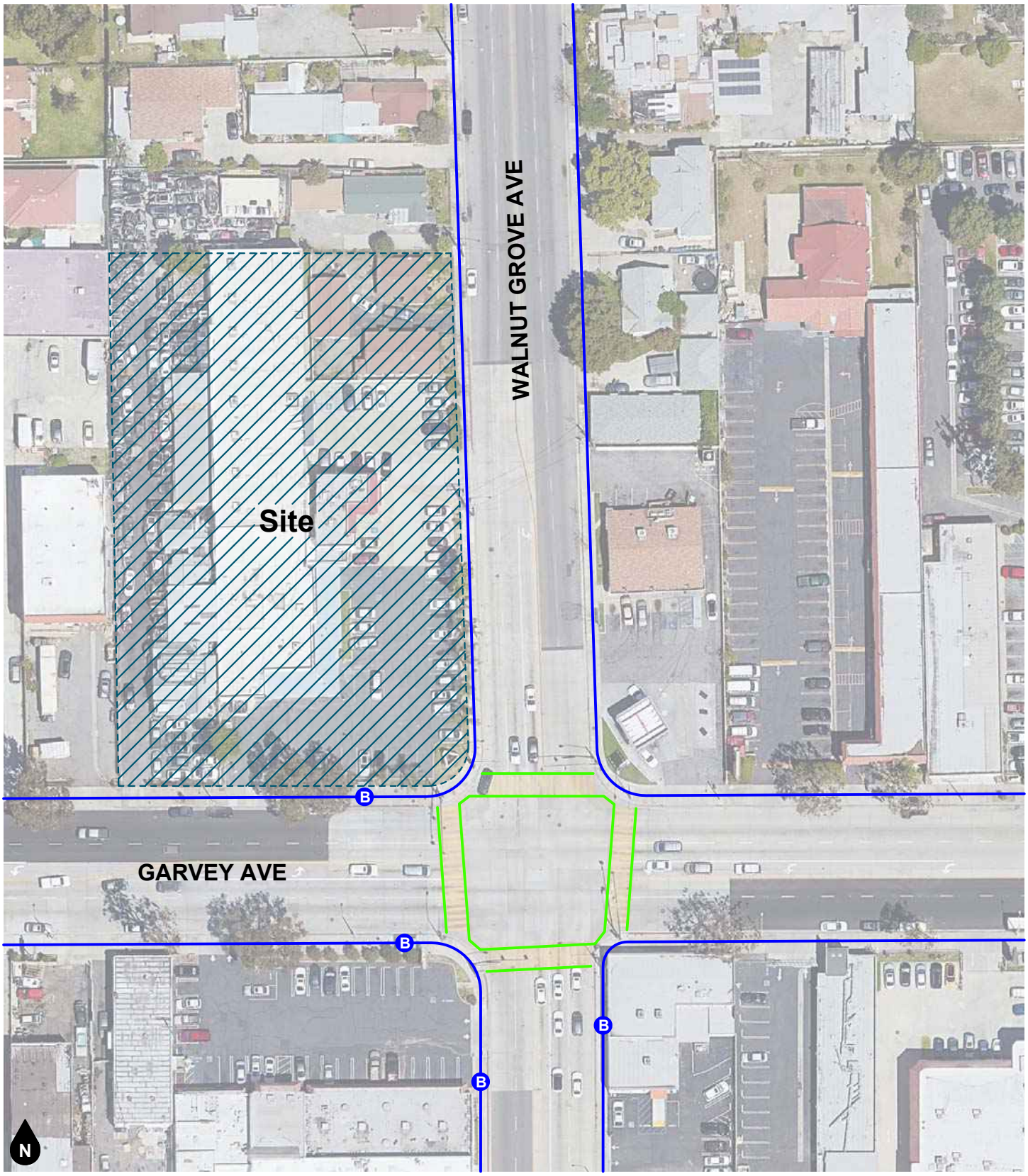
(2) ICU = Intersection Capacity Utilization. Per the Highway Capacity Manual, overall average intersection delay and Level of Service are shown for intersections with all way stop control.

(3) LOS = Level of Service



Legend
- Traffic Signal
- #D #-Lane Divided Roadway
- #U #-Lane Undivided Roadway
- Existing Lane

Figure 3
Existing Lane Geometry and Intersection Traffic Controls



Legend
- Sidewalk
- Cross Walk
- B Bus Stop

Figure 4
Existing Pedestrian Facilities

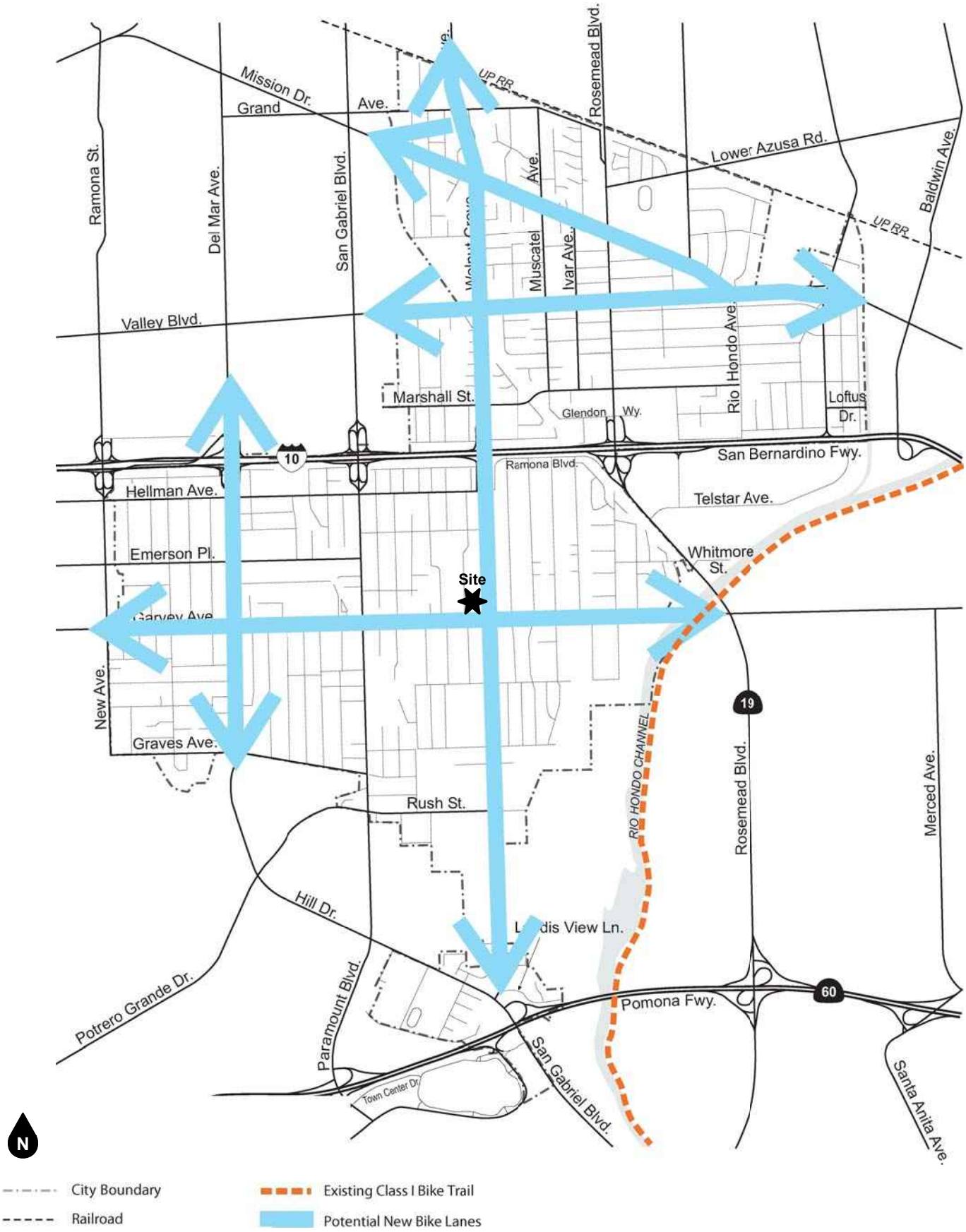
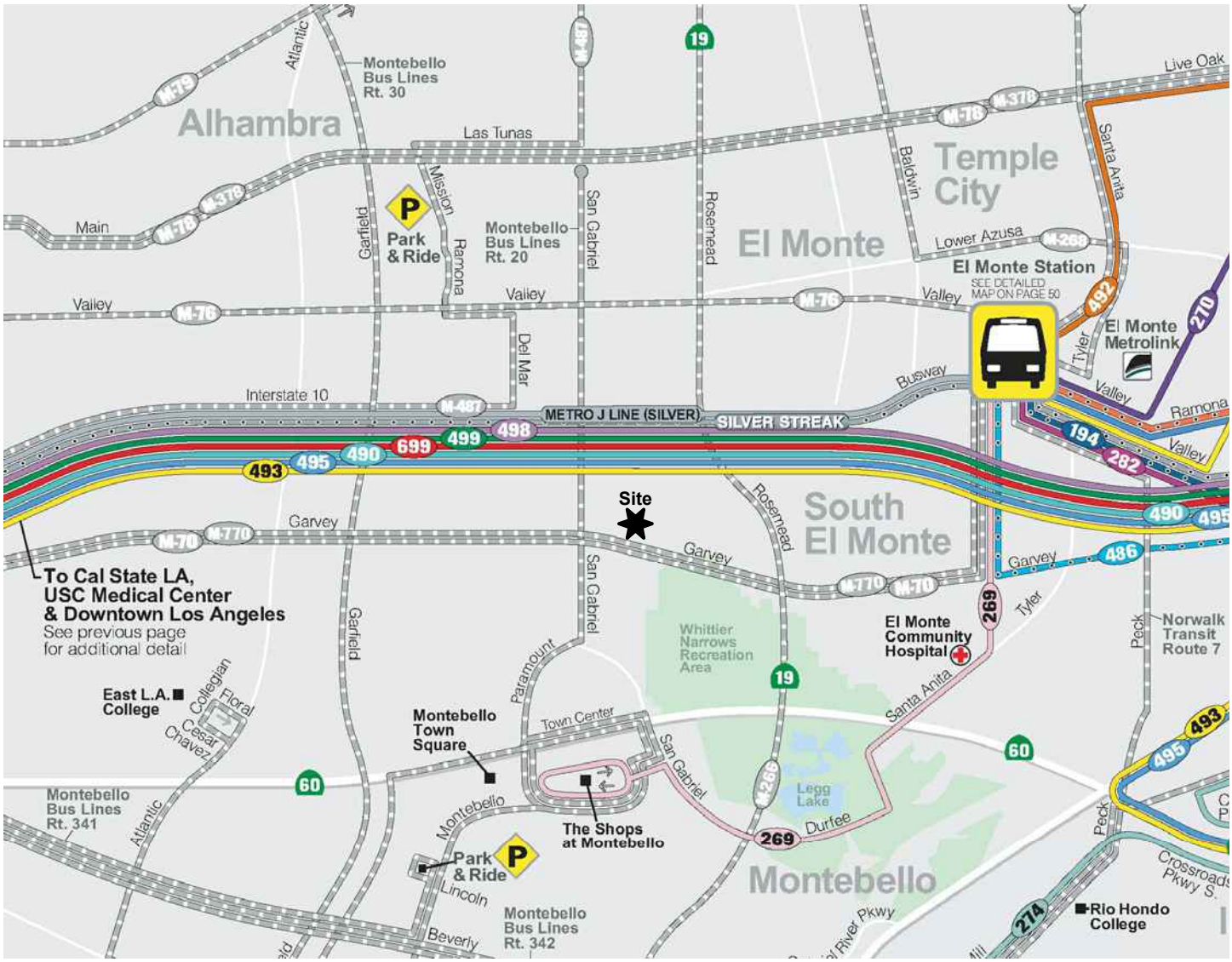


Figure 5
City of Rosemead Existing Bicycle Routes and Potential Future Routes

Source: City of Rosemead



ROUTE DESIGNATIONS

Foothill Transit lines are shown with solid route lines

Foothill Transit lines with *20 minute or better frequency* during weekday service on local routes are shown with this ◘ symbol

Other transit lines are shown with dashed route lines

M-78 **Metro** routes have an "**M**" in the route symbol

O-62 **Omitrans** routes have an "**O**" in the route symbol

P-10 **Pasadena** routes have a "**P**" in the route symbol

INFORMATION ABOUT OTHER TRANSIT AGENCIES IS LOCATED ON PG 48 OF THE BUS BOOK

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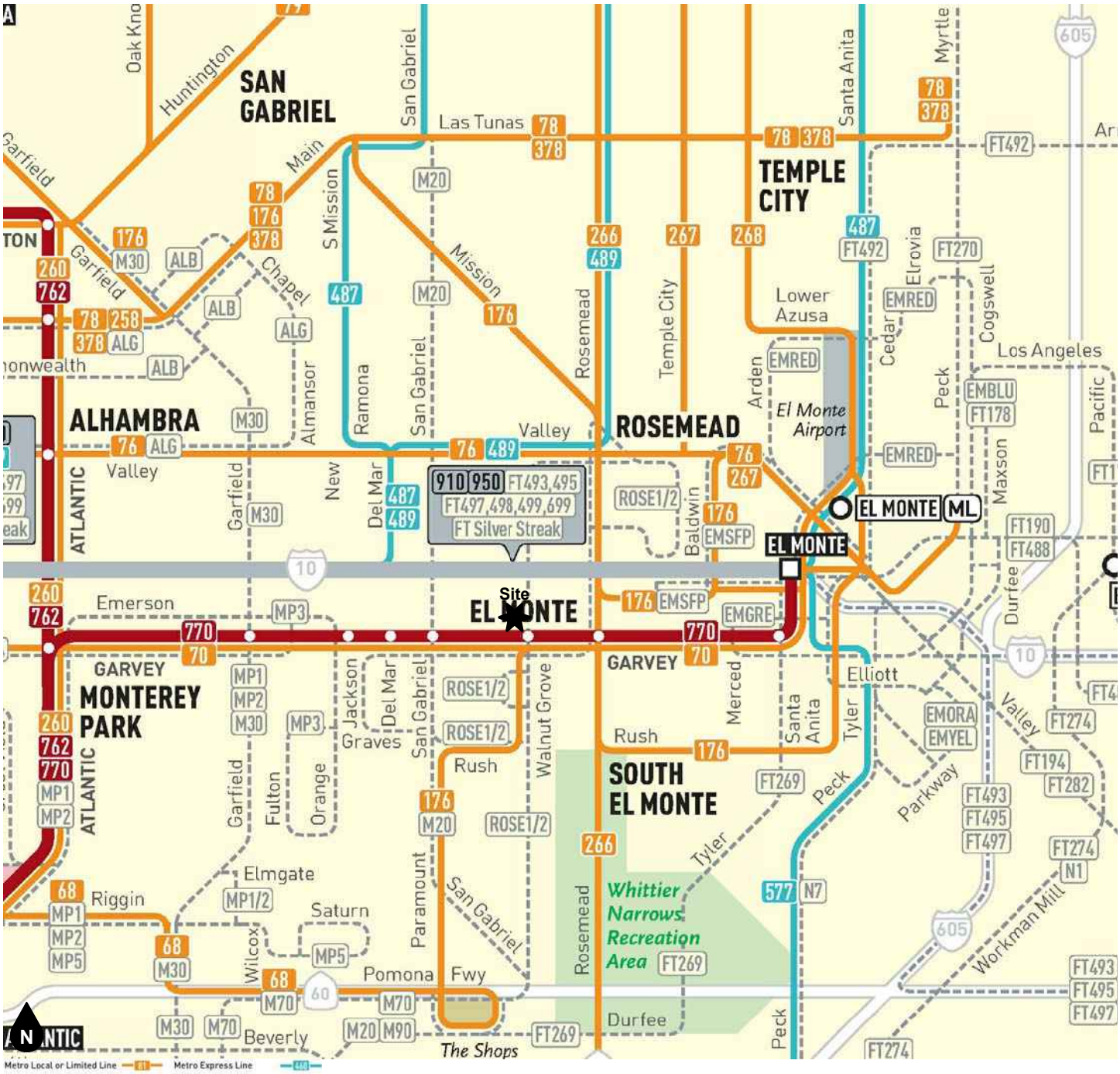
Figure 6
Foothill Transit System Map

Source: Foothill Transit Agency



Source: L.A. Metro

Figure 7
Los Angeles County Metropolitan Transportation Authority System Map

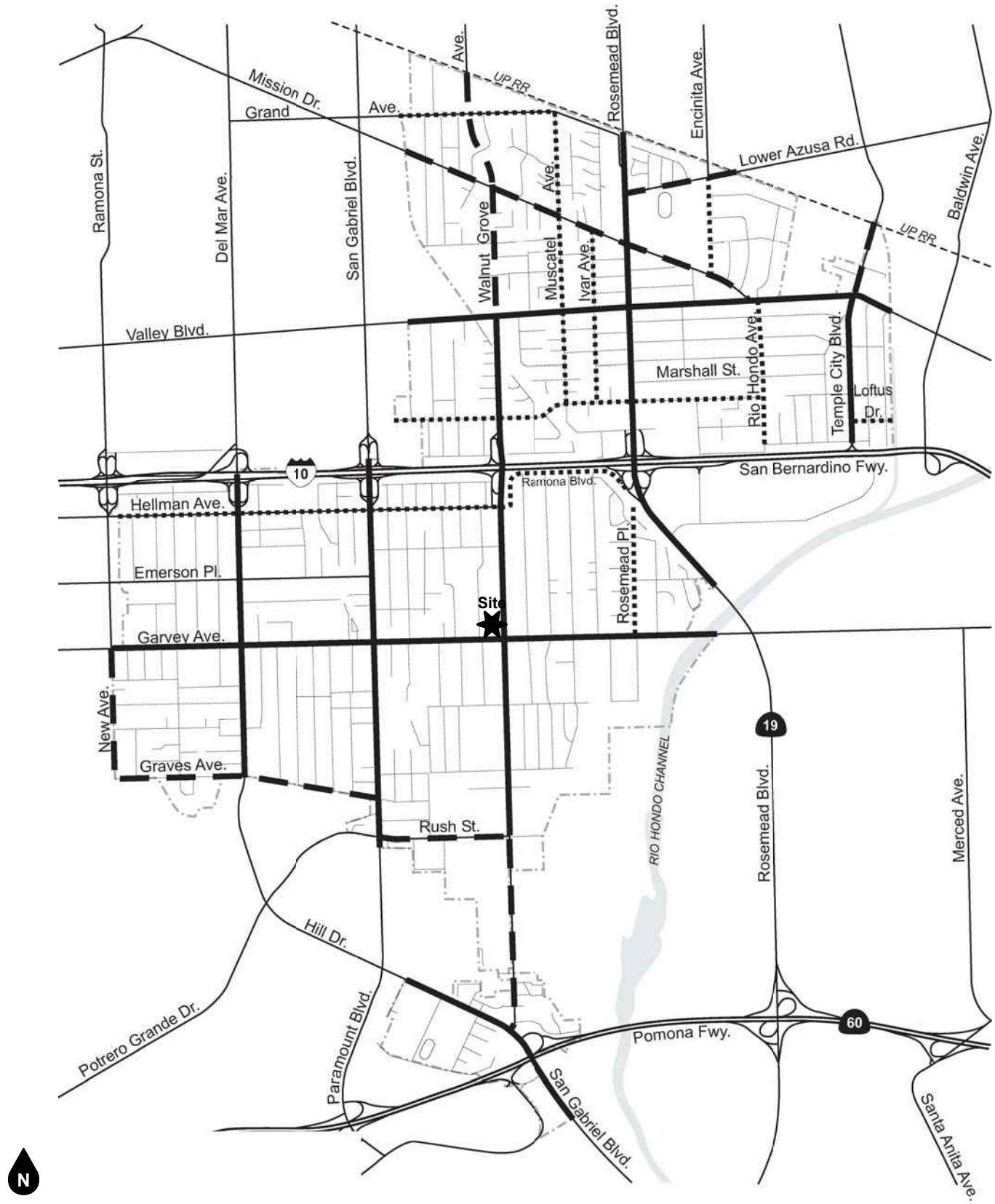


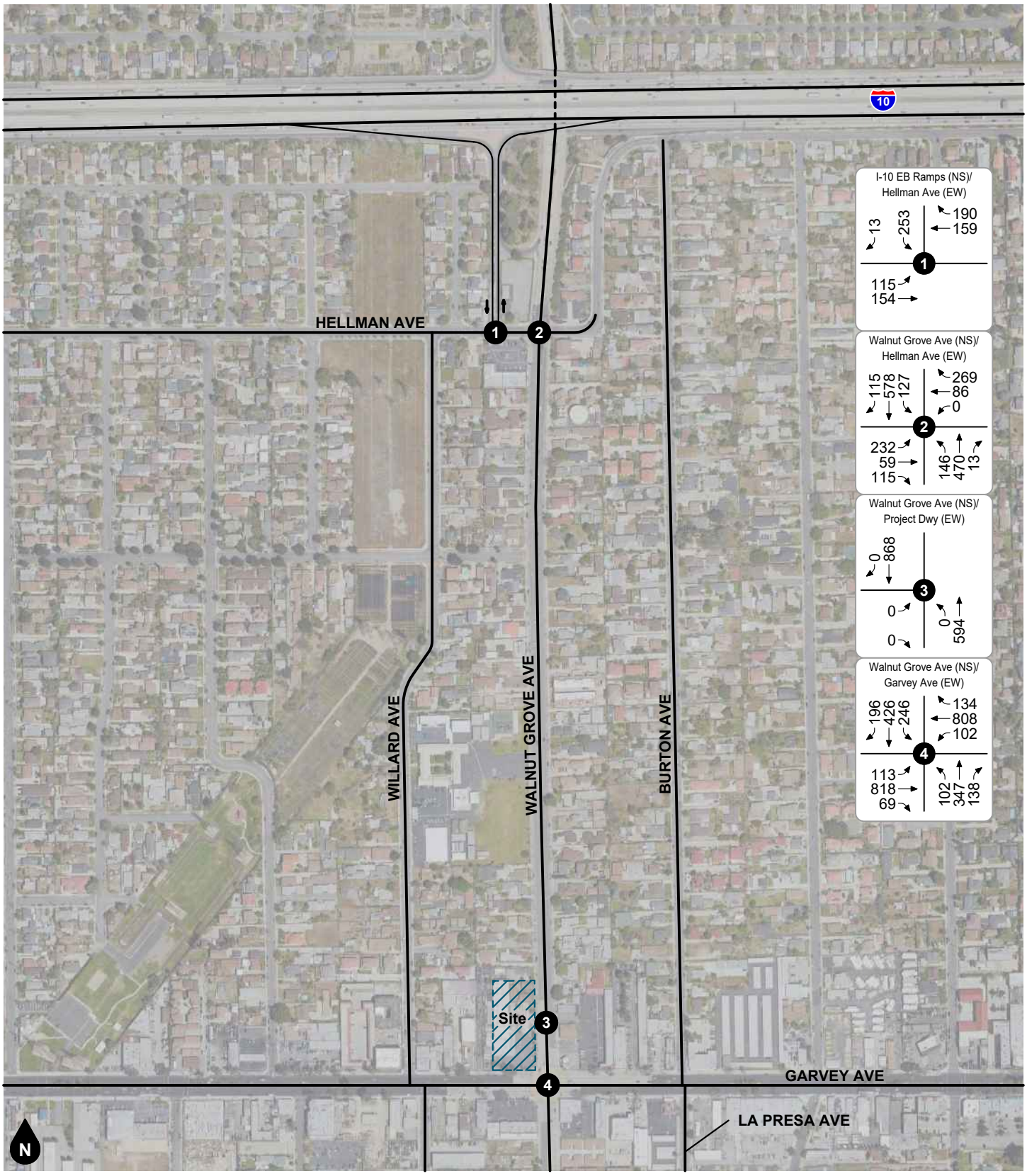
Figure 8
City of Rosemead Circulation Plan

Source: City of Rosemead

Legend

●## Vehicles Per Day (1,000's)

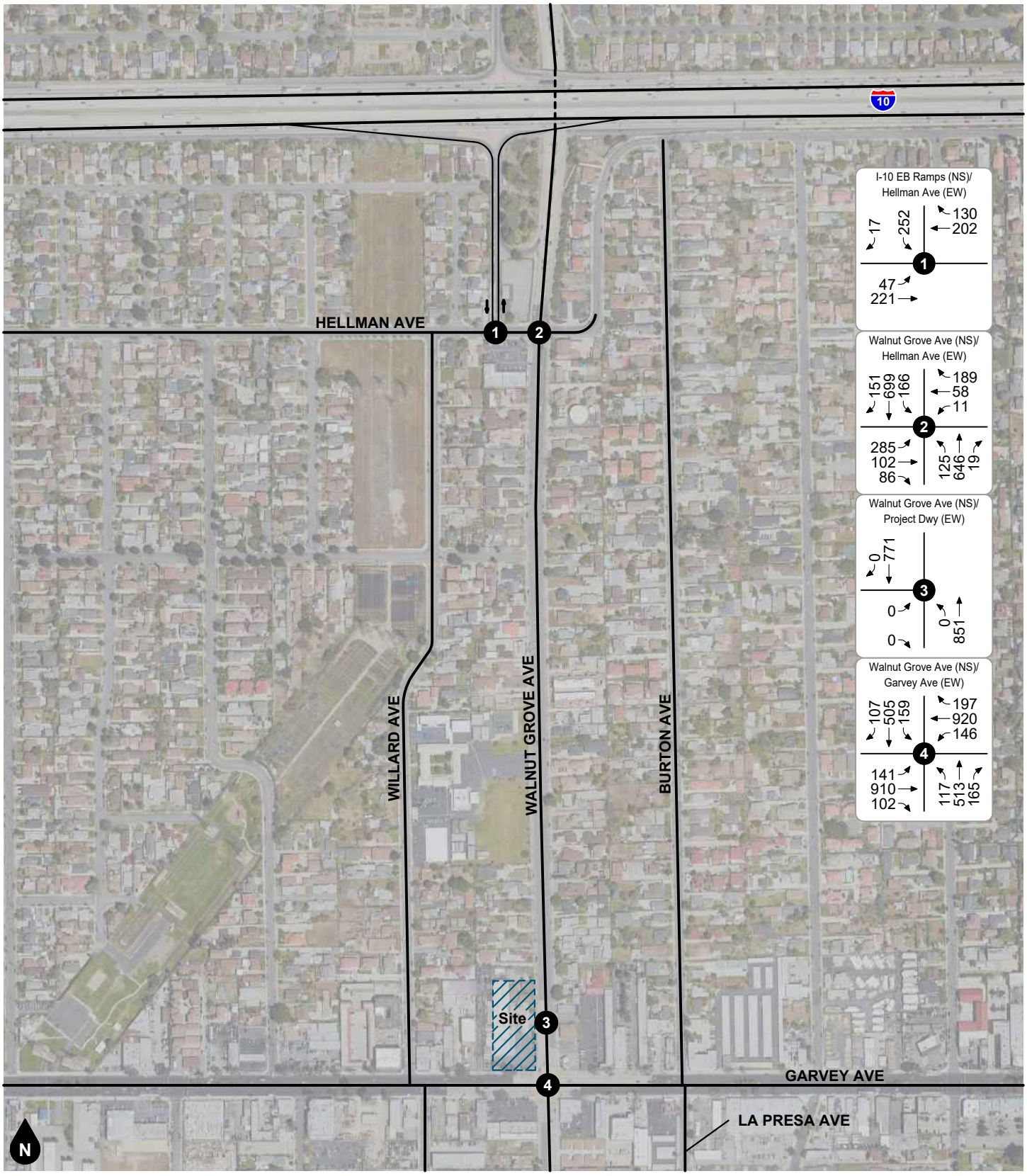
Figure 9
Existing Average Daily Traffic Volumes



Legend

(#) Study Intersection

Figure 10
Existing AM Peak Hour IntersectionTurning Movement Volumes



Legend

(#) Study Intersection

Figure 11
Existing PM Peak Hour IntersectionTurning Movement Volumes

4. PROJECT FORECASTS

This section describes how project trip generation, trip distribution, and trip assignment forecasts were developed. The forecast project volumes are illustrated on figures contained in this section.

PROJECT DESCRIPTION

The project site is located at the northwest corner of Walnut Grove Avenue and Garvey Avenue in the City of Rosemead. The project site is currently occupied with office land uses.

The project is proposing to develop the site with 42 condominium dwelling units, 5,470 square feet of office, 5,500 square feet of community hall (plus 1,272 square feet storage area), 1,130 square feet of café/food service, 5,274 square feet of retail/service and ancillary uses including a recreation room, gym, library, and manager's office. As a project design feature, the project is proposing full access to Walnut Grove Avenue. The proposed project is anticipated to be constructed and fully operational by year 2022.

PROJECT DESIGN FEATURES

The proposed project shall construct the following improvements as project design features to provide project site access:

- Construct the Walnut Grove Avenue (NS) at Project Driveway (EW) to provide one inbound lane and one outbound lane with eastbound stop-control and the following lane configurations:
  - Northbound: two through lanes
  - Southbound: one through lane and shared through/right turn lane
  - Eastbound: one shared left/ right turn lane
  - Westbound: not applicable

PROJECT TRIP GENERATION

Table 2 shows the project trip generation based upon trip generation rates obtained from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition, 2017). The project trip generation forecast is determined by multiplying the trip generation rates by the land use quantity. Trip generation rates for multifamily housing (low-rise) (Land Use Code 221), recreational community center (Land Use Code 495), general office (Land Use Code 710), shopping center (Land Use Code 820), and coffee/donut shop without drive-through window (Land Use Code 936) were used.

As shown in Table 2, the proposed project is forecast to generate a total of approximately 1,009 daily trips, including 143 trips during the AM peak hour and 65 trips during the PM peak hour.

OTHER FACTORS AFFECTING TRIP GENERATION

Land uses such as shopping centers, restaurants, gasoline stations, and convenience stores will often locate next to busy roadways to attract motorists already on the street. Since the trip generation rates contained in the ITE *Trip Generation Manual* represent vehicles entering and exiting at the site driveway(s), it is appropriate to reduce the initial trip generation forecast by the applicable pass-by trip rate when calculating the net new trips that will be added to the surrounding street system. This analysis applies a pass-by trip reduction for the commercial retail land use based upon rates from the ITE *Trip Generation Handbook* (3rd Edition, 2017).

Traffic volumes shown in Table 2 consist of the total trips generated for each project land use. As a residential trip generated by the project may also interact with the commercial retail, office, or restaurant land uses within the project, a double counting of those trips occurs. To account for this internal interaction, the trips generated by the project site have been adjusted in accordance with procedures developed by the National Cooperative Highway Research Program 684 Internal Capture Estimation Tool as incorporated into the ITE *Trip Generation Handbook* (3rd Edition). Detailed internal capture worksheets are provided in the scoping agreement in Appendix B.

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

Figure 12 to Figure 17 show the forecast directional distribution patterns for the project generated trips. The project trip distribution patterns are based on review of existing volume data, surrounding land uses, and the local and regional roadway facilities in the project vicinity.

Based on the identified project trip generation and distributions, project average daily traffic volumes have been calculated and shown on Figure 18. The project-generated AM and PM peak hour intersection turning movement volumes are shown on Figure 19 and Figure 20.

TRANSIT TRIP GENERATION

The Los Angeles County Metropolitan Transportation Authority *2010 Congestion Management Program*, Appendix D - Guidelines for CMP Transportation Impact Analysis, utilizes a conversion factor based on the daily and AM and PM peak hour trip generation to provide for a transit analysis. The conversion is as follows:

- Multiply the total trips generated by 1.4 to convert vehicle trips to person trips;
- For each time period, multiply the result by one of the following factors:

  3.5% of Total Person Trips Generated for most cases, except:

  10% primarily Residential within 1/4 mile of a CMP transit center
  15% primarily Commercial within 1/4 mile of a CMP transit center
  7% primarily Residential within 1/4 mile of a CMP multi-modal transportation center
  9% primarily Commercial within 1/4 mile of a CMP multi-modal transportation center
  5% primarily Residential within 1/4 mile of a CMP transit corridor
  7% primarily Commercial within 1/4 mile of a CMP transit corridor
  0% if no fixed route transit services operate within one mile of the project

Accordingly, the proposed project-generated transit trips are calculated as follows:

- Daily: ((1,009 trips x 1.4) x 0.035) ≈ 49
- Morning Peak Hour: ((143 trips x 1.4) x 0.035) ≈ 7
- Evening Peak Hour: ((65 trips x 1.4) x 0.035) ≈ 3

The proposed project is forecast to generate approximately seven (7) transit trips during the AM peak hour and approximately three (3) transit trips during the PM peak hour. Based on the existing transit services available in the project vicinity and the relatively low transit trip generation, the proposed project is forecast to have a nominal impact on transit service.

Table 2
Project Trip Generation

Trip Generation Rates									
			AM Peak Hour			PM Peak Hour			Daily
Land Use	Source[1]	Unit[2]	% In	% Out	Rate	% In	% Out	Rate	Rate
Multifamily Housing (Mid-Rise)	ITE 221	DU	26%	74%	0.36	61%	39%	0.44	5.44
Recreational Community Center	ITE 495	TSF	66%	34%	1.76	47%	53%	2.31	28.82
General Office	ITE 710	TSF	86%	14%	1.16	16%	84%	1.15	9.74
Shopping Center	ITE 820	TSF	62%	38%	0.94	48%	52%	3.81	37.75
Coffee/Donut Shop without Drive-Through Window	ITE 936	TSF	51%	49%	101.14	50%	50%	36.31	363.1

Trips Generated									
			AM Peak Hour			PM Peak Hour			
Land Use	Quantity	Unit[2]	In	Out	Total	In	Out	Total	Daily
Condominiums	42	DU	4	11	15	11	7	18	228
Internal Capture [3]			*0*	*-2*	*-2*	*-5*	*-2*	*-7*	*-9*
Community Hall[4]	5.500	TSF	6	3	9	6	7	13	159
Office	5.470	TSF	5	1	6	1	5	6	53
Internal Capture [3]			*-1*	*0*	*-1*	*0*	*-1*	*-1*	*-2*
Retail[5]	5.274	TSF	3	2	5	10	10	20	199
Internal Capture [3]			*0*	*0*	*0*	*-7*	*-6*	*-13*	*-13*
Pass-by Trips (34% PM) [6]			*0*	*0*	*0*	*-1*	*-1*	*-2*	*-2*
Café/Food Service	1.130	TSF	58	56	114	21	21	42	410
Internal Capture [3]			*-2*	*-1*	*-3*	*-4*	*-7*	*-11*	*-14*
Net New Trips Generated			**73**	**70**	**143**	**32**	**33**	**65**	**1,009**

Notes:

(1) ITE = Institute of Transportation Engineers *Trip Generation Manual* (10th Edition, 2017); ### = Land Use Code

(2) TSF = Thousand Square Feet

(3) Internal Capture calculated using the NCHRP 684 Internal Trip Capture Estimation Tool included in the ITE *Trip Generation Handbook* (3rd Edition, 2017).

(4) Trip generation for the community hall is based on the floor area used for occupancy and parking calculations; the additional 1,272 square feet of storage areas are considered ancillary and will not generate additional new trips.

(5) The retail floor area includes 1,021 square feet of commercial manager's office.

(6) Pass-by rates obtained from ITE *Trip Generation Handbook* (3rd Edition, 2017).

Legend

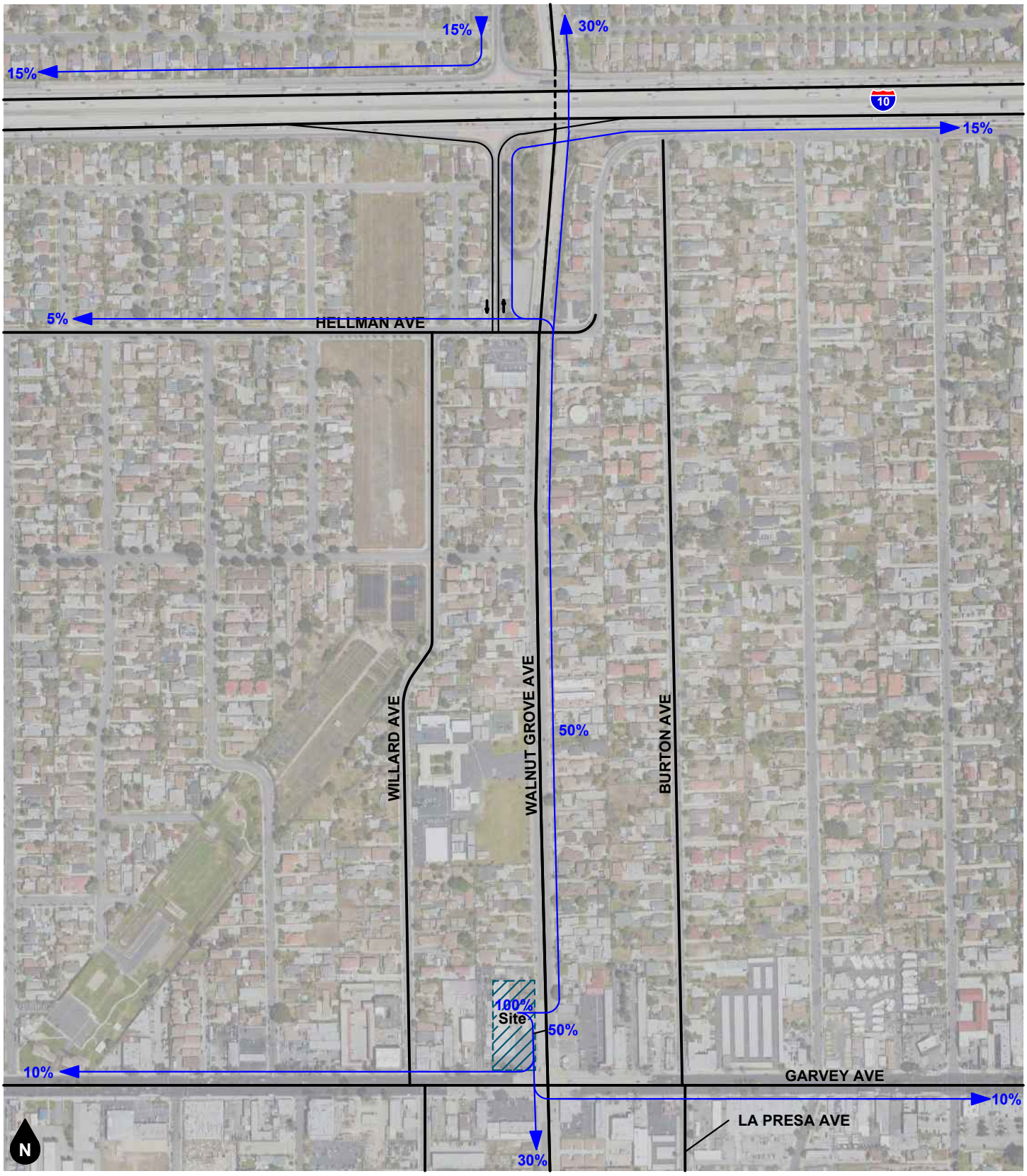
10% Percent From Project

Figure 12
Project Outbound Trip Distributon - Residential

Legend

10% Percent To Project

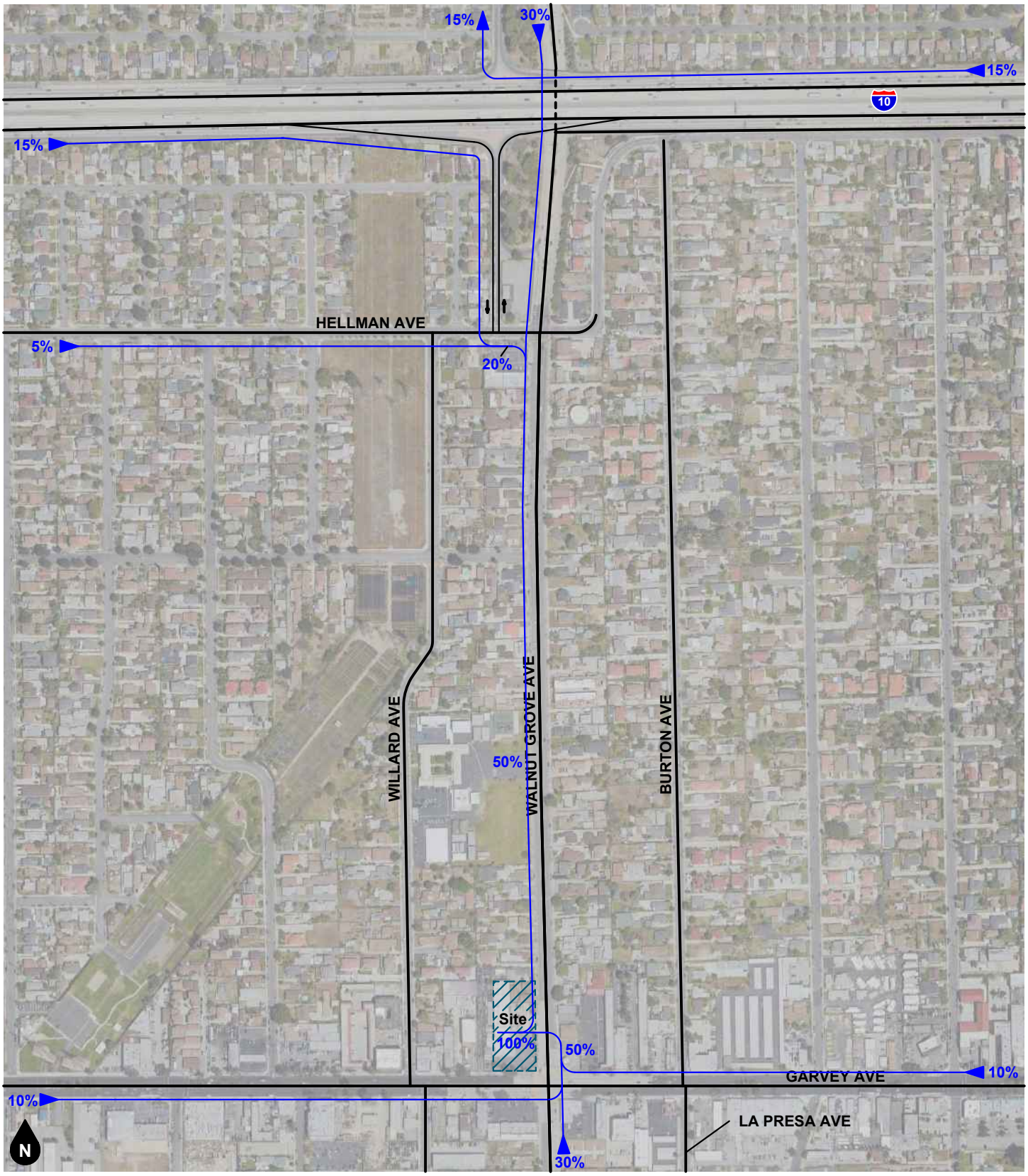
Figure 13
Project Inbound Trip Distributon - Residential



Legend

10% Percent From Project

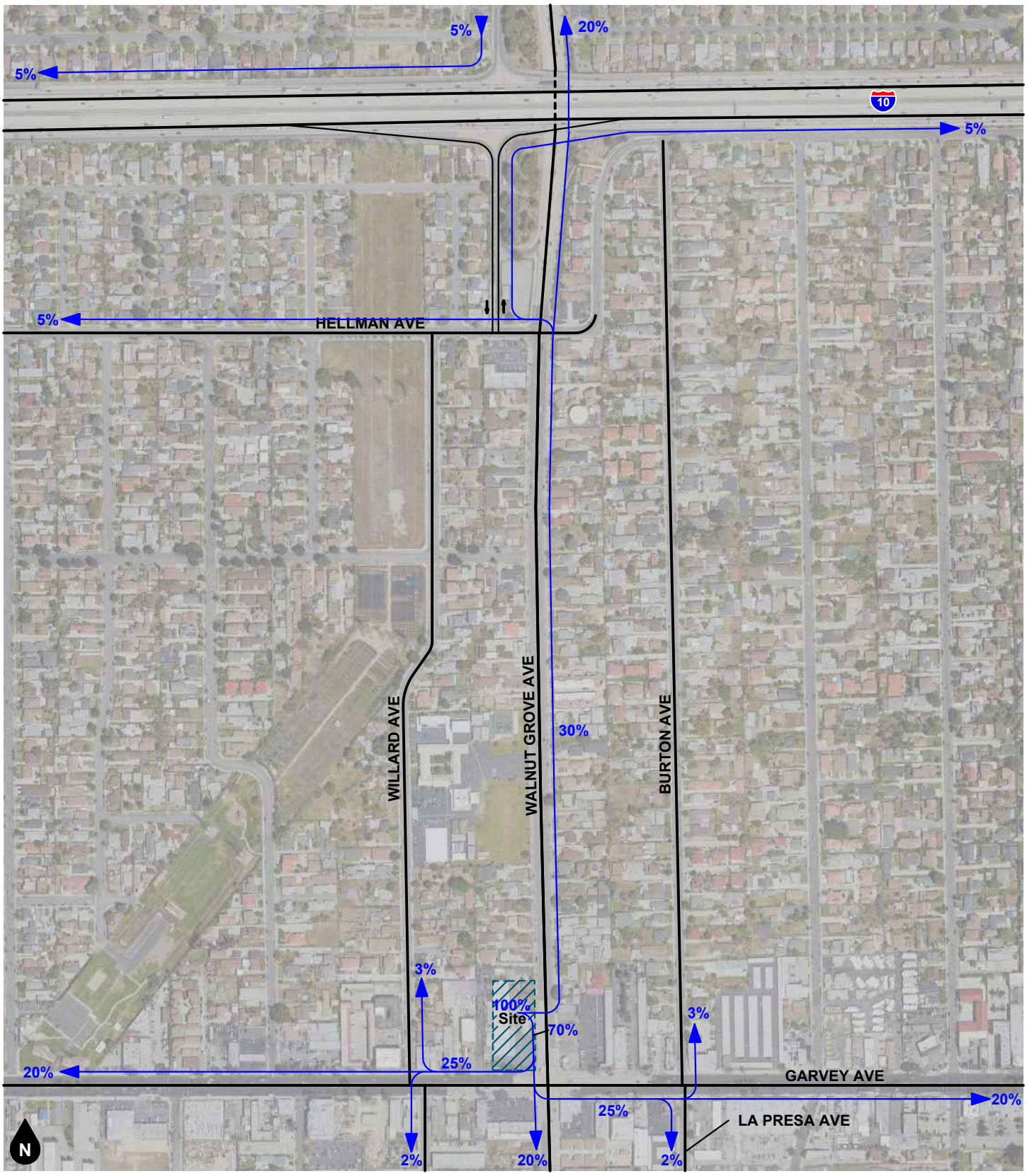
Figure 14
Project Outbound Trip Distributon - Office



Legend

10% Percent To Project

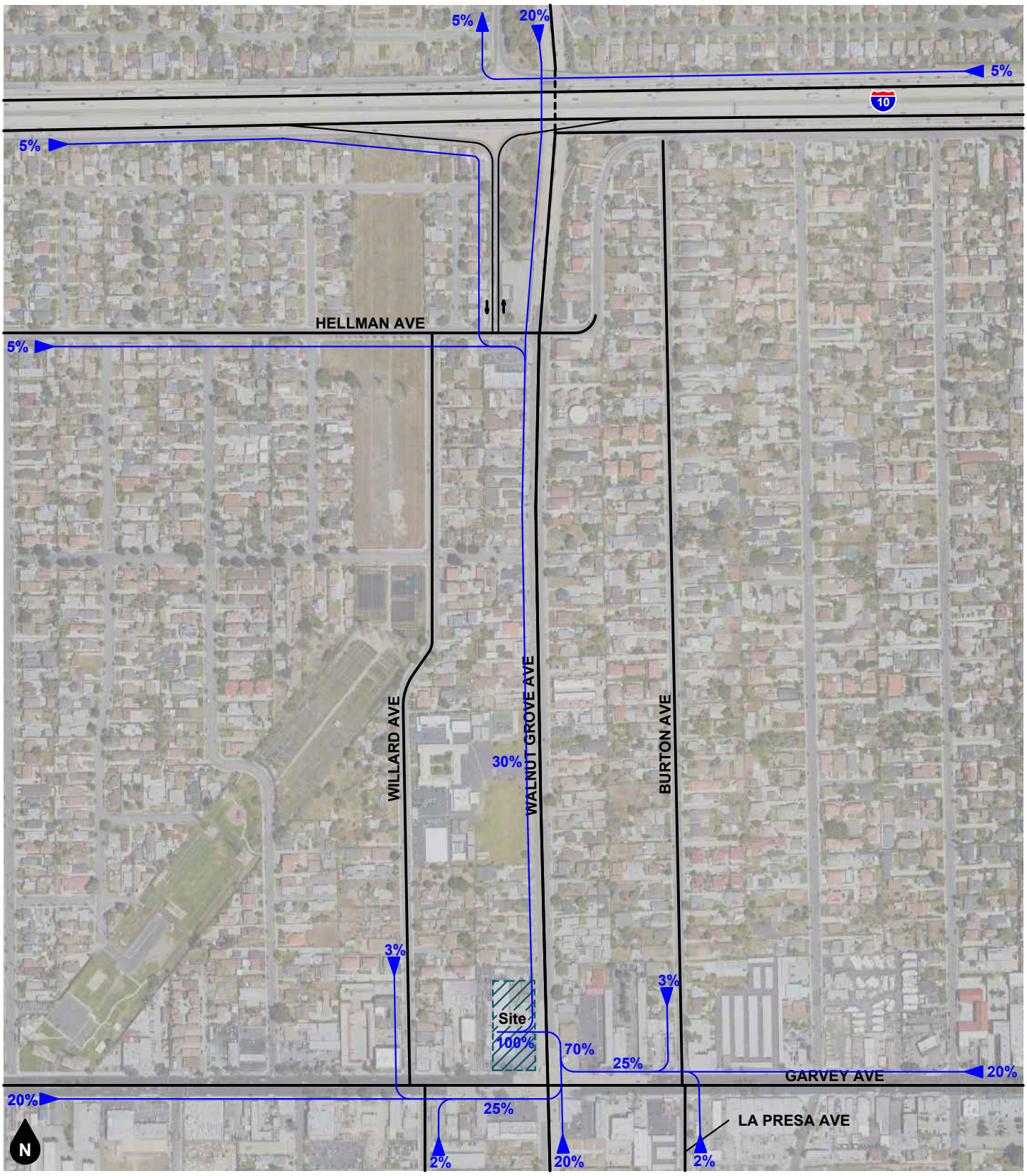
Figure 15
Project Inbound Trip Distributon - Office



Legend

10% Percent From Project

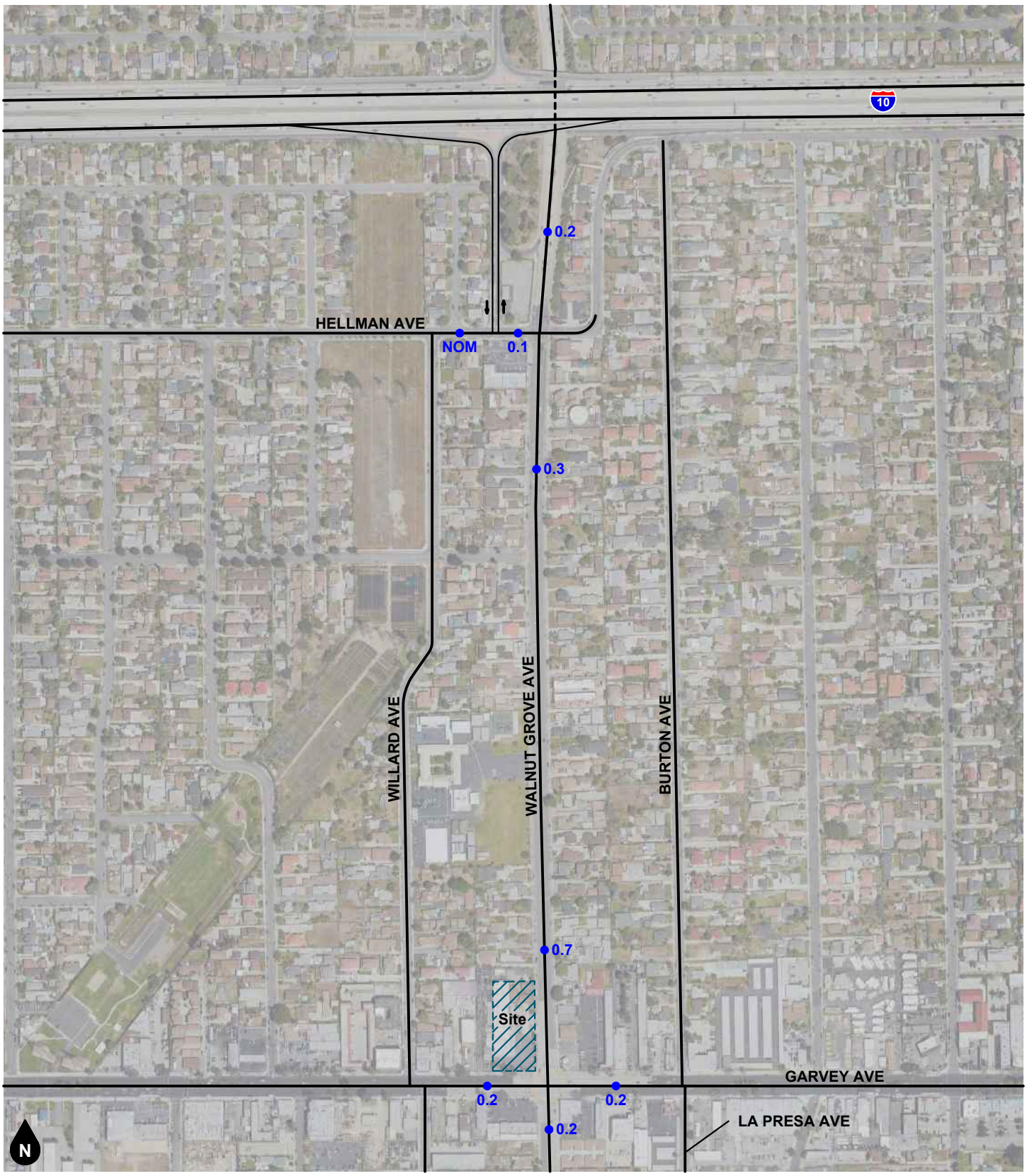
Figure 16
Project Outbound Trip Distributon - Retail/Restaurant



Legend

10% Percent To Project

Figure 17
Project Inbound Trip Distributon - Retail/Restaurant

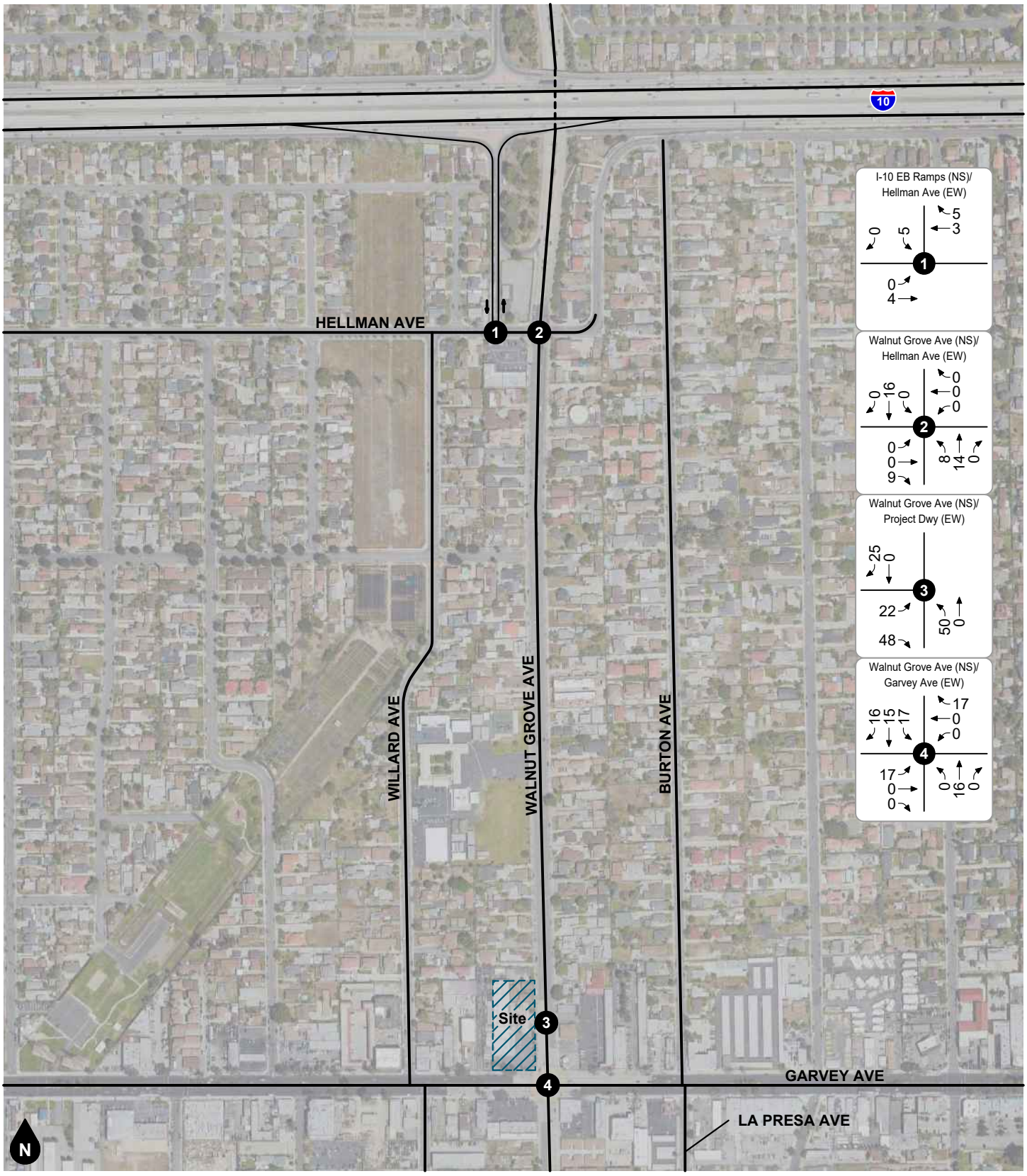


Legend

●## Vehicles Per Day (1,000's)

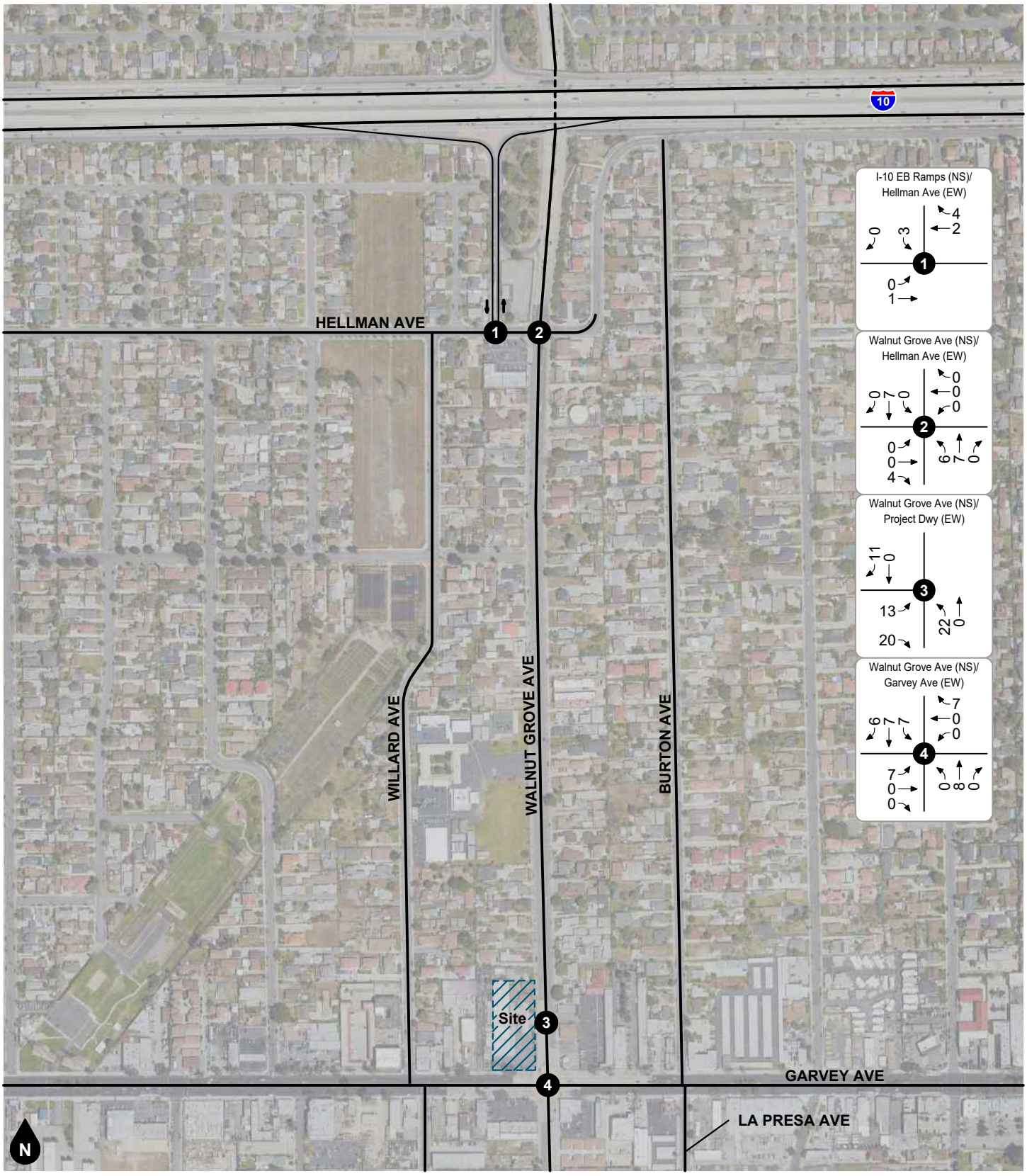
NOM Nominal; Less Than 50 Vehicles Per Day

Figure 18
Project Average Daily Traffic Volumes



Legend
(#) Study Intersection

Figure 19
Project AM Peak Hour IntersectionTurning Movement Volumes



Legend
(#) Study Intersection

Figure 20
Project PM Peak Hour IntersectionTurning Movement Volumes

5. FUTURE VOLUME FORECASTS

This section describes how future volume forecasts for each analysis scenario were developed. Forecast study area volumes are illustrated on figures contained in this section.

OTHER DEVELOPMENT

To account for trips generated by future development, trips generated by approved other development projects in the Cities of Rosemead and Montebello were added to the study area. Table 3 shows the trip generation summary for other development projects. Figure 21 shows the other development location map.

Figure 22 shows the forecast average daily traffic volumes for the other development. Figure 23 and Figure 24 show the forecast AM and PM peak hour intersection turning movement volumes for trips generated by other developments.

AMBIENT GROWTH

To account for ambient growth on roadways, existing traffic volumes were increased by a growth rate of one percent (0.8%) per year over a two-year period for Cumulative [Opening Year (2022)] conditions. This equates to a total growth factor of approximately 1.02 for Cumulative conditions. The ambient growth rate was conservatively applied to all movements at the study intersections.

ANALYSIS SCENARIO VOLUME FORECASTS

Existing Plus Project

Existing Plus Project volume forecasts were derived by adding the project generated trips to Existing volumes. Existing Plus Project average daily traffic volumes are shown on Figure 25. Existing Plus Project AM and PM peak hour intersection turning movement volumes are shown on Figure 26 and Figure 27.

Opening Year (2022) Without Project

Opening Year (2022) Without Project volume forecasts were derived by adding the other development generated trips to Existing volumes with ambient growth. Opening Year (2020) Without Project average daily traffic volumes are shown on Figure 28. Opening Year (2020) Without Project AM and PM peak hour intersection turning movement volumes are shown on Figure 29 and Figure 30.

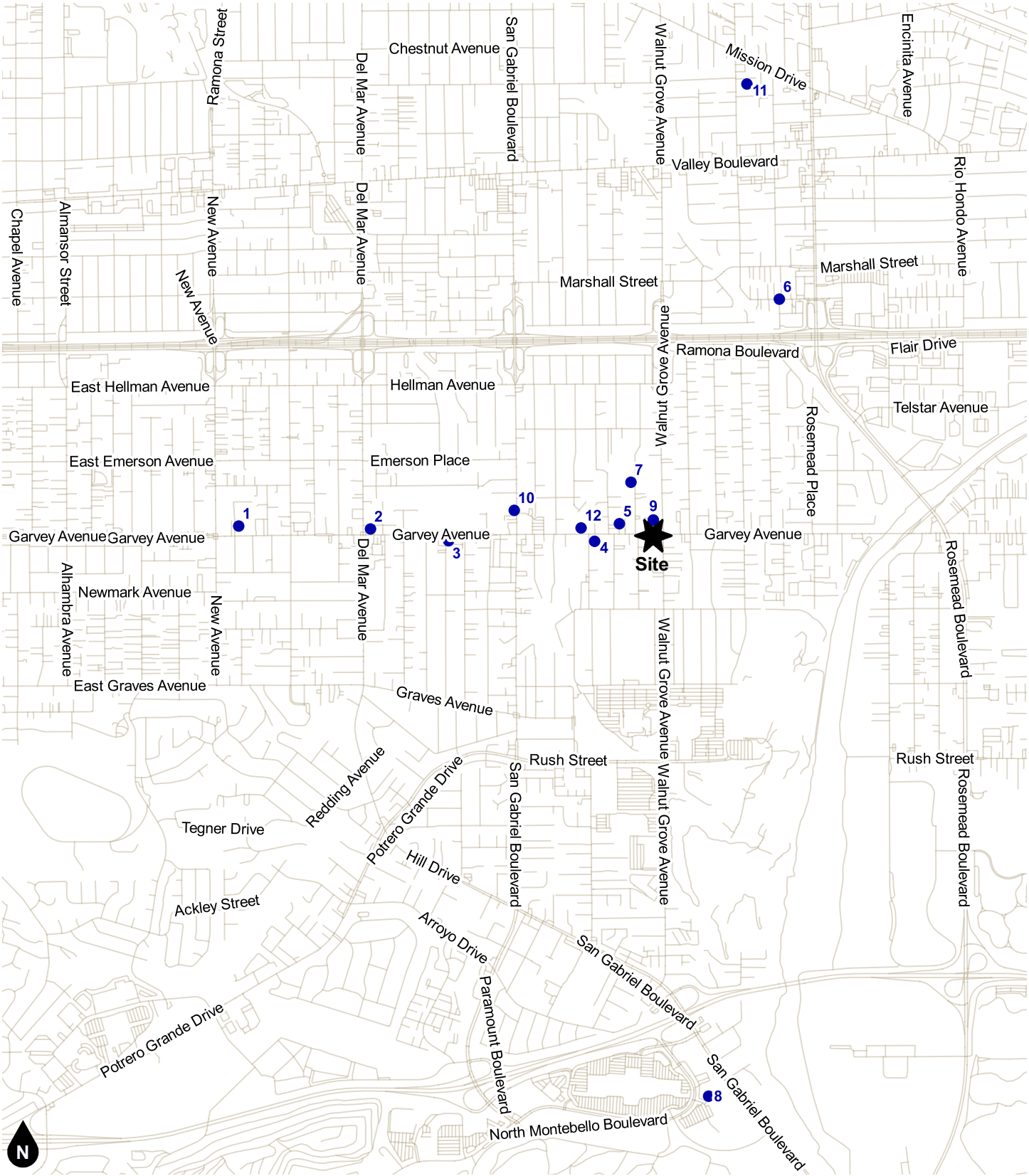
Opening Year (2022) With Project

Opening Year (2020) With Project volume forecasts were derived by adding project generated trips to Opening Year (2020) Without Project volumes. Opening Year (2020) With Project average daily traffic volumes are shown on Figure 31. Opening Year (2020) With Project AM and PM peak hour intersection turning movement volumes are shown on Figure 32 and Figure 33.

Table 3
Other Development Trip Generation

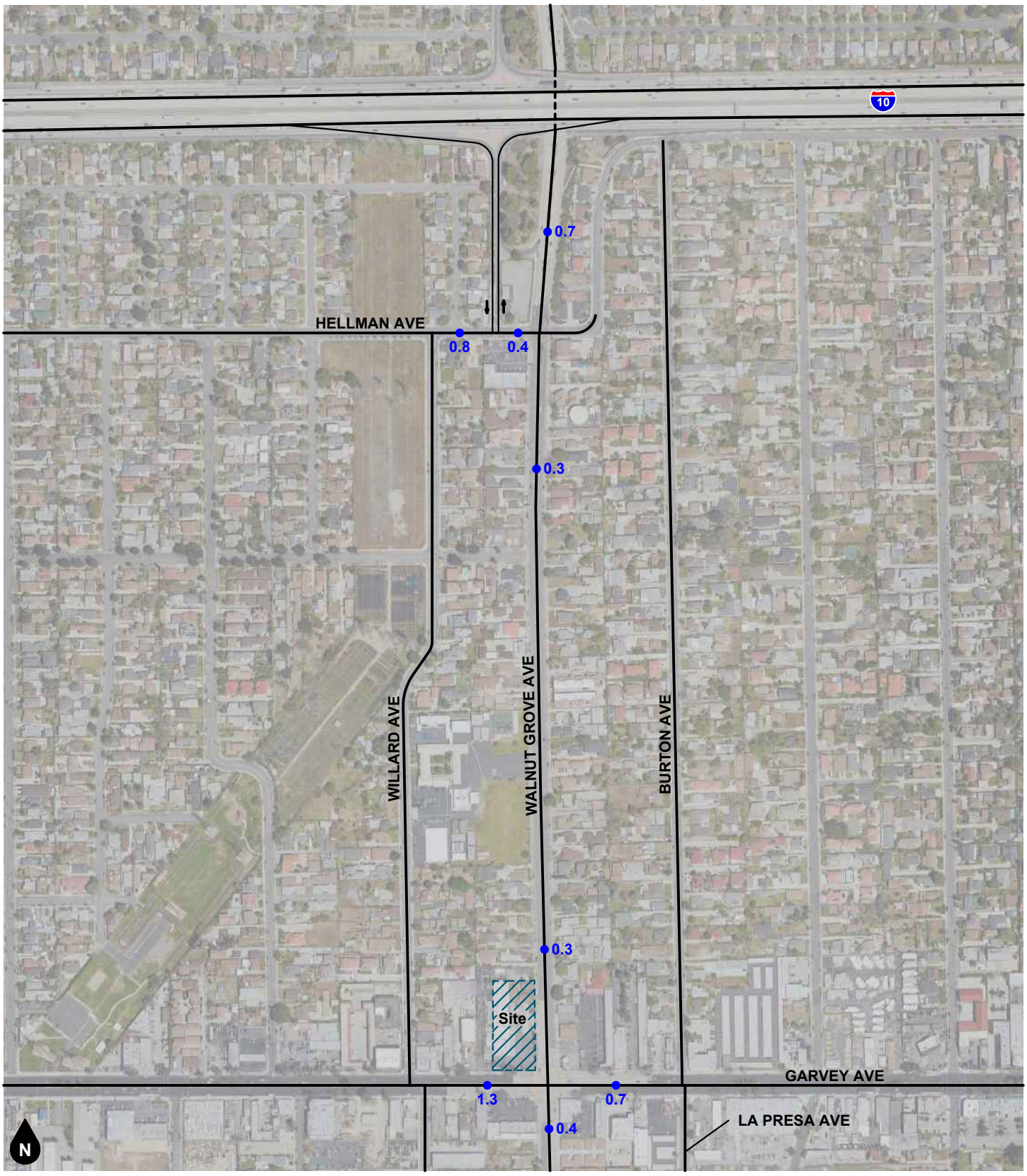
Traffic Analysis Zone	Address	Land Use	Source[1]	Quantity	Units[2]	AM Peak Hour			PM Peak Hour			Daily
						In	Out	Total	In	Out	Total	
1	7419 - 7459 Garvey Avenue	Commercial	ITE 820	20.000	TSF	12	7	19	37	40	77	755
		- Pass-By (34% PM)[3]				--	--	--	-13	-14	-27	-27
		Residential	ITE 220	218	DU	23	77	100	77	45	122	1,596
	Subtotal					35	84	119	101	71	172	2,324
2	7801 - 7825 Garvey Avenue	Commercial	ITE 820	15.903	TSF	9	6	15	29	32	61	600
		- Pass-By (34% PM)[3]				--	--	--	-10	-11	-21	-21
		Residential	ITE 220	60	DU	6	21	27	21	12	33	439
	Subtotal					15	27	42	40	33	73	1,018
3	8002 Garvey Avenue	Commercial	ITE 820	87.919	TSF	51	31	82	161	174	335	3,319
		- Pass-By (34% PM)[3]				--	--	--	-55	-59	-114	-114
		Residential	ITE 220	92	DU	10	33	43	32	19	51	673
	Subtotal					61	64	125	138	134	272	3,878
4	8408 Garvey Avenue	Commercial	ITE 820	11.500	TSF	7	4	11	21	23	44	434
		- Pass-By (34% PM)[3]				--	--	--	-7	-8	-15	-15
		Residential	ITE 220	53	DU	6	19	25	19	11	30	388
	Subtotal					13	23	36	33	26	59	807
5	8449 Garvey Avenue	Commercial	ITE 820	7.200	TSF	4	3	7	13	14	27	272
		- Pass-By (34% PM)[3]				--	--	--	-4	-5	-9	-9
		Residential	ITE 220	41	DU	4	15	19	14	8	22	300
	Subtotal					8	18	26	23	17	40	563
6	8900 Glendon Way	Hotel	ITE 310	123	RM	34	24	58	38	36	74	1,028
7	3133 - 3141 Willard Avenue	Residential	ITE 220	31	DU	3	11	14	11	6	17	227
8	500 Montebello Boulevard	Hotel	ITE 310	199	RM	55	38	93	61	59	120	1,664
9	3001 Walnut Grove Avenue	Commercial	ITE 820	17.394	TSF	10	6	16	32	34	66	657
		- Pass-By (34% PM)[3]				--	--	--	-11	-12	-23	-23
		Residential	ITE 220	42	DU	4	15	19	15	9	24	307
	Subtotal					14	21	35	36	31	67	941
10	3035 San Gabriel Boulevard	Commercial	ITE 820	56.258	TSF	33	20	53	103	111	214	2,124
		- Pass-By (34% PM)[3]				--	--	--	-35	-38	-73	-73
		Residential	ITE 220	144	DU	15	51	66	51	30	81	1,054
	Subtotal					48	71	119	119	103	222	3,105
11	4316 Muscatel Avenue	Residential	ITE 220	10	DU	1	4	5	4	2	6	73
12	8399 Garvey Avenue	Medical Clinic	ITE 720	15.000	TSF	33	9	42	15	37	52	522
Total						320	394	714	619	555	1,174	16,150

Notes:
(1) ITE = Institute of Transportation Engineers *Trip Generation Manual* (10th Edition, 2017); ### = Land Use Code.
(2) DU = Dwelling Units; TSF = Thousand Square Feet
(3) ITE *Trip Generation Handbook* (3rd Edition, 2017).



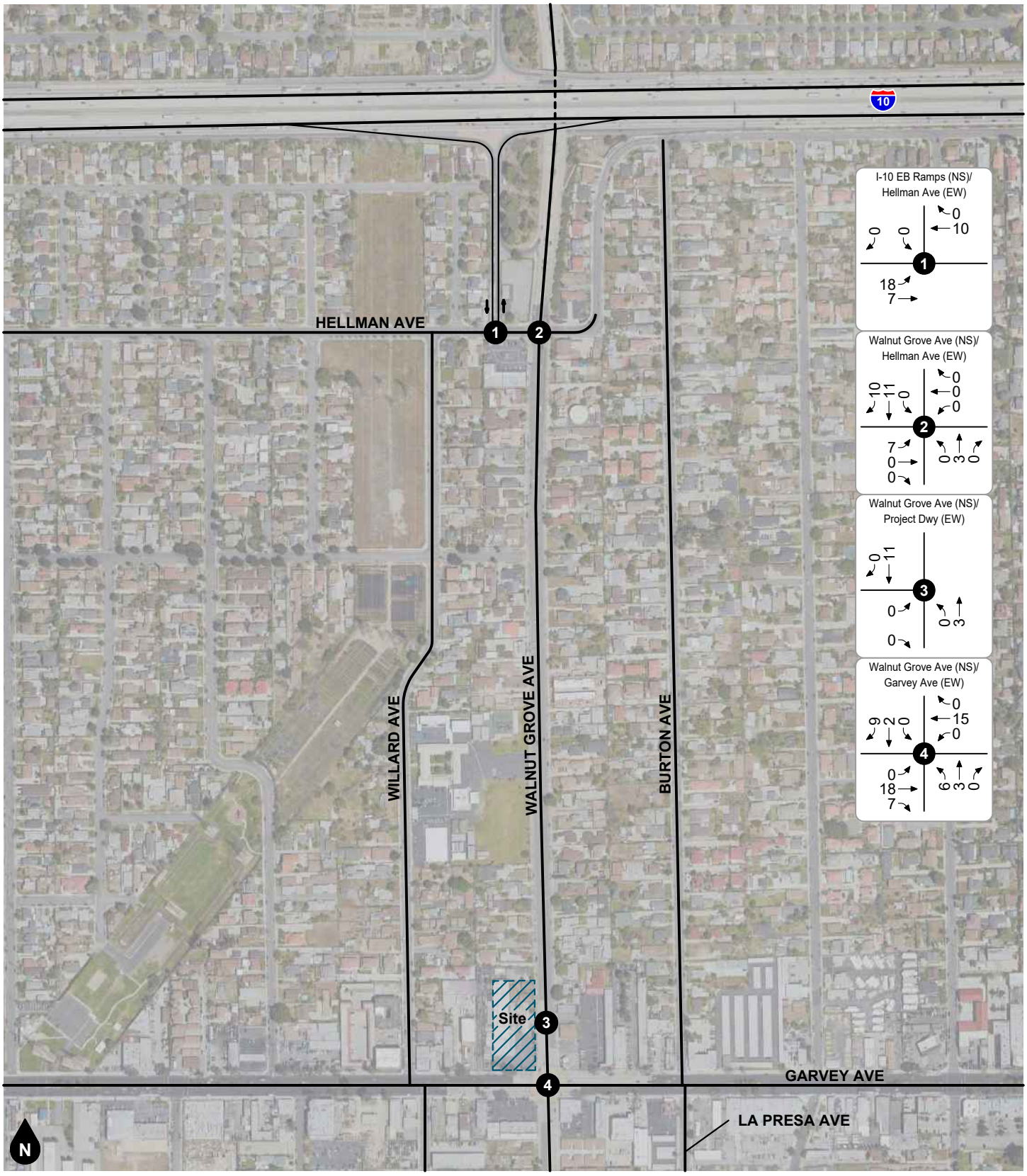
Legend
Other Development Location

Figure 21
Other Development Location Map



Legend
●## Vehicles Per Day (1,000's)

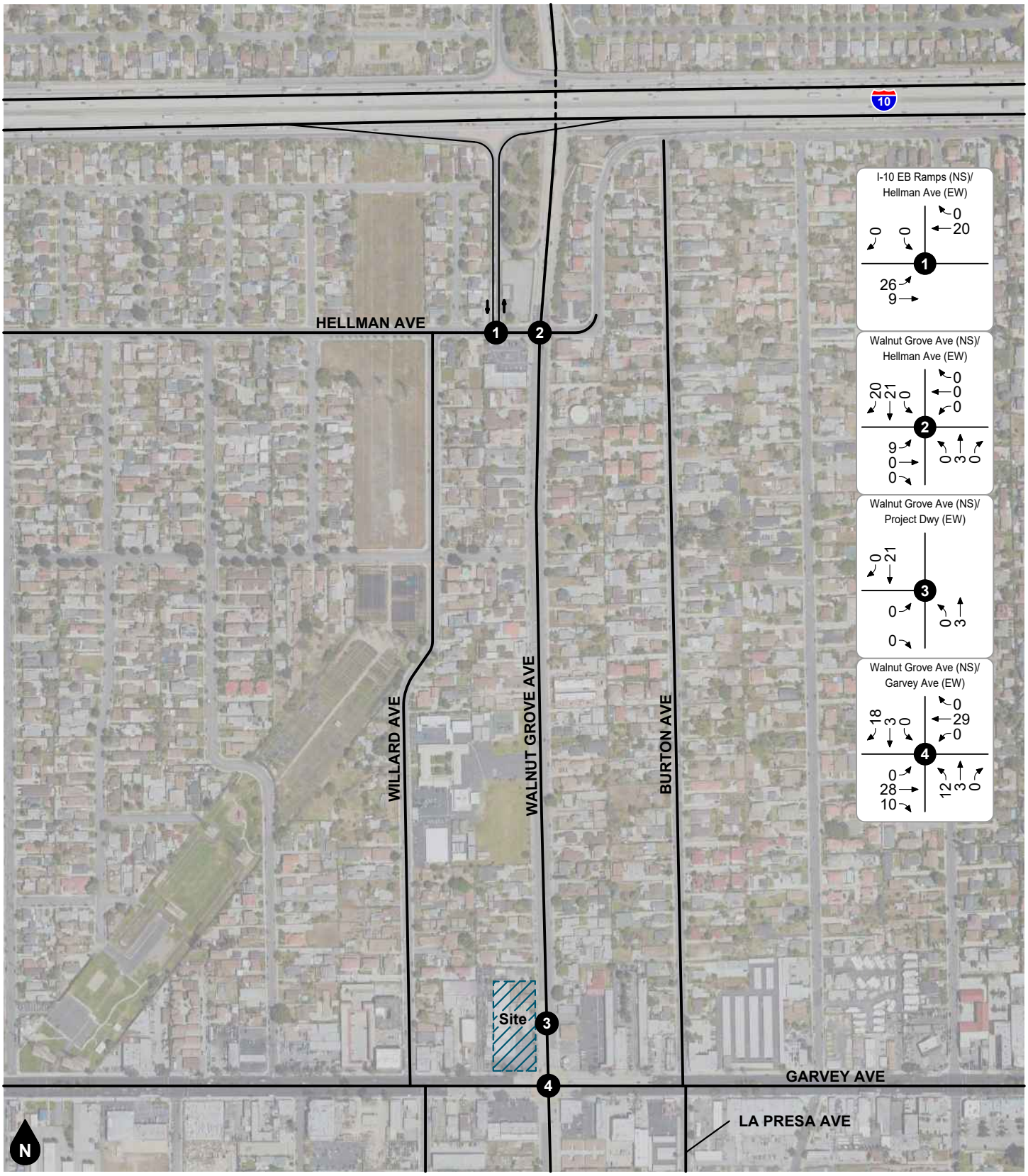
Figure 22
Other Development Average Daily Traffic Volumes



Legend

(#) Study Intersection

Figure 23
Other Development
AM Peak Hour IntersectionTurning Movement Volumes



Legend

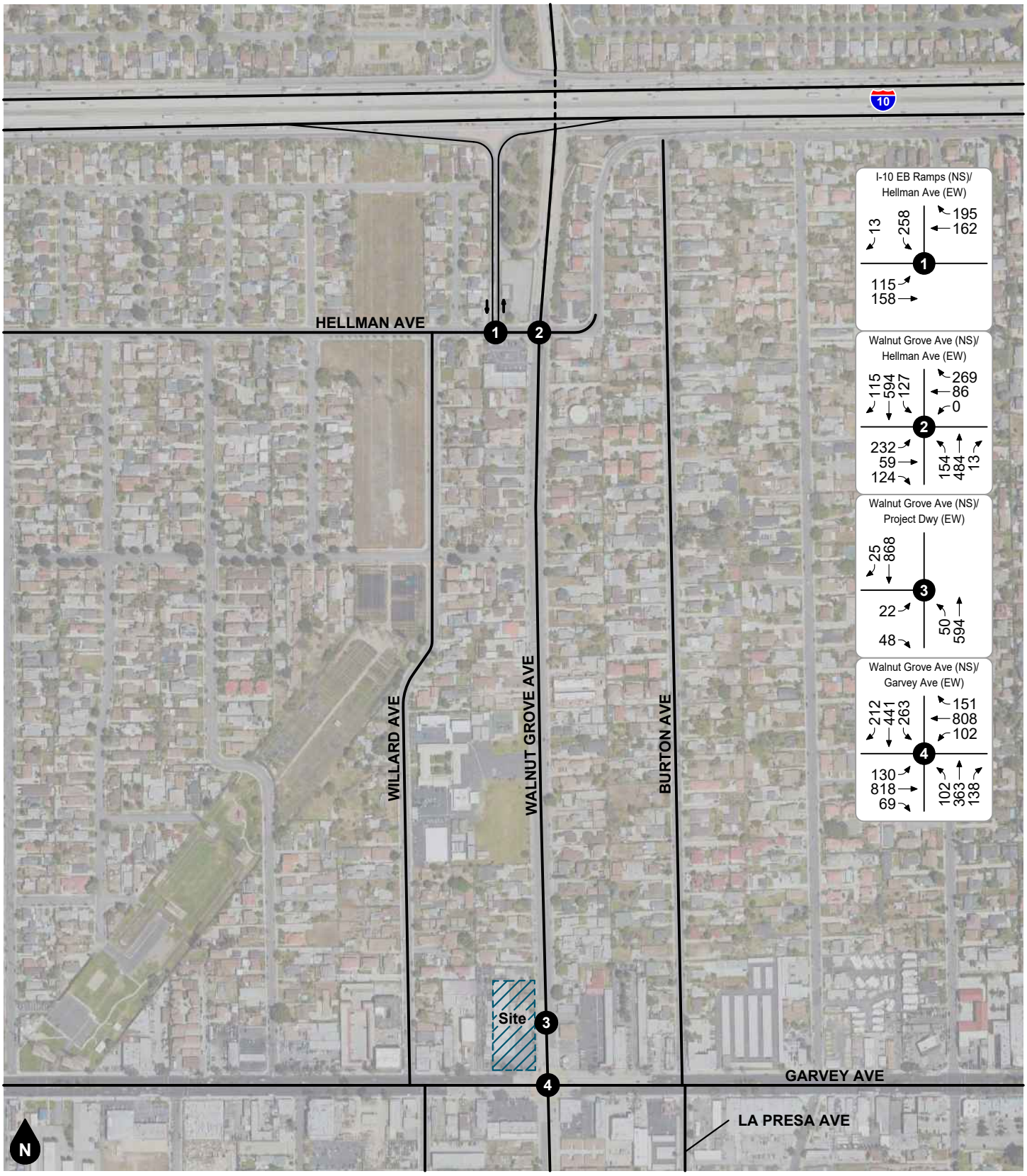
(#) Study Intersection

Figure 24
Other Development
PM Peak Hour IntersectionTurning Movement Volumes

Legend

●## Vehicles Per Day (1,000's)

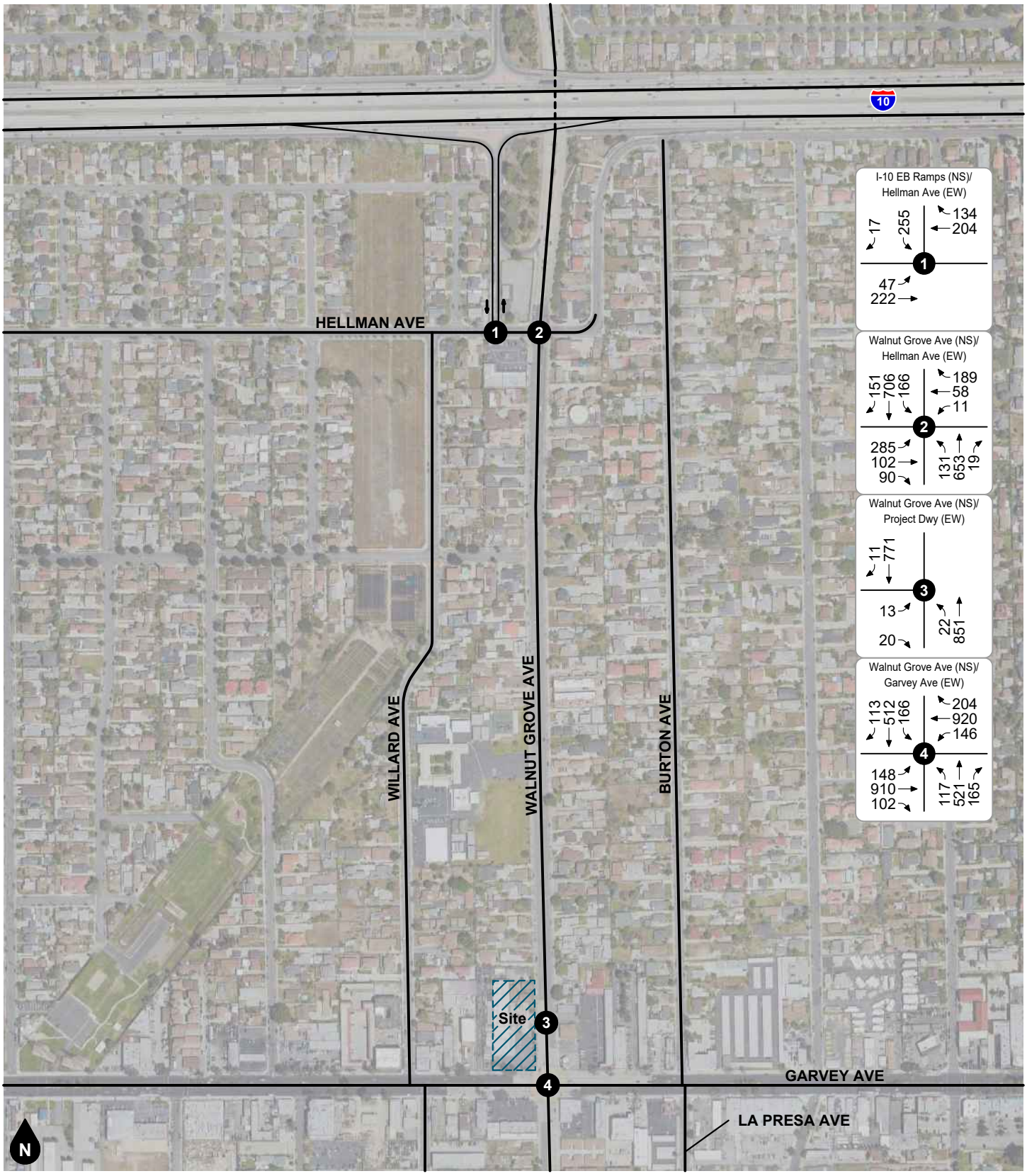
Figure 25
Existing Plus Project Average Daily Traffic Volumes



Legend

(#) Study Intersection

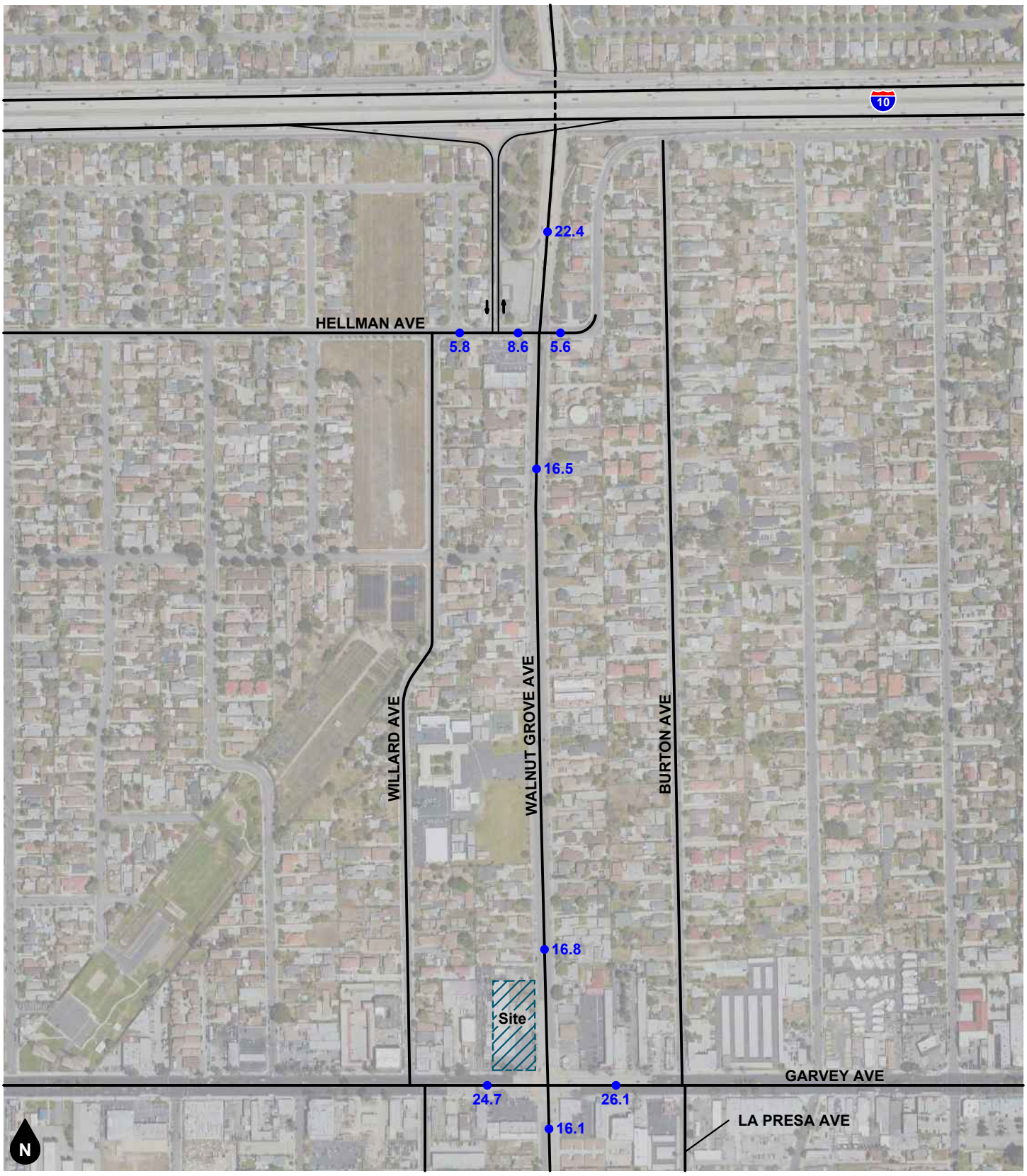
Figure 26
Existing Plus Project
AM Peak Hour IntersectionTurning Movement Volumes



Legend

(#) Study Intersection

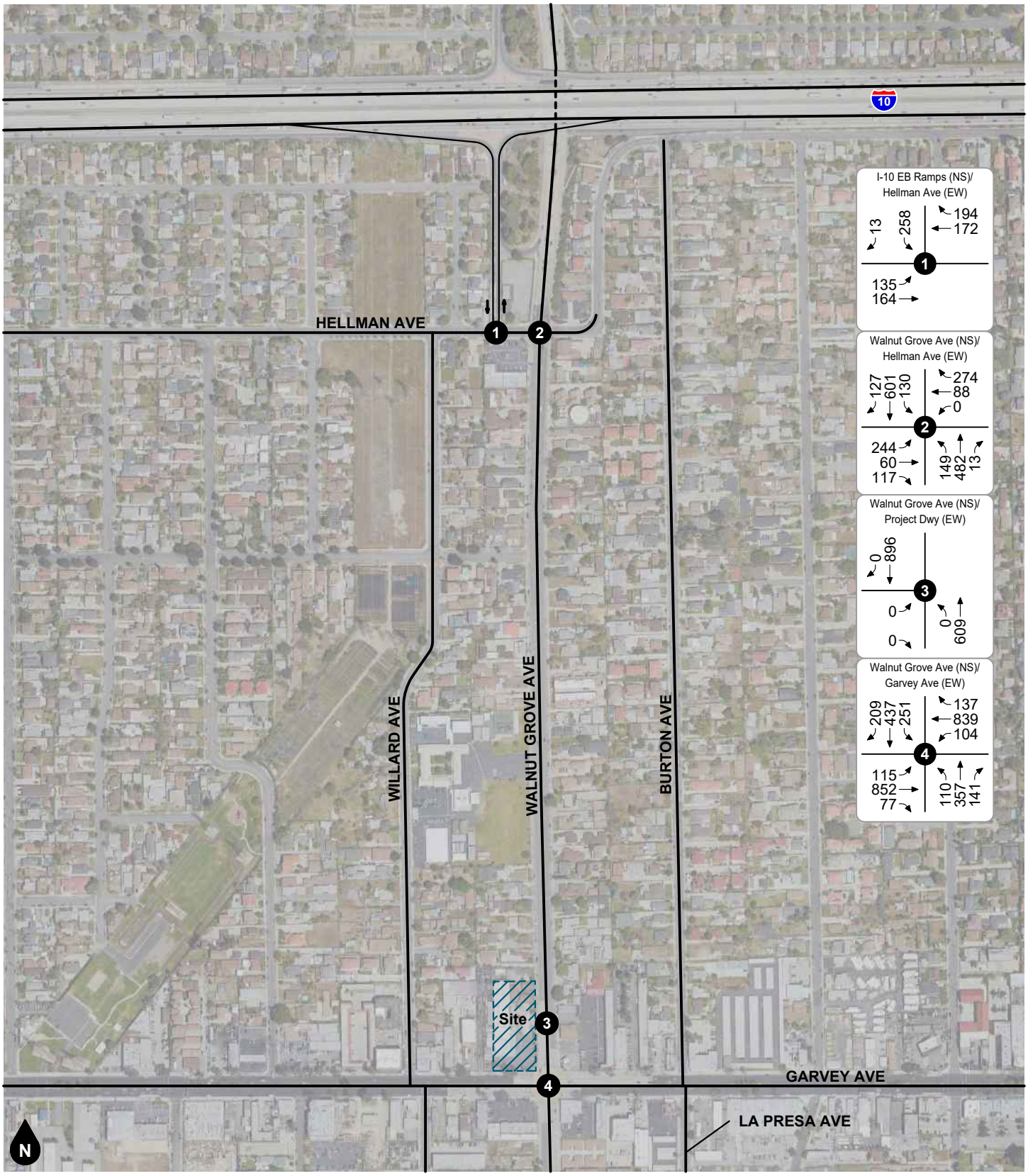
Figure 27
Existing Plus Project
PM Peak Hour IntersectionTurning Movement Volumes



Legend

●## Vehicles Per Day (1,000's)

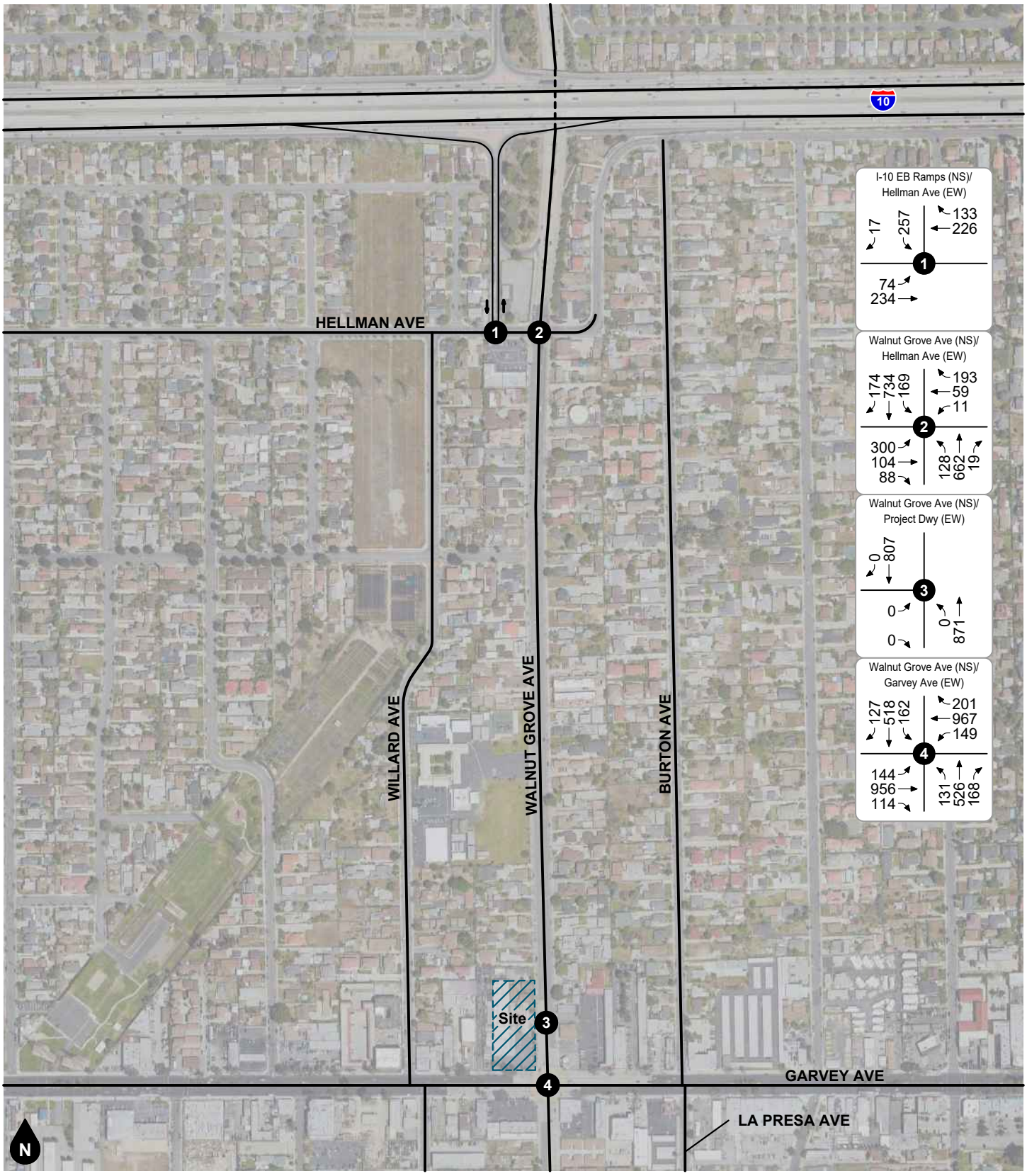
Figure 28
Opening Year (2022) Without Project Average Daily Traffic Volumes



Legend

(#) Study Intersection

Figure 29
Opening Year (2022) Without Project
AM Peak Hour IntersectionTurning Movement Volumes



Legend

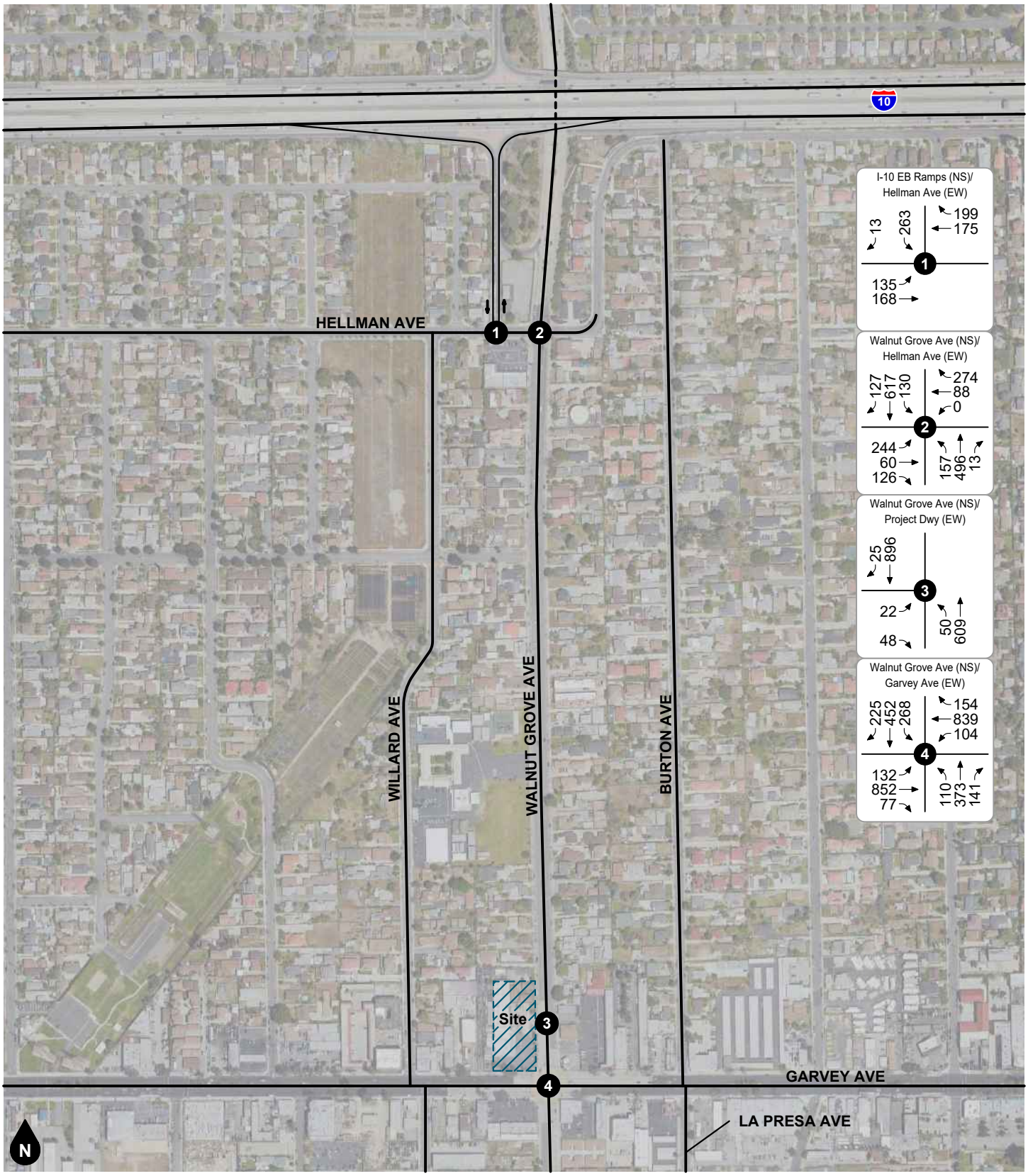
(#) Study Intersection

Figure 30
Opening Year (2022) Without Project
PM Peak Hour IntersectionTurning Movement Volumes

Legend

●## Vehicles Per Day (1,000's)

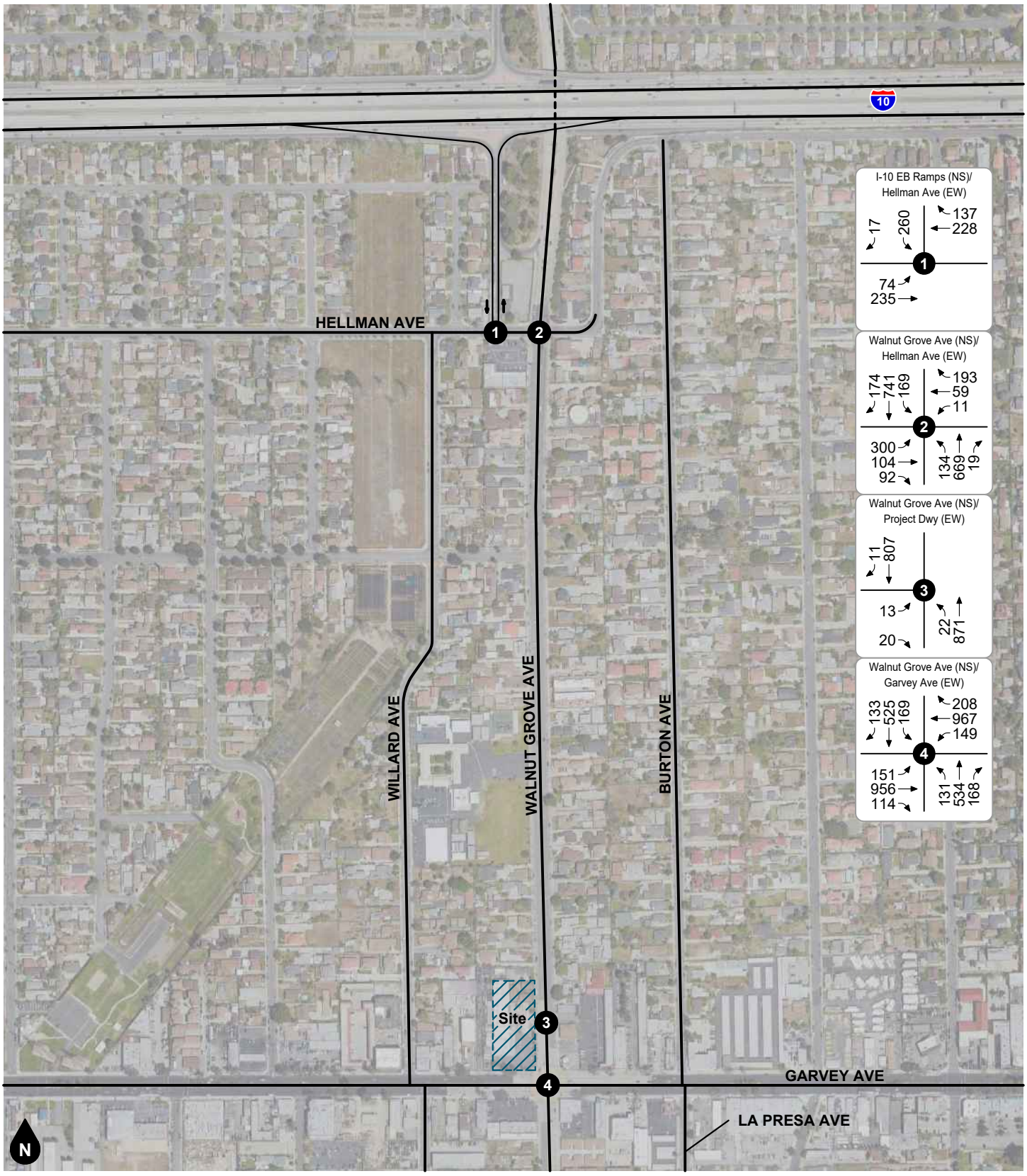
Figure 31
Opening Year (2022) With Project Average Daily Traffic Volumes



Legend

(#) Study Intersection

Figure 32
Opening Year (2022) With Project
AM Peak Hour IntersectionTurning Movement Volumes



Legend

(#) Study Intersection

Figure 33
Opening Year (2022) With Project
PM Peak Hour IntersectionTurning Movement Volumes

6. FUTURE OPERATIONAL ANALYSIS

Detailed intersection Level of Service calculation worksheets for each of the following analysis scenarios are provided in Appendix D.

EXISTING PLUS PROJECT

Intersection Levels of Service

The delay and Levels of Service for Existing Plus Project conditions are shown in Table 4. As shown in Table 4, the study intersections are forecast to operate at Levels of Service D or better during the peak hours for Existing Plus Project conditions.

Operational Impact Evaluation

Table 5 evaluates the project impact at the study intersections for Existing Plus Project conditions. As shown in Table 5, the proposed project is forecast to result in no operational traffic impacts at the study intersections for Existing Plus Project conditions.

OPENING YEAR (2022) WITHOUT PROJECT

Intersection Levels of Service

The delay and Levels of Service for Opening Year (2022) Without Project conditions are shown in Table 6. As shown in Table 6, the study intersections are forecast to operate at Levels of Service D or better during the peak hours for Opening Year (2022) Without Project conditions.

OPENING YEAR (2022) WITH PROJECT

Intersection Levels of Service

The delay and Levels of Service for Opening Year (2022) With Project conditions are shown in Table 7. As shown in Table 7, the study intersections are forecast to operate at Levels of Service D or better during the peak hours for Opening Year (2022) With Project conditions, except for the intersection of Walnut Grove Avenue at Project Driveway which is forecast to operate at LOS E during the AM peak hour.

Operational Impact Evaluation

Table 8 evaluates the project impact at the study intersections for Opening Year (2022) With Project conditions. As shown in Table 8, the proposed project is forecast to result in no operational traffic impacts at the study intersections for Opening Year (2022) With Project conditions.

Table 4
Existing Plus Project Intersection Level of Service

ID	Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
			ICU/Delay[2]	LOS[3]	ICU/Delay[2]	LOS[3]
1.	I-10 EB Ramps at Hellman Ave	TS	0.601	B	0.588	A
2.	Walnut Grove Ave at Hellman Ave	TS	0.694	B	0.731	C
3.	Walnut Grove Ave at Project Dwy	CSS	33.5	D	29.1	D
4.	Walnut Grove Ave at Garvey Ave	TS	0.724	C	0.777	C

Caltrans Highway Capacity Methodology Analysis						
ID	Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
			Delay[2]	LOS[3]	Delay[2]	LOS[3]
1.	I-10 EB Ramps at Hellman Ave	TS	34.6	C	34.1	C

Notes:

(1) TS = Traffic Signal; CSS = Cross Street Stop

(2) ICU = Intersection Capacity Utilization. Per the Highway Capacity Manual, overall average intersection delay and Level of Service are shown for intersections with all way stop control. For intersections with cross street stop control, the delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

(3) LOS = Level of Service

Table 5
Existing Plus Project Operational Impact Assessment

ID	Study Intersection	AM Peak Hour						PM Peak Hour					
		Existing		Existing Plus Project		Project-Related Change	Operational Impact?[3]	Existing		Existing Plus Project		Project-Related Change	Operational Impact?[3]
		ICU[1]	LOS[2]	ICU[1]	LOS[2]			ICU[1]	LOS[2]	ICU[1]	LOS[2]		
1.	I-10 EB Ramps at Hellman Ave	0.591	A	0.601	B	+0.010	No	0.583	A	0.588	A	+0.005	No
2.	Walnut Grove Ave at Hellman Ave	0.685	B	0.694	B	+0.009	No	0.726	C	0.731	C	+0.005	No
4.	Walnut Grove Ave at Garvey Ave	0.696	B	0.724	C	+0.028	No	0.765	C	0.777	C	+0.012	No

Notes:

(1) ICU = Intersection Capacity Utilization

(2) LOS = Level of Service

(3) In the Citiy of Rosemead, an operational impact occurs if the project-related increase in ICU equals or exceeds 0.02 when an intersection is operating at Level of Service F in the baseline.

Table 6
Opening Year (2022) Without Project Intersection Level of Service

ID	Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
			ICU/Delay[2]	LOS[3]	ICU/Delay[2]	LOS[3]
1.	I-10 EB Ramps at Hellman Ave	TS	0.620	B	0.623	B
2.	Walnut Grove Ave at Hellman Ave	TS	0.706	C	0.755	C
4.	Walnut Grove Ave at Garvey Ave	TS	0.713	C	0.787	C

Caltrans Highway Capacity Methodology Analysis						
ID	Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
			Delay[2]	LOS[3]	Delay[2]	LOS[3]
1.	I-10 EB Ramps at Hellman Ave	TS	34.7	C	34.5	C

Notes:

(1) TS = Traffic Signal

(2) ICU = Intersection Capacity Utilization. Per the Highway Capacity Manual, overall average intersection delay and Level of Service are shown for intersections with all way stop control.

(3) LOS = Level of Service

Table 7
Opening Year (2022) With Project Intersection Level of Service

ID	Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
			ICU/Delay[2]	LOS[3]	ICU/Delay[2]	LOS[3]
1.	I-10 EB Ramps at Hellman Ave	TS	0.629	B	0.628	B
2.	Walnut Grove Ave at Hellman Ave	TS	0.715	C	0.760	C
3.	Walnut Grove Ave at Project Dwy	CSS	35.3	E	30.9	D
4.	Walnut Grove Ave at Garvey Ave	TS	0.741	C	0.799	C

Caltrans Highway Capacity Methodology Analysis						
ID	Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
			Delay[2]	LOS[3]	Delay[2]	LOS[3]
1.	I-10 EB Ramps at Hellman Ave	TS	35.0	D	34.7	C

Notes:

(1) TS = Traffic Signal; CSS = Cross Street Stop

(2) ICU = Intersection Capacity Utilization. Per the Highway Capacity Manual, overall average intersection delay and Level of Service are shown for intersections with all way stop control. For intersections with cross street stop control, the delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

(3) LOS = Level of Service

Table 8
Opening Year (2022) With Project Operational Impact Assessment

ID	Study Intersection	AM Peak Hour						PM Peak Hour					
		Without Project		With Project		Project-Related Change	Operational Impact?[3]	Without Project		With Project		Project-Related Change	Operational Impact?[3]
		ICU[1]	LOS[2]	ICU[1]	LOS[2]			ICU[1]	LOS[2]	ICU[1]	LOS[2]		
1.	I-10 EB Ramps at Hellman Ave	0.620	B	0.629	B	+0.009	No	0.623	B	0.628	B	+0.005	No
2.	Walnut Grove Ave at Hellman Ave	0.706	C	0.715	C	+0.009	No	0.755	C	0.760	C	+0.005	No
3.	Walnut Grove Ave at Project Dwy	33.5	D	35.3	E	+1.800	No	29.1	D	30.9	D	+1.800	No
4.	Walnut Grove Ave at Garvey Ave	0.713	C	0.741	C	+0.028	No	0.787	C	0.799	C	+0.012	No

Notes:

(1) ICU = Intersection Capacity Utilization

(2) LOS = Level of Service

(3) In the Citiy of Rosemead, an operational impact occurs if the project-related increase in ICU equals or exceeds 0.02 when an intersection is operating at Level of Service F in the baseline.

7. SITE ACCESS AND CIRCULATION

This section includes a description of project improvements necessary to provide site access and an evaluation of site access and circulation.

PROJECT DESIGN FEATURES

The proposed project shall construct the following improvements as project design features to provide project site access:

- Construct the Walnut Grove Avenue (NS) at Project Driveway (EW) to provide one inbound lane and one outbound lane with eastbound stop-control and the following lane configurations:
  - Northbound: two through lanes
  - Southbound: one through lane and shared through/right turn lane
  - Eastbound: one shared left/ right turn lane
  - Westbound: not applicable

This analysis also assumes the project shall comply with the following conditions as part of the City of Rosemead standard development review process:

- A construction work site traffic control plan shall comply with State standards set forth in the California Manual of Uniform Traffic Control Devices and shall be submitted to the City for review and approval prior to the issuance of a grading permit or start of construction. The plan shall identify any roadway, sidewalk, bike route, or bus stop closures and detours as well as haul routes and hours of operation. All construction related trips shall be restricted to off-peak hours to the extent possible.

- All on-site and off-site roadway design, traffic signing and striping, and traffic control improvements relating to the proposed project shall be constructed in accordance with applicable State/Federal engineering standards and to the satisfaction of the City of Rosemead.

- Site-adjacent roadways shall be constructed or repaired at their ultimate half-section width, including landscaping and parkway improvements in conjunction with development, or as otherwise required by the City of Rosemead.

- Adequate off-street parking shall be provided to the satisfaction of City of Rosemead.

- Adequate emergency vehicle access shall be provided to the satisfaction of the Rosemead Fire Department.

- The final grading, landscaping, and street improvement plans shall demonstrate that sight distance requirements are met in accordance with applicable City of Rosemead/California Department of Transportation sight distance standards.

COMMUNITY HALL OPERATIONS

The community hall proposed for the project site has a total floor area of 5,500 square feet, including non-fixed stage area. As designed, the total occupancy could be up to 300 non-fixed seats. The existing Taiwan Center hours of operation are 9:00 AM to 5:00 PM daily, except for Mondays when it is closed. The hours of operation for the new community hall are expected to be the same. While the community hall can be rented

out to the public, it is not expected to be rented out with any frequency since the existing hall rarely gets rented out by the public.

The community hall will typically be used for lectures about once a month, and once a week painting and dancing classes. The estimated attendance for lectures is up to 120 people and up to 30 people for classes. Lectures and classes are typically done during the daytime in off-peak hours. An annual event of the Taiwan Center will continue to be held in the outside Hotel Convention Hall each year. Last year it was held at the San Gabriel Hilton and thus will not take place at this location. Holiday events occur 2 to 3 times per year, including New Year and Moon Festival. Attendees for these events are up to 200 people maximum. Hours of operation for event days are from 9:00 AM to 9:00 PM.

The project applicant has stated that valet parking can be provided whenever it is needed. Although large scale events are only expected twice a year, it is recommended that a valet parking plan be prepared and submitted to the City for review. This valet parking plan will need to be approved by the City of Rosemead Fire Department.

QUEUEING ANALYSIS

A queuing analysis has been performed for Opening Year (2022) With Project conditions for the southbound through/right turn movements at the intersection of Walnut Grove Avenue at Garvey Avenue, which is a key movement for project access since the project driveway is located approximately 155 feet north of this intersection. The queuing analysis is based on a Poisson probability distribution for random vehicle arrivals and a uniform Los Angeles County 100 second cycle length. Queue calculation worksheets provided in Appendix E.

Table 9 shows the queuing analysis summary based on the 95th-percentile queue length. The 95th-percentile queue length effectively represents the maximum queue length expected (to a 95 percent confidence level) and is an industry accepted standard for determining turning lane storage and intersection spacing requirements.

Based on the queuing analysis shown in Table 9, the southbound through/right turn movements at the intersection of Walnut Grove Avenue at Garvey Avenue are forecast to queue past the project driveway. Therefore, there is potential for southbound vehicles to queue northbound along Walnut Grove Avenue from the Garvey Avenue intersection and block vehicular access in/out of the project driveway. Outbound trips at the project driveway would queue internally and not affect operations on Walnut Grove Avenue; however, vehicles heading northbound on Walnut Grove Avenue turning left into the project site may need to stop and wait for southbound vehicles to clear the project driveway. Since the northbound left turning vehicles would be doing so from a shared through/left turn lane, northbound motorists on Walnut Grove Avenue may be forced to stop and queue behind these northbound left turning vehicles into the project site. This would be a less than ideal situation for efficient traffic operations.

Table 10 shows an Opening Year (2022) With Project intersection level of service analysis with driveway restrictions. For this analysis, the project driveway is assumed to provide right turns in/out only access. The project trip distributions were manually adjusted and are included in Appendix F. As shown in Table 10, the project driveway is forecast to operate at LOS B during both the AM and PM peak hours with these restrictions. As a full access driveway, the project driveway was forecast to operate at LOS E during the AM peak hour. Thus, the driveway is forecast to operate within acceptable LOS during the peak hours, while removing the opportunity for northbound left turning vehicles into the project site from stopping on Walnut Grove Avenue creating potential stacking and safety issues on this roadway, with these project driveway restrictions. It should be noted, a raised median would be required to effectively preclude the northbound left turn in movement.

If the project driveway is restricted to right turns in/out only access, vehicles exiting the project intending to go northbound, and vehicles entering the project site coming northbound would need to change travel patterns circuitously around the roadway network near the project site. This would increase traffic volumes on nearby roadway segments and intersections while also increasing Vehicle Miles Traveled (VMT) since the direct routes to/from the project site that a full access driveway allows would be removed.

Therefore, it is recommended that the project applicant and City of Rosemead evaluate the positives and negatives that project access restrictions would create and determine the best course of action regarding project access restrictions.

On-Site Parking

The City of Rosemead Municipal Code Section 17.112.040.1 lists off-street parking requirements. Below are the parking spaces required and parking spaces provided for the project site based on the City of Rosemead Municipal Code:

14. PARKING SPACE:

REQUIRED COMMERCIAL:

COMMUNITY HALL	5,520 SF. / 75	=	74 P
MANAGER OFFICE	250 SF. / 250	=	1 P
CAFE/FOOD PLACES	1,130 SF. / 100	=	11 P
RETAILS/SALES/SERVICES	5,274 SF. / 250	=	21 P
OFFICE SUITES (@2ND FLR)	5,470 SF. / 250	=	22 P
COMMERCIAL SUBTOTAL:	17,644 SF.	=	129 P

REQUIRED RESIDENTIAL:

TYPE A 2-BEDRM UNIT	29 U X 2P	=	58 P
TYPE B 1-BEDRM UNIT	13 U X 1P	=	13 P
(PER DENSITY BONUS: GUEST PARKING INCLUDED)			71 P
TOTAL REQUIRED:		=	200 P

PROVIDED:

AREA	STANDARD	COMPACT	H.C.	LOADING	TOTAL	REQ'D	SURPLUS
COMM.	95	29	5	–	129	129	0
RESIDENTIAL	73	0	2	–	75	71	4
TOTAL	168	29	7	–	204	200	4

COMPACT PARKING 29/136 = 21.3% < 25% MAX.

BIKE PARKING PROVIDED: 24 TOTAL; 12 BIKE RACKS ON MEZZANINE LEVEL AND 12 BIKE RACKS ON GROUND LEVEL (10% OF 210 PARKING SPACES = 21 REQ'D)

The proposed project is required to provide 200 parking spaces. The project site is proposing 204 parking spaces. Therefore, adequate parking is provided per City requirements. In addition, the project is providing 24 bicycle parking stalls with 21 bicycle parking stalls required. Appendix G exhibits the site plans for each floor showing parking space locations and allocation.

Trash Truck Circulation

Figure 34 and Figure 35 show trash truck circulation for the trash enclosures located on the project site. A modern garbage truck will not be able to access the trash enclosures within the project site. For mixed-use projects with parking garages, a contract is made with the trash company in which the trash company uses pickup trucks equipped to lift dumpsters to move the trash from the trash enclosures to the roadway. These pickup trucks will remove the trash from the enclosure and drop it off on Walnut Grove Avenue near the project driveway for a normal modern trash truck to pick up and dispose of the trash. The pickup truck will then return the dumpsters to the trash enclosure. Figure 34 and Figure 35 show what pickup trucks equipped to lift dumpsters.

TRUCK ACCESS POINTS AND TURNING TEMPLATES

Figure 36 and Figure 37 show the truck turning templates to access the project site to/from the loading area. Truck turning templates are provided for both inbound and outbound truck turning movements on Walnut Grove Avenue to/from the project site. As shown on Figure 36, inbound trucks servicing the project site will enter the driveway from Walnut Grove Avenue and proceed to the loading area. Trucks will then drive northbound through the drive aisle to the northwest portion of the project site. They will then leave the loading area and proceed to the driveway using the same path of travel they used to get to the loading area (see Figure 37). The truck turning templates used a common DL-23 delivery truck.

Trucks can also temporarily use the fire lane on the northern portion of the project site for larger items and/or if the vehicles are too large to enter the parking garage.

TRUCK DELIVERY SCHEDULE

Truck deliveries shall occur only during off-peak hours so that any potential conflict between trucks and customers of the project site land uses will be minimal.

ON-SITE VEHICULAR STACKING

Figure 38 shows the on-site stacking for outbound vehicles leaving the project site.

Table 9
Queuing Analysis Summary

ID	Study Intersection	Lane[1]	Existing Storage Length (Feet/Lane)	95th-Percentile Queue Length (Feet/Lane) Opening Year With Project	
				AM Peak Hour	PM Peak Hour
4.	Walnut Grove Ave at Garvey Ave	SBTR	155	325	325

Notes:
(1) SB = Southbound; TR = Through/Right

Table 10
Opening Year (2022) With Project Intersection Level of Service - With Driveway Restrictions

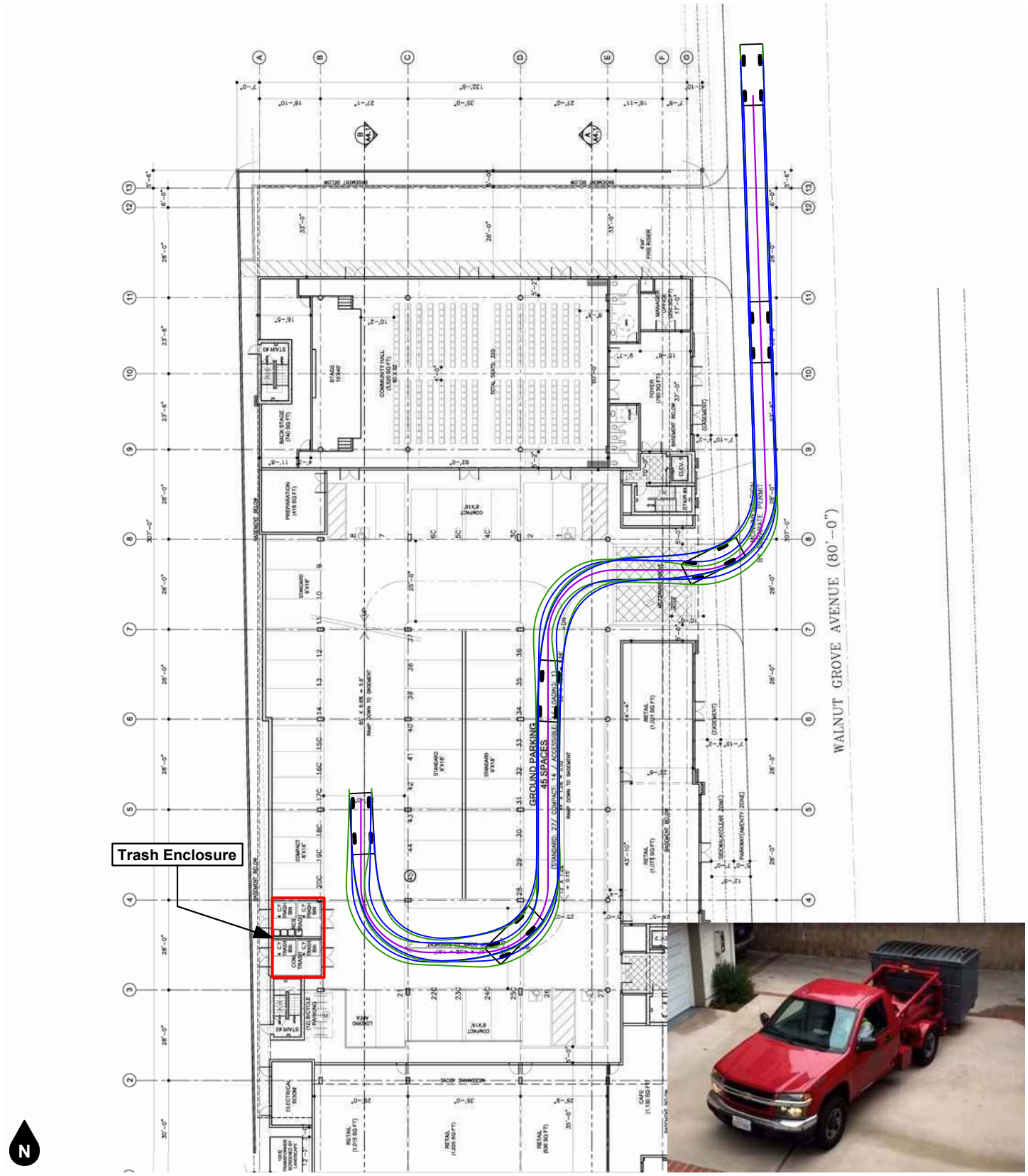
ID	Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
			ICU/Delay[2]	LOS[3]	ICU/Delay[2]	LOS[3]
1.	I-10 EB Ramps at Hellman Ave	TS	0.641	B	0.633	B
2.	Walnut Grove Ave at Hellman Ave	TS	0.718	C	0.761	C
3.	Walnut Grove Ave at Project Dwy	CSS	12.9	B	11.6	B
4.	Walnut Grove Ave at Garvey Ave	TS	0.726	C	0.793	C

Notes:

(1) TS = Traffic Signal; CSS = Cross Street Stop

(2) ICU = Intersection Capacity Utilization. Per the Highway Capacity Manual, overall average intersection delay and Level of Service are shown for intersections with all way stop control. For intersections with cross street stop control, the delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

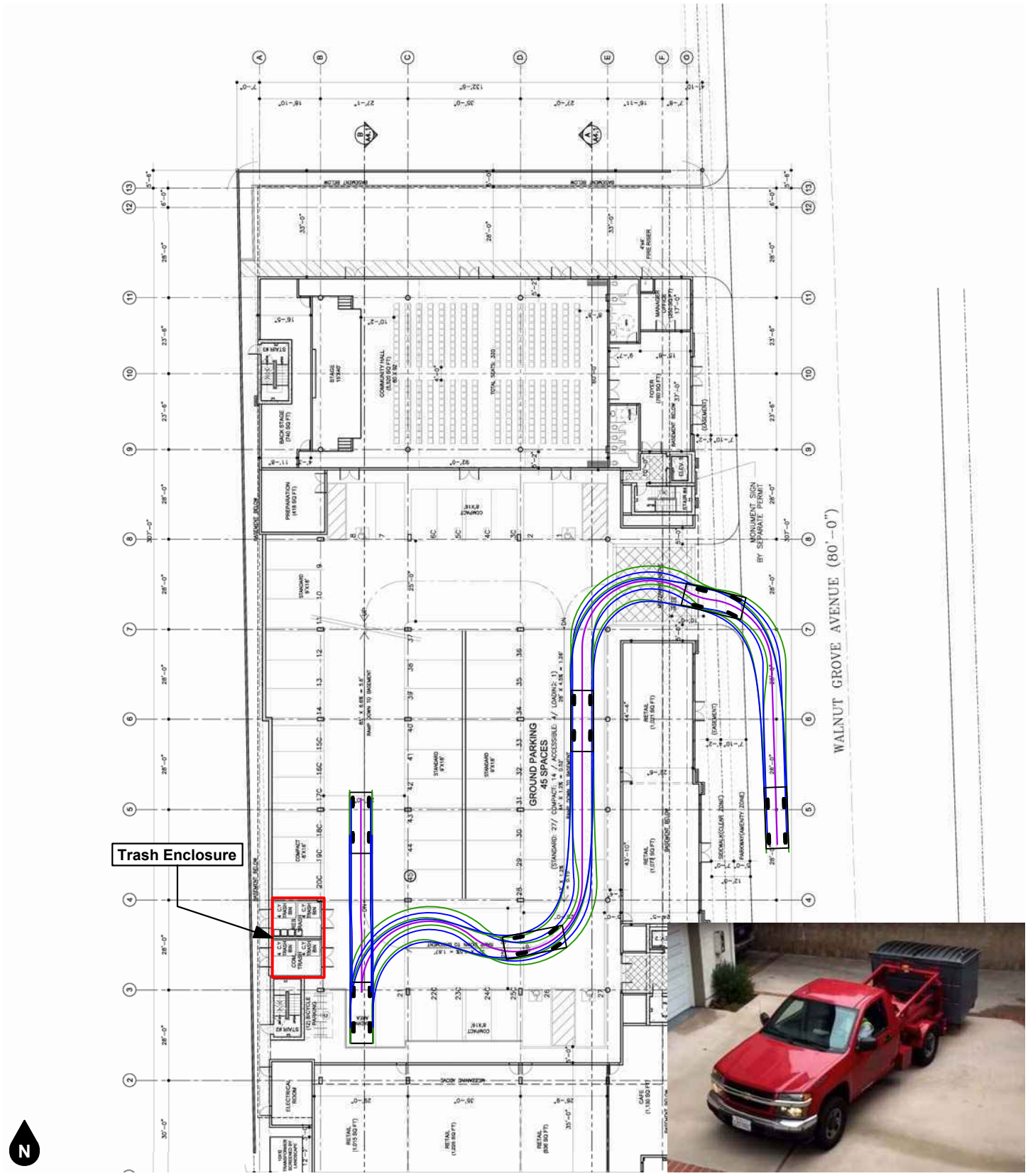
(3) LOS = Level of Service



Legend

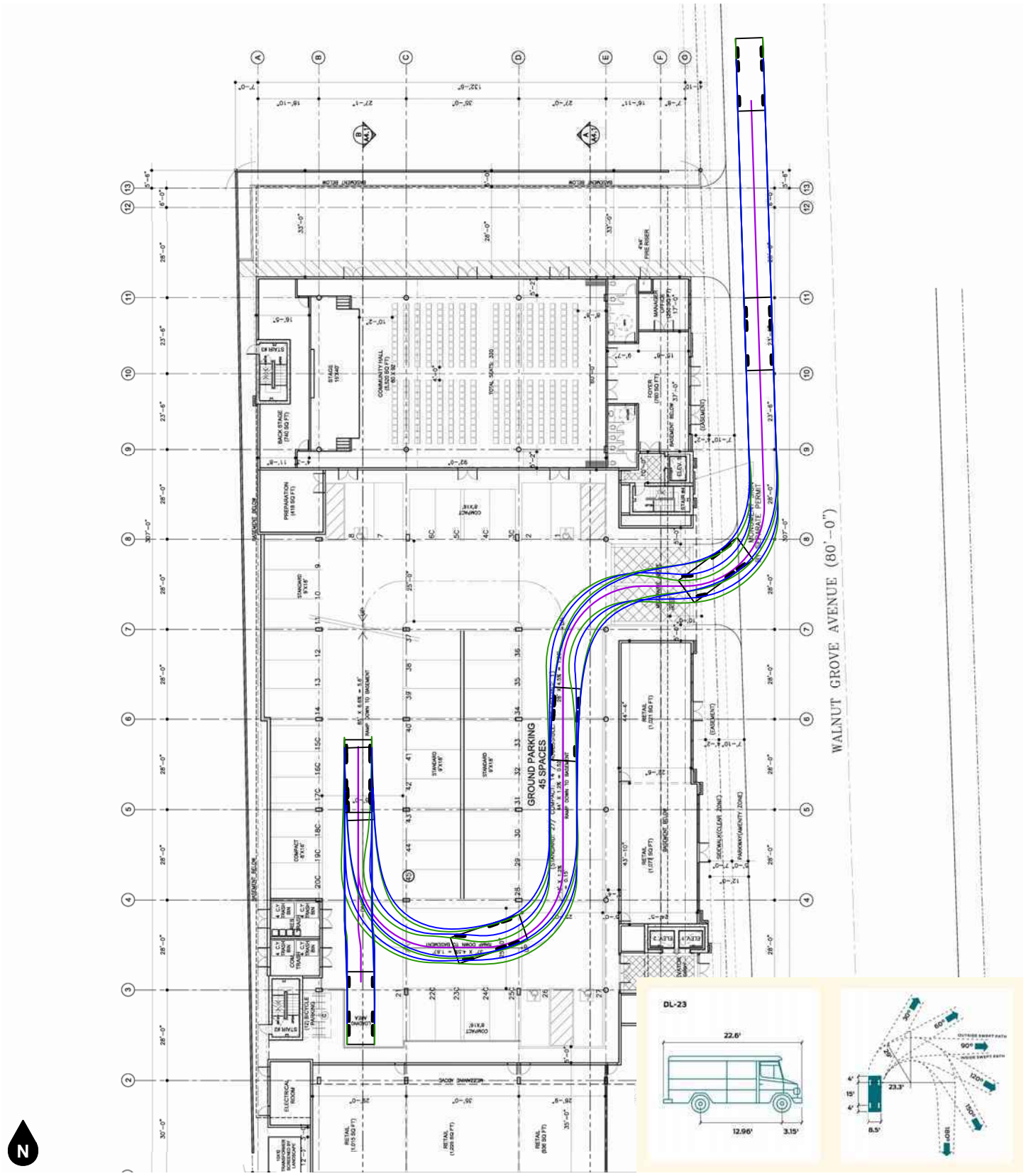
- Vehicle Wheel Path
- Vehicle Overhang
- Vehicle Centerline

Figure 34
Trash Truck Circulation - Inbound



Legend
- Vehicle Wheel Path
- Vehicle Overhang
- Vehicle Centerline

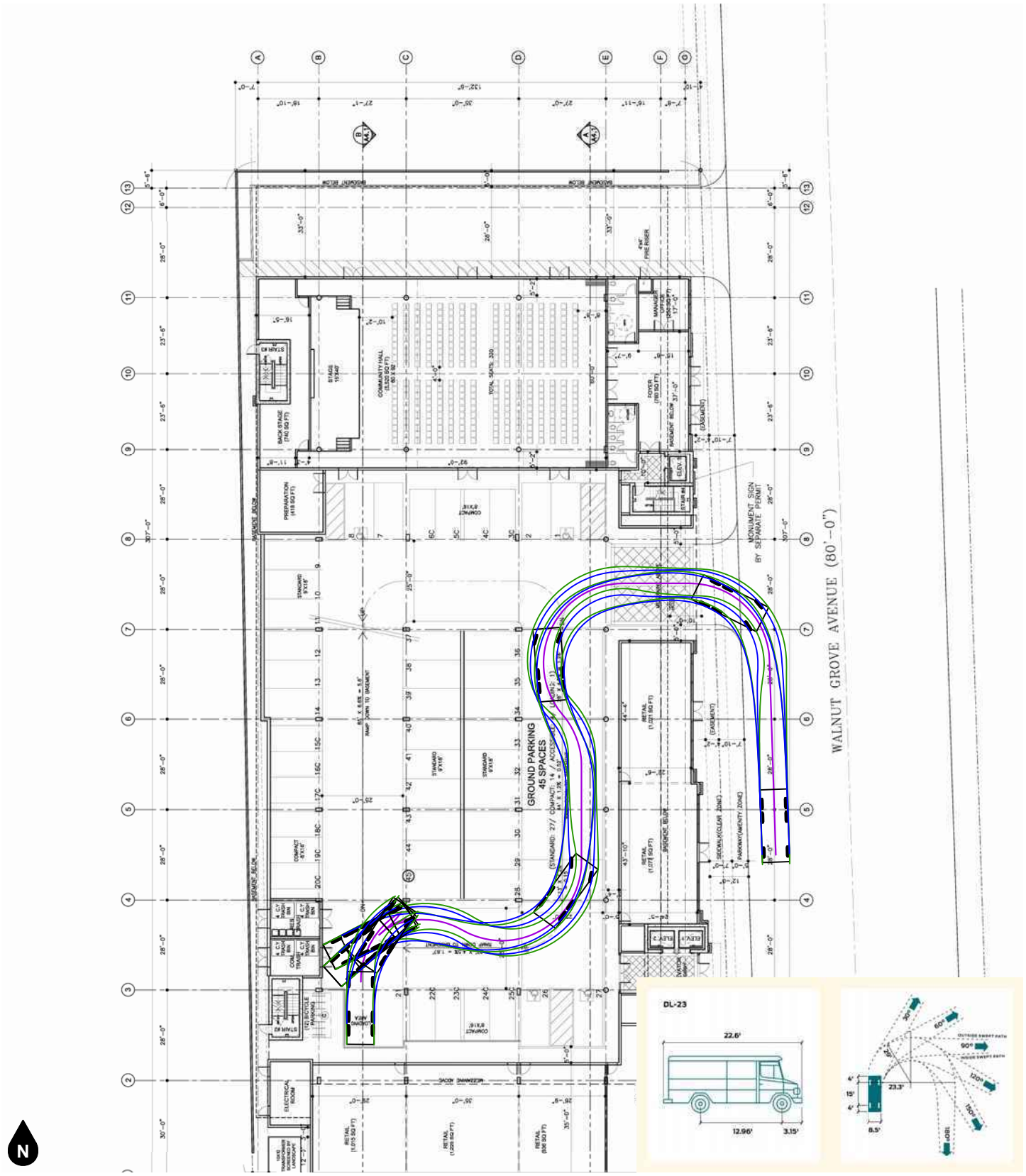
Figure 35
Trash Truck Circulation - Outbound



Legend

- Vehicle Wheel Path
- Vehicle Overhang
- Vehicle Centerline

Figure 36
Truck Turning Templates - Inbound



Legend
- Vehicle Wheel Path
- Vehicle Overhang
- Vehicle Centerline

Figure 37
Truck Turning Templates - Outbound

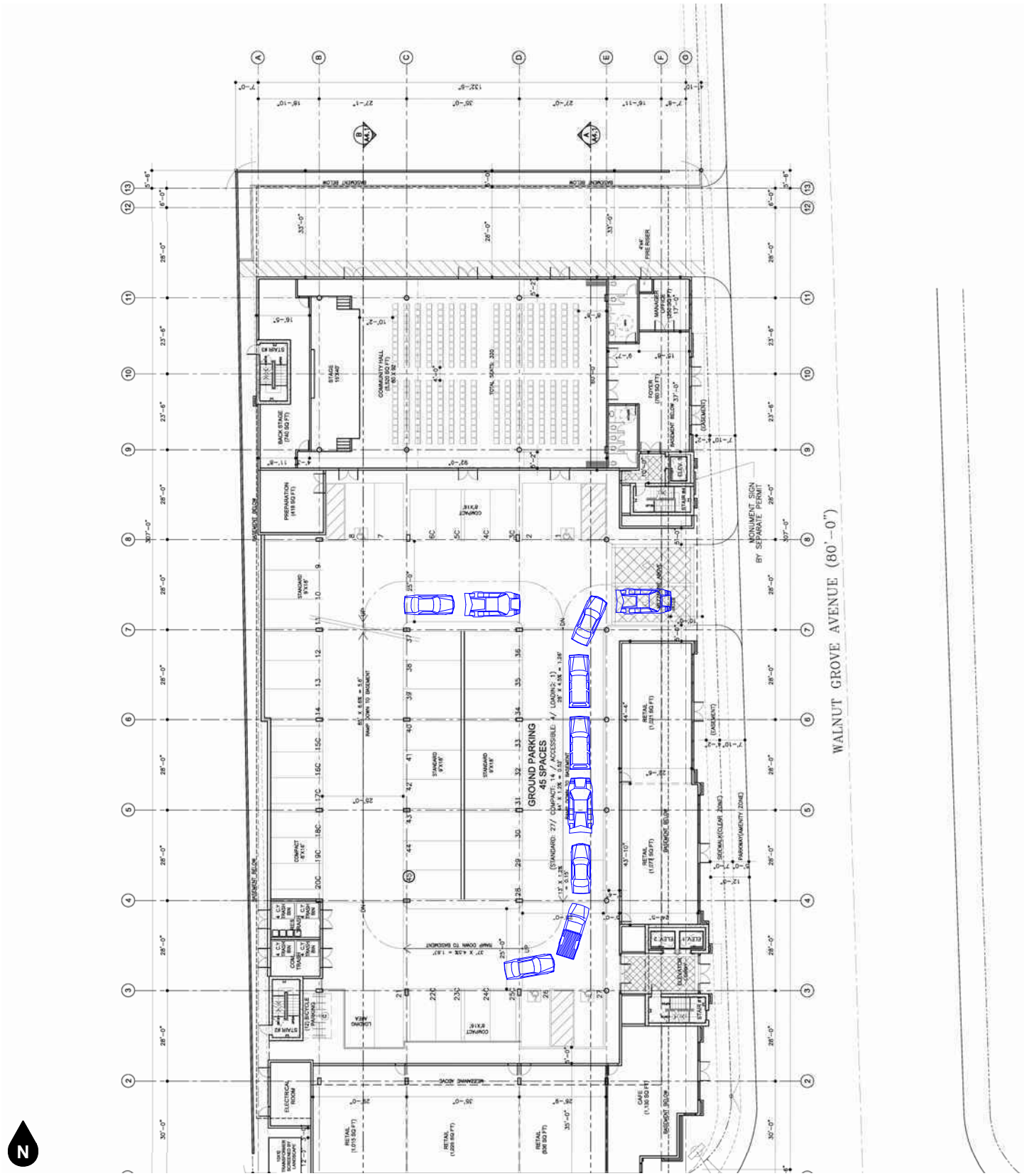


Figure 38
On-Site Stacking for Outbound Vehicles

8. CONGESTION MANAGEMENT PROGRAM

This section provides analysis of the project impacts at County facilities in accordance with typical Los Angeles County Congestion Management Program (CMP) requirements.

CRITERIA FOR REQUIRING A TRAFFIC IMPACT ANALYSIS FOR CMP

The Los Angeles County 2010 CMP provides the following thresholds for requiring a CMP-compliant traffic impact analysis:

- All CMP arterial monitoring intersections, including monitored freeway on or off-ramp intersections, where the proposed project will add 50 or more trips during either the AM or PM weekday peak hours (of adjacent street traffic)

- If CMP arterial segments are being analyzed rather than intersections, the study area must include all segments where the proposed project will add 50 or more peak hour trips (total of both directions).

- Mainline freeway monitoring locations were the project will add 150 or more trips, in either direction, during either the AM or PM weekday peak hours.

As previously shown in Table 2, the proposed project is forecast to generate approximately 143 AM peak hour trips and 65 PM peak hour trips, which are distributed from the project site. The intersection of Walnut Grove Avenue at Garvey Avenue is not a CMP intersection. The project will not add 150 or more peak hour trips to the I-10 Freeway since the project generates less than this threshold in total during each peak hour. Therefore, the proposed project would not result in a CMP impact as it does not meet the thresholds requiring a traffic impact analysis for CMP purposes and no further CMP traffic analysis is warranted.

CMP TRANSIT IMPACT REVIEW

The Los Angeles County Metropolitan Transportation Authority 2010 Congestion Management Program Appendix D - Guidelines for CMP Transportation Impact Analysis 8.4 utilizes a conversion factor based on the daily and AM and PM peak hour trip generation to provide for a transit analysis. The conversion is as follows:

- Multiply the total trips generated by 1.4 to convert vehicle trips to person trips;
- For each time period, multiply the result by one of the following factors:

  3.5% of Total Person Trips Generated for most cases, except:

  10% primarily Residential within 1/4 mile of a CMP transit center
  15% primarily Commercial within 1/4 mile of a CMP transit center
  7% primarily Residential within 1/4 mile of a CMP multi-modal transportation center
  9% primarily Commercial within 1/4 mile of a CMP multi-modal transportation center
  5% primarily Residential within 1/4 mile of a CMP transit corridor
  7% primarily Commercial within 1/4 mile of a CMP transit corridor
  0% if no fixed route transit services operate within one mile of the project

Accordingly, the proposed project-generated transit trips are calculated as follows:

- Daily: ((1,009 trips x 1.4) x 0.035) ≈ 49
- Morning Peak Hour: ((143 trips x 1.4) x 0.035) ≈ 7
- Evening Peak Hour: ((65 trips x 1.4) x 0.035) ≈ 3

The proposed project is forecast to generate approximately seven (7) transit trips during the AM peak hour and approximately three (3) transit trips during the PM peak hour. Based on the existing transit services available in the project vicinity and the relatively low transit trip generation, the proposed project is forecast to have a nominal impact on transit service.

9. VEHICLE MILES TRAVELED (VMT)

BACKGROUND

California Senate Bill 743 (SB 743) directs the State Office of Planning and Research (OPR) to amend the California Environmental Quality Act (CEQA) Guidelines for evaluating transportation impacts to provide alternatives to Level of Service that "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." In December 2018, the California Natural Resources Agency certified and adopted the updated CEQA Guidelines package. The amended CEQA Guidelines, specifically Section 15064.3, recommend the use of Vehicle Miles Travelled (VMT) as the primary metric for the evaluation of transportation impacts associated with land use and transportation projects. In general terms, VMT quantifies the amount and distance of automobile travel attributable to a project or region. All agencies and projects State-wide are required to utilize the updated CEQA guidelines recommending use of VMT for evaluating transportation impacts as of July 1, 2020.

The updated CEQA Guidelines allow for lead agency discretion in establishing methodologies and thresholds provided there is substantial evidence to demonstrate that the established procedures promote the intended goals of the legislation. Where quantitative models or methods are unavailable, Section 15064.3 allows agencies to assess VMT qualitatively using factors such as availability of transit and proximity to other destinations. The Office of Planning and Research (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA (State of California, December 2018) ["OPR Technical Advisory"] provides technical considerations regarding methodologies and thresholds with a focus on office, residential, and retail developments as these projects tend to have the greatest influence on VMT.

SCREENING CRITERIA

The City of Rosemead adopted its VMT guidelines and the City has provided this information for use in this analysis. Therefore, the project VMT impact has been assessed in accordance with the City of Rosemead VMT guidelines and guidance from City staff.

Consistent with recommendations in the OPR Technical Advisory, the City of Rosemead has established screening criteria for certain projects that may be presumed to have a less than significant VMT impact, including projects located in low-VMT generating areas.

The proposed project is located in a low-VMT generating area. Therefore, the proposed project satisfies the screening criteria for low-VMT generating area and may be presumed to result in a less than significant VMT impact in accordance with City of Rosemead VMT guidelines.

The SGVCOG VMT Evaluation Report has been provided by the City of Rosemead staff and is included in Appendix H.

10. CONCLUSIONS

This section summarizes the findings and mitigation measures (if any) identified in previous sections of this study.

FORECAST LEVELS OF SERVICE

The proposed project is forecast to result in no Level of Service operational impacts at the off-site study intersections during the weekday AM and PM peak hours for the scenarios evaluated.

No off-site operational improvements were identified since the proposed project is forecast to result in no operational traffic impact at the off-site study intersections for Opening Year (2022) With Project conditions.

CONGESTION MANAGEMENT PROGRAM

The proposed project would result in no operational CMP impact as it does not meet the thresholds requiring a traffic impact analysis for CMP purposes and no further CMP analysis is warranted. A transit impact review was conducted for compliance with the CMP requirements and found that the proposed project is forecast to have a nominal impact on transit service.

SITE ACCESS AND CIRCULATION

The proposed project shall construct the following improvements as project design features to provide project site access:

- Construct the Walnut Grove Avenue (NS) at Project Driveway (EW) to provide one inbound lane and one outbound lane with eastbound stop-control and the following lane configurations:
    - Northbound: two through lanes
    - Southbound: one through lane and shared through/right turn lane
    - Eastbound: one shared left/ right turn lane
    - Westbound: not applicable

Due to the potential for queued vehicles on Walnut Grove Avenue to block the project driveway, an access alternative access analysis assuming right in/out only access was performed. While right in/out only access would improve Level of Service operations at the project driveway and preclude the potential for project trips entering from northbound Walnut Grove Avenue to block northbound through traffic, such access restrictions would require construction of a raised median and result in more circuitous travel for project trips accessing the site.

It is recommended that the project applicant and City of Rosemead evaluate the positives and negatives that project access restrictions would create and determine the best course of action regarding project access restrictions.

VMT EVALUATION

The proposed project satisfies the screening criteria for low-VMT generating area and may be presumed to result in a less than significant VMT impact in accordance with City of Rosemead VMT guidelines.

APPENDICES

Appendix A Glossary
Appendix B Scoping Agreement
Appendix C Volume Count Worksheets
Appendix D Level of Service Worksheets
Appendix E Queuing Worksheets
Appendix F Project Trip Distributions – Driveway Restrictions
Appendix G Site Plans
Appendix H VMT Worksheets

APPENDIX A

GLOSSARY

GLOSSARY OF TERMS

ACRONYMS

AC	Acres
ADT	Average Daily Traffic
Caltrans	California Department of Transportation
DU	Dwelling Unit
ICU	Intersection Capacity Utilization
LOS	Level of Service
TSF	Thousand Square Feet
V/C	Volume/Capacity
VMT	Vehicle Miles Traveled

TERMS

AVERAGE DAILY TRAFFIC: The average 24-hour volume for a stated period divided by the number of days in that period. For example, Annual Average Daily Traffic is the total volume during a year divided by 365 days.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A point of constriction along a roadway that limits the amount of traffic that can proceed downstream from its location.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass over a given section of a lane or a roadway in a given time period.

CHANNELIZATION: The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians.

CLEARANCE INTERVAL: Nearly same as yellow time. If there is an all red interval after the end of a yellow, then that is also added into the clearance interval.

CONTROL DELAY: The component of delay, typically expressed in seconds per vehicle, resulting from the type of traffic control at an intersection. Control delay is measured by comparison with the uncontrolled condition; it includes delay incurred by slowing down, stopping/waiting, and speeding up.

CORDON: An imaginary line around an area across which vehicles, persons, or other items are counted (in and out).

CORNER SIGHT DISTANCE: The minimum sight distance required by the driver of a vehicle to cross or enter the lanes of the major roadway without requiring approaching traffic travelling at a given speed to radically alter their speed or trajectory. Corner sight distance is measured from the driver's eye at 42 inches above the pavement to an object height of 36 inches above the pavement in the center of the nearest approach lane.

CYCLE LENGTH: The time period in seconds required for a traffic signal to complete one full cycle of indications.

CUL-DE-SAC: A local street open at one end only and with special provisions for turning around.

DAILY CAPACITY: A theoretical value representing the daily traffic volume that will typically result in a peak hour volume equal to the capacity of the roadway.

DELAY: The time consumed while traffic is impeded in its movement by some element over which it has no control, usually expressed in seconds per vehicle.

DEMAND RESPONSIVE SIGNAL: Same as traffic-actuated signal.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device that responds to a physical stimulus and transmits a resulting impulse to the signal controller.

DESIGN SPEED: A speed selected for purposes of design. Features of a highway, such as curvature, superelevation, and sight distance (upon which the safe operation of vehicles is dependent) are correlated to design speed.

DIRECTIONAL SPLIT: The percent of traffic in the peak direction at any point in time.

DIVERSION: The rerouting of peak hour traffic to avoid congestion.

FORCED FLOW: Opposite of free flow.

FREE FLOW: Volumes are well below capacity. Vehicles can maneuver freely and travel is unimpeded by other traffic.

GAP: Time or distance between successive vehicles in a traffic stream, rear bumper to front bumper.

HEADWAY: Time or distance spacing between successive vehicles in a traffic stream, front bumper to front bumper.

INTERCONNECTED SIGNAL SYSTEM: A number of intersections that are connected to achieve signal progression.

LEVEL OF SERVICE: A qualitative measure of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MINIMUM ACCEPTABLE GAP: Smallest time headway between successive vehicles in a traffic stream into which another vehicle is willing and able to cross or merge.

MULTI-MODAL: More than one mode; such as automobile, bus transit, rail rapid transit, and bicycle transportation modes.

OFFSET: The time interval in seconds between the beginning of green at one intersection and the beginning of green at an adjacent intersection.

PLATOON: A closely grouped component of traffic that is composed of several vehicles moving, or standing ready to move, with clear spaces ahead and behind.

PASSENGER CAR EQUIVALENT (PCE): A metric used to assess the impact of larger vehicles, such as trucks, recreational vehicles, and buses, by converting the traffic volume of larger vehicles to an equivalent number of passenger cars.

PEAK HOUR: The 60 consecutive minutes with the highest number of vehicles.

PRETIMED SIGNAL: A type of traffic signal that directs traffic to stop and go on a predetermined time schedule without regard to traffic conditions. Also, fixed time signal.

PROGRESSION: A term used to describe the progressive movement of traffic through several signalized intersections.

QUEUE: The number of vehicles waiting at a service area such as a traffic signal, stop sign, or access gate.

QUEUE LENGTH: The length of vehicle queue, typically expressed in feet, waiting at a service area such as a traffic signal, stop sign, or access gate.

SCREEN-LINE: An imaginary line or physical feature across which all trips are counted, normally to verify the validity of mathematical traffic models.

SHARED/RECIPROCAL PARKING AGREEMENT: A written binding document executed between property owners to provide a designated number of off-street parking stalls within a designated area to be available for specified businesses or land uses.

SIGHT DISTANCE: The continuous length of roadway visible to a driver or roadway user.

SIGNAL CYCLE: The time period in seconds required for one complete sequence of signal indications.

SIGNAL PHASE: The part of the signal cycle allocated to one or more traffic movements.

STACKING DISTANCE: The length of area available behind a service area, such as a traffic signal or gate, for vehicle queueing to occur.

STARTING DELAY: The delay experienced in initiating the movement of queued traffic from a stop to an average running speed through an intersection.

STOPPING SIGHT DISTANCE: The minimum distance required by the driver of a vehicle on the major roadway travelling at a given speed to bring the vehicle to a stop after an object on the road becomes visible. Stopping sight distance is measured from the driver's eye at 42 inches above the pavement to an object height of 6 inches above the pavement.

TRAFFIC-ACTUATED SIGNAL: A type of traffic signal that directs traffic to stop and go in accordance with the demands of traffic, as registered by the actuation of detectors.

TRIP: The movement of a person or vehicle from one location (origin) to another (destination). For example, from home to store to home is two trips, not one.

TRIP-END: One end of a trip at either the origin or destination (i.e., each trip has two trip-ends). A trip-end occurs when a person, object, or message is transferred to or from a vehicle.

TRIP GENERATION RATE: The quantity of trips produced and/or attracted by a specific land use stated in terms of units such as per dwelling, per acre, and per 1,000 square feet of floor space.

TRUCK: A vehicle having dual tires on one or more axles, or having more than two axles.

TURNING RADIUS: The circular arc formed by the smallest turning path radius of the front outside tire of a vehicle, such as that performed by a U-turn maneuver. This is based on the length and width of the wheel base as well as the steering mechanism of the vehicle.

UNBALANCED FLOW: Heavier traffic flow in one direction than the other. On a daily basis, most facilities have balanced flow. During the peak hours, flow is seldom balanced in an urban area.

VEHICLE MILES OF TRAVEL: A measure of the amount of usage of a section of highway, obtained by multiplying the average daily traffic by length of facility in miles.

APPENDIX B

SCOPING AGREEMENT

SCOPING AGREEMENT FOR CITY OF ROSEMEAD TRAFFIC IMPACT ANALYSIS

This Memorandum of Understanding acknowledges the City of Rosemead Traffic Impact Analysis requirements for the following project.

Project Name:	Garvey Walnut Mixed Use Project
Project Address/Location:	Northwest corner of Garvey Avenue and Walnut Grove Avenue
Governmental Jurisdiction:	City of Rosemead
Project Description and Land Use:	42 condominium dwelling units, 5,470 square feet of office, 5,520 square feet of community hall, 1,130 square feet of café/food service, 5,274 square feet of retail/service land uses, and ancillary uses including a recreation room, gym, library, and manager's office

	Consultant	Developer
Name:	Bryan Crawford, Senior Transportation Planner	Phil Martin, President
Firm:	Ganddini Group, INC.	PHIL MARTIN & ASSOCIATES
Address:	550 Parkcenter Drive, Suite 202	1809 East Dyer Road, Suite 301
	Santa Ana, CA 92705	Santa Ana, CA 92705
Telephone:	714-795-3100 x 104	949-454-1800
E-mail:	bryan@ganddini.com	pmartin@philmartinassociates.com

Trip Generation Source: Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017.

	Morning		Evening		
	In	Out	In	Out	Daily
Total	73	70	32	33	1,009

Project Full Occupancy Year: 2022

Internal Trip Capture Allowance	Yes	(NCHRP Trip Discount)
Pass-By Trip Allowance	Yes	(34% PM Trip Discount)

Approved by:

Consultant's Representative	10.06.2020 Date	City Rosemead Representative	10/13/2020 Date

19302

Table 1
Project Trip Generation

Trip Generation Rates									
			AM Peak Hour			PM Peak Hour			Daily
Land Use	Source[1]	Unit[2]	% In	% Out	Rate	% In	% Out	Rate	Rate
Multifamily Housing (Mid-Rise)	ITE 221	DU	26%	74%	0.36	61%	39%	0.44	5.44
Recreational Community Center	ITE 495	TSF	66%	34%	1.76	47%	53%	2.31	28.82
General Office	ITE 710	TSF	86%	14%	1.16	16%	84%	1.15	9.74
Shopping Center	ITE 820	TSF	62%	38%	0.94	48%	52%	3.81	37.75
Coffee/Donut Shop without Drive-Through Window	ITE 936	TSF	51%	49%	101.14	50%	50%	36.31	363.1

Trips Generated									
			AM Peak Hour			PM Peak Hour			
Land Use	Quantity	Unit[2]	In	Out	Total	In	Out	Total	Daily
Condominiums	42	DU	4	11	15	11	7	18	228
Internal Capture[3]			0	-2	-2	-5	-2	-7	-9
Community Hall	5.520	TSF	6	3	9	6	7	13	159
Office	5.470	TSF	5	1	6	1	5	6	53
Internal Capture[3]			-1	0	-1	0	-1	-1	-2
Retail	5.274	TSF	3	2	5	10	10	20	199
Internal Capture[3]			0	0	0	-7	-6	-13	-13
Pass-by Trips (34% PM)[4]			0	0	0	-1	-1	-2	-2
Café/Food Service	1.130	TSF	58	56	114	21	21	42	410
Internal Capture[3]			-2	-1	-3	-4	-7	-11	-14
Net New Trips Generated			**73**	**70**	**143**	**32**	**33**	**65**	**1,009**

Notes:

(1) ITE = Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017; ### = Land Use Code

(2) TSF = Thousand Square Feet

(3) Internal Capture calculated using the NCHRP 684 Internal Trip Capture Estimation Tool.

(4) Pass-by rates obtained from ITE Trip Generation Handbook, 3rd Edition, 2017.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Garvey Walnut Mixed Use Project	Organization:	Ganddini Group, Inc.
Project Location:	Rosemead	Performed By:	BA
Scenario Description:	Project	Date:	10/6/2020
Analysis Year:		Checked By:	
Analysis Period:	AM Street Peak Hour	Date:	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				6	5	1
Retail				5	3	2
Restaurant				114	58	56
Cinema/Entertainment				0	0	0
Residential				15	4	11
Hotel				0	0	0
All Other Land Uses[2]				9	6	3
				149	76	73

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	1	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	2	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	149	76	73
Internal Capture Percentage	4%	4%	4%
External Vehicle-Trips[5]	143	73	70
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	20%	0%
Retail	0%	0%
Restaurant	3%	2%
Cinema/Entertainment	N/A	N/A
Residential	0%	18%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Garvey Walnut Mixed Use Project
Analysis Period:	AM Street Peak Hour

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends							
Land Use	Table 7-A (D): Entering Trips				Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*		Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	5	5		1.00	1	1
Retail	1.00	3	3		1.00	2	2
Restaurant	1.00	58	58		1.00	56	56
Cinema/Entertainment	1.00	0	0		1.00	0	0
Residential	1.00	4	4		1.00	11	11
Hotel	1.00	0	0		1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	1	0	0	0
Retail	1		0	0	0	0
Restaurant	17	8		0	2	2
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	2	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1	13	0	0	0
Retail	0		29	0	0	0
Restaurant	1	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	12	0		0
Hotel	0	0	3	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	1	4	5	4	0	0
Retail	0	3	3	3	0	0
Restaurant	2	56	58	56	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	4	4	4	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	6	6	6	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	1	1	1	0	0
Retail	0	2	2	2	0	0
Restaurant	1	55	56	55	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	9	11	9	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	3	3	3	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Garvey Walnut Mixed Use Project	**Organization:**	Ganddini Group, Inc.
Project Location:	Rosemead	**Performed By:**	BA
Scenario Description:	Project	**Date:**	10/6/2020
Analysis Year:		**Checked By:**	
Analysis Period:	PM Street Peak Hour	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				6	1	5
Retail				20	10	10
Restaurant				42	21	21
Cinema/Entertainment				0	0	0
Residential				18	11	7
Hotel				0	0	0
All Other Land Uses[2]				13	6	7
				99	49	50

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1	0	0	0	0
Retail	0		3	0	3	0
Restaurant	0	5		0	2	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	1	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	99	49	50
Internal Capture Percentage	32%	33%	32%
External Vehicle-Trips[5]	67	33	34
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	0%	20%
Retail	70%	60%
Restaurant	19%	33%
Cinema/Entertainment	N/A	N/A
Residential	45%	29%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Garvey Walnut Mixed Use Project
Analysis Period:	PM Street Peak Hour

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	1	1	1.00	5	5
Retail	1.00	10	10	1.00	10	10
Restaurant	1.00	21	21	1.00	21	21
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	11	11	1.00	7	7
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1	0	0	0	0
Retail	0		3	0	3	1
Restaurant	1	9		2	4	1
Cinema/Entertainment	0	0	0		0	0
Residential	0	3	1	0		0
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		1	0	0	0	0
Retail	0		6	0	5	0
Restaurant	0	5		0	2	0
Cinema/Entertainment	0	0	1		0	0
Residential	1	1	3	0		0
Hotel	0	0	1	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	1	1	1	0	0
Retail	7	3	10	3	0	0
Restaurant	4	17	21	17	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	5	6	11	6	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	6	6	6	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	1	4	5	4	0	0
Retail	6	4	10	4	0	0
Restaurant	7	14	21	14	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	5	7	5	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	7	7	7	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Table 7.1a Adjusted Internal Trip Capture Rates for Trip Origins within a Multi-Use Development			
Land Use Pairs		Weekday	
		AM Peak Hour	PM Peak Hour
From OFFICE	To Office	0.0%	0.0%
	To Retail	28.0%	20.0%
	To Restaurant	63.0%	4.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	1.0%	2.0%
	To Hotel	0.0%	0.0%
From RETAIL	To Office	29.0%	2.0%
	To Retail	0.0%	0.0%
	To Restaurant	13.0%	29.0%
	To Cinema/Entertainment	0.0%	4.0%
	To Residential	14.0%	26.0%
	To Hotel	0.0%	5.0%
From RESTAURANT	To Office	31.0%	3.0%
	To Retail	14.0%	41.0%
	To Restaurant	0.0%	0.0%
	To Cinema/Entertainment	0.0%	8.0%
	To Residential	4.0%	18.0%
	To Hotel	3.0%	7.0%
From CINEMA/ENTERTAINMENT	To Office	0.0%	2.0%
	To Retail	0.0%	21.0%
	To Restaurant	0.0%	31.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	8.0%
	To Hotel	0.0%	2.0%
From RESIDENTIAL	To Office	2.0%	4.0%
	To Retail	1.0%	42.0%
	To Restaurant	20.0%	21.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	0.0%
	To Hotel	0.0%	3.0%
From HOTEL	To Office	75.0%	0.0%
	To Retail	14.0%	16.0%
	To Restaurant	9.0%	68.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	2.0%
	To Hotel	0.0%	0.0%

Table 7.2a Adjusted Internal Trip Capture Rates for Trip Destinations within a Multi-Use Development			
Land Use Pairs		Weekday	
		AM Peak Hour	PM Peak Hour
To OFFICE	From Office	0.0%	0.0%
	From Retail	4.0%	31.0%
	From Restaurant	14.0%	30.0%
	From Cinema/Entertainment	0.0%	6.0%
	From Residential	3.0%	57.0%
	From Hotel	3.0%	0.0%
To RETAIL	From Office	32.0%	8.0%
	From Retail	0.0%	0.0%
	From Restaurant	8.0%	50.0%
	From Cinema/Entertainment	0.0%	4.0%
	From Residential	17.0%	10.0%
	From Hotel	4.0%	2.0%
To RESTAURANT	From Office	23.0%	2.0%
	From Retail	50.0%	29.0%
	From Restaurant	0.0%	0.0%
	From Cinema/Entertainment	0.0%	3.0%
	From Residential	20.0%	14.0%
	From Hotel	6.0%	5.0%
To CINEMA/ENTERTAINMENT	From Office	0.0%	1.0%
	From Retail	0.0%	26.0%
	From Restaurant	0.0%	32.0%
	From Cinema/Entertainment	0.0%	0.0%
	From Residential	0.0%	0.0%
	From Hotel	0.0%	0.0%
To RESIDENTIAL	From Office	0.0%	4.0%
	From Retail	2.0%	46.0%
	From Restaurant	5.0%	16.0%
	From Cinema/Entertainment	0.0%	4.0%
	From Residential	0.0%	0.0%
	From Hotel	0.0%	0.0%
To HOTEL	From Office	0.0%	0.0%
	From Retail	0.0%	17.0%
	From Restaurant	4.0%	71.0%
	From Cinema/Entertainment	0.0%	1.0%
	From Residential	0.0%	12.0%
	From Hotel	0.0%	0.0%

Legend

(#) Study Intersection

Figure 1
Project Location Map

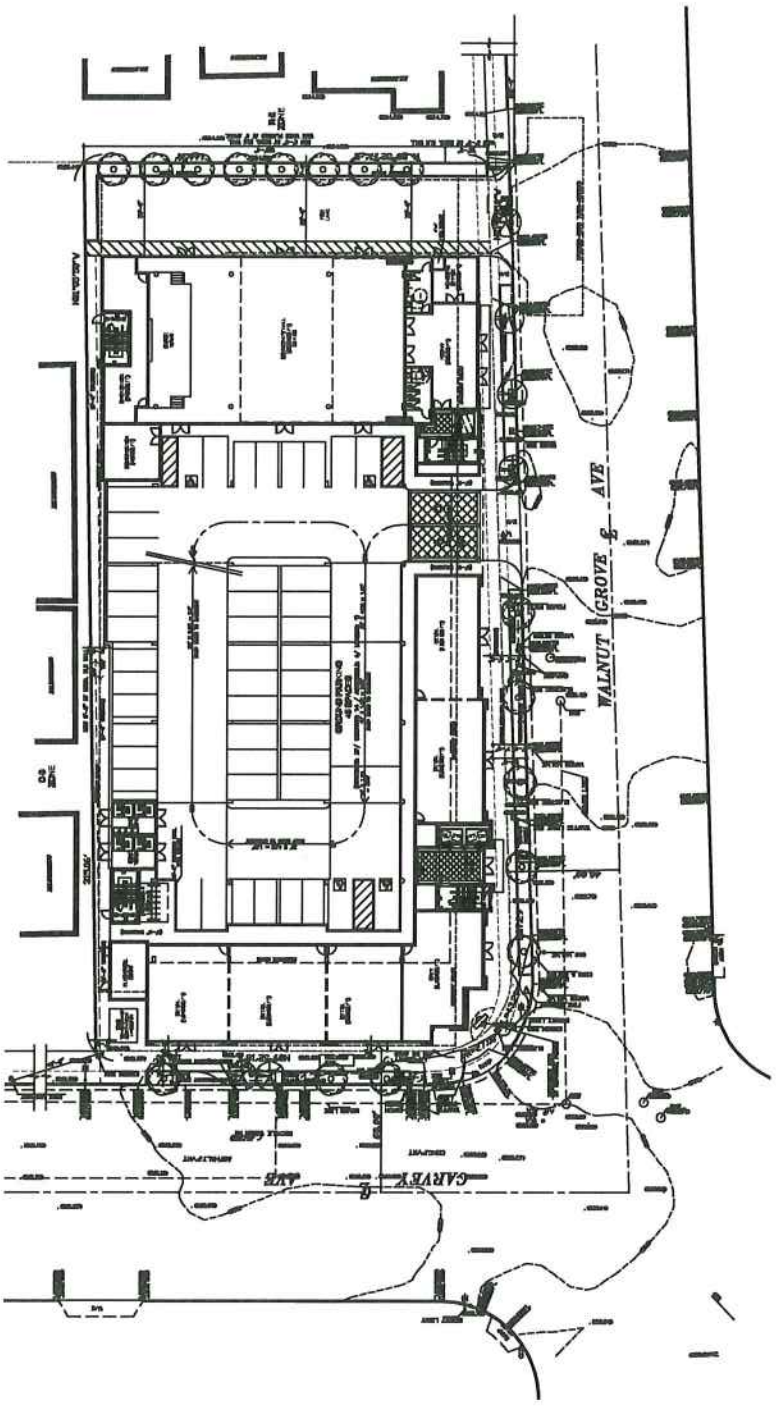


Figure 2
Site Plan

Legend

10% Percent From Project

Figure 3
Project Outbound Trip Distributon - Residential

Figure 4
Project Inbound Trip Distributon - Residential

Legend

10% Percent From Project

Figure 5
Project Outbound Trip Distributon - Office

Legend

10% Percent To Project

Figure 6
Project Inbound Trip Distributon - Office

Legend

10% Percent From Project

Figure 7
Project Outbound Trip Distributon - Hotel/Restaurant

Figure 8
Project Inbound Trip Distributon - Retail/Restaurant

Date: October 12, 2020

To:	Annie Lao Associate Planner alao@cityofrosemead.org Office: (626) 569-2144	Pages:	3
From:	Jana Robbins, PTP, RSP jana.robbins@transtech.org; T: 909-595-8599, 133	Job #:	Jn#20967
Re:	Traffic Scoping for the Proposed Mixed Use Development to be Located at the NW Corner of Walnut Grove Avenue and Garvey Avenue in the City of Rosemead	Cc:	Lily Valenzuela: Planning and Economic Dev Manager Chris Daste: PW Director Angelica Frausto-Lupo: CDD Dir Michael Ackerman: City Engineer

Transtech Engineers has completed a review of the preliminary Traffic Scoping that was submitted to the City by the applicants Traffic Consultant Ganddini Group, Inc with Mr. Bryan Crawford. The proposed project as we understand will be comprised of the following:

- 42 Condo Units
- 5,470 sqf of Office
- 5,520 sqf of Community Hall
- 1,130 sqf of Café/Food Service
- 5,274 sqf of Retail/Service
- Ancillary uses such as a recreation room, gym, library and managers office for the condo units

The project is projected to generate, after taking allowances for internal trips and pass-by allowances for the retail use, 1,009 daily trips with 143 trips in the AM peak and 65 trips in the PM Peak.

The City of Rosemead in July 2020 adopted VMT thresholds to be in line with State mandates for SB 743 using Vehicle Miles Travelled (VMT) as the matrix to determine traffic impacts under CEQA. However, the City also chose to continue using LOS for transportation planning and analysis purposes. There are three ways a project can be screened from providing a project level VMT assessment. One: The project is located in a Transit Priority Area (TPA); two can be considered as located in a LOW VMT Area; or three a Project Type Screening where, based on OPR guidelines, certain types of projects have been identified as having the presumption of a less than significant VMT impact. The SGVCOG's traffic consultant Fehr and Peers is in the process of finalizing the Traffic Study Guidelines for the City of Rosemead. As part of these guidelines a screening tool will be available for applicants to use to see if their project can be screened. Until the City gets the final TIA guidelines, the City ran the project through the Screening Tool and found that this project is eligible for screening from a full VMT analysis based on being located in a LOW VMT Area. The output is provided for your review as an attachment. However, the project will still need to

provide a traffic study as well as provide justification that the project is consistent with existing land use and that there is nothing unique that would otherwise preclude the project from being screened.

The following should be included in the Traffic Analysis for this project:

1. **Existing Traffic Counts** should be taken on a weekday during AM and PM peak hours. Depending on the description and types of events to be held at the Community Center additional counts may need to be taken either in the evening or on a weekend. Due to Covid, traffic has been lighter with schools not doing in-person classes and more people working at home. If no Historical counts are available from the City then new counts will need to be taken with a growth factor applied to account for these conditions. (recent counts show that there has been on average a 30% reduction in AM peak and 20% reduction in PM peak travel due to Covid). Consultant should submit to the City the factors and method they will be using for counts for this project. The following intersections should be included:
   a. Walnut Grove Avenue at Garvey Avenue
   b. Walnut Grove Avenue at Hellman Avenue
   c. I-10 EB Ramp at Hellman Avenue
   d. Proposed Driveway (for trip generation, and queuing)

   The Circulation Element of the City's General Plan has established maintaining level of service D or better at intersections. The City uses the Intersection Capacity Utilization (ICU) methodology to evaluate AM and PM peak hour LOS at signalized intersections. The following parameters should be used in determining the LOS at the intersections within the City. (note that lane capacities have changed from previous ICU standards)

   ICU Methodology (signalized intersections)

   - A minimum clearance interval of 0.10 of green time.
   - Lane capacities of 1,800 per hour per lane for through and turn lanes.
   - Lane capacities of 3,240 per hour for dual turn lanes

2. Trip Generation of Project Traffic using the 10th Edition Trip Generation Manual. The report should include justification for any internal capture and pass-by credits. Credits taken for existing use must demonstrate that the existing use is open and occupied.
3. Trip Distribution of Project Traffic (project trips and percent assignment)
4. Analysis Scenarios:
   a. Existing Conditions
   b. Existing Plus Project
   c. Opening Year (existing + growth factor + cumulative projects within 1 to 1.5 miles of project)
   d. Opening Year + Project
5. On-Site Parking and Circulation (parking per code versus supply and the locations dedicated to retail versus residential spaces)
6. Description of the project in general
7. Description of the Community Hall to include
   i. Types of uses/events

ii. Occupancy levels
iii. Typical days and hours will be utilizing for events – this may require a separate analysis at the driveway and the intersection of Walnut Grove Avenue and Garvey Avenue
iv. Parking on event days (number of spaces needed and circulation at driveway)

8. Access and Circulation at Project Driveway. If applicant is proposing full access than it must be demonstrated that striping and lane widths on Walnut Grove Avenue can accommodate full movements in and out as well as sufficient space from main signal.
9. Queue analysis for NB left entering the driveway and the relationship between the SB left turn pocket at Walnut Grove Avenue and Garvey Avenue.
10. On-site stacking for vehicles leaving the site
11. Truck access to loading/unloading and trash pickup – Truck Turning Templates into, on and out of site driveway.
12. Construction discussion – staging and hours
13. Justification for screening from a full VMT analysis

We look forward to working with the applicant on this project. If there are questions or comments please contact me at jana.robbins@transtech.org

APPENDIX C

VOLUME COUNT WORKSHEETS

Modified Traffic Counts to Convert Existing Traffic Counts to Pre Pandemic Conditions

AM Peak Hour Growth Rate to Convert Existing Traffic Counts to Pre Pandemic Conditions:	91.91%
PM Peak Hour Growth Rate to Convert Existing Traffic Counts to Pre Pandemic Conditions:	33.96%

I-10 EB Ramps (NS) at Hellman Avenue (EW)

Existing 2020 Traffic Count (Pandemic Conditions)												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
0	0	0	132	0	7	60	80	0	0	83	99	461
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
0	0	0	188	0	13	35	165	0	0	151	97	649

Modified 2020 Traffic Count												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
0	0	0	253	0	13	115	154	0	0	159	190	884
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
0	0	0	252	0	17	47	221	0	0	202	130	869

Walnut Grove Avenue (NS) at Hellman Avenue (EW)

Existing 2020 Traffic Count (Pandemic Conditions)												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
76	245	7	66	301	60	121	31	60	0	45	140	1,152
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
93	482	14	124	522	113	213	76	64	8	43	141	1,893

Modified 2020 Traffic Count												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
146	470	13	127	578	115	232	59	115	0	86	269	2,210
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
125	646	19	166	699	151	285	102	86	11	58	189	2,537

Walnut Grove Avenue (NS) at Garvey Avenue (EW)

Existing 2020 Traffic Count (Pandemic Conditions)												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
53	181	72	128	222	55	59	426	36	53	421	70	1,776
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
87	383	123	119	377	80	105	679	76	109	687	147	2,972

Modified 2020 Traffic Count												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
102	347	138	246	426	106	113	818	69	102	808	134	3,409
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
117	513	165	159	505	107	141	910	102	146	920	197	3,982

Pandemic Factorization Calculation Summary

Modified Historical Traffic Count			
Peak Hour Total Turning Movement Volumes	Intersection		Total
	Walnut Grove Ave at Hellman Ave	Walnut Grove Ave at Garvey Ave	
AM	2,296	3,323	5,619
PM	2,734	3,783	6,517

Existing Traffic Count (Pandemic Conditions)			
Peak Hour Total Turning Movement Volumes	Intersection		Total
	Walnut Grove Ave at Hellman Ave	Walnut Grove Ave at Garvey Ave	
AM	1,152	1,776	2,928
PM	1,893	2,972	4,865

AM Peak Hour Growth Rate to Factor Modified Historical Traffic Count and Existing Traffic Count (Pandemic Conditions) to 2020 Pre-Pandemic Conditions:	91.91%
PM Peak Hour Growth Rate to Factor Modified Historical Traffic Count and Existing Traffic Count (Pandemic Conditions) to 2020 Pre-Pandemic Conditions:	33.96%

Walnut Grove Ave (NS) at Hellman Ave (EW)

Modified Traffic Count

Historical Traffic Count[1]												
2018												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
136	516	13	60	654	101	143	58	115	1	247	216	2,260
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
127	880	13	160	669	127	287	71	79	7	33	237	2,690

Annual Ambient Growth Rate:	0.800%

Modified Historical Traffic Count												
2020												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
138	524	13	61	665	103	145	59	117	1	251	219	2,296
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
129	894	13	163	680	129	292	72	80	7	34	241	2,734

Notes:
(1) Provided by City of Rosemead Staff.

Existing Traffic Count (Pandemic Conditions)												
2020												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
76	245	7	66	301	60	121	31	60	0	45	140	1,152
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
93	482	14	124	522	113	213	76	64	8	43	141	1,893

AM Peak Hour Growth Rate to Factor Modified Historical Traffic Count and Existing Traffic Count (Pandemic Conditions) to 2020 Pre-Pandemic Conditions:	99.31%
PM Peak Hour Growth Rate to Factor Modified Historical Traffic Count and Existing Traffic Count (Pandemic Conditions) to 2020 Pre-Pandemic Conditions:	44.43%

Walnut Grove Ave (NS) at Garvey Ave (EW)

Modified Traffic Count

Historical Traffic Count[1]												
2018												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
124	377	102	196	592	102	90	682	83	130	676	116	3,270
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
122	727	128	154	462	98	135	743	78	136	766	175	3,724

Annual Ambient Growth Rate:	0.800%

Modified Historical Traffic Count												
2020												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
126	383	104	199	602	104	91	693	84	132	687	118	3,323
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
124	739	130	156	469	100	137	755	79	138	778	178	3,783

Notes:
(1) Provided by City of Rosemead Staff.

Existing Traffic Count (Pandemic Conditions)												
2020												
AM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
53	181	72	128	222	55	59	426	36	53	421	70	1,776
PM Peak Hour												
Northbound			Southbound			Eastbound			Westbound			
Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Total
87	383	123	119	377	80	105	679	76	109	687	147	2,972

AM Peak Hour Growth Rate to Factor Modified Historical Traffic Count and Existing Traffic Count (Pandemic Conditions) to 2020 Pre-Pandemic Conditions:	87.11%
PM Peak Hour Growth Rate to Factor Modified Historical Traffic Count and Existing Traffic Count (Pandemic Conditions) to 2020 Pre-Pandemic Conditions:	27.29%

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Rosemead	PROJECT #:	SC2702
Wed, Oct 21, 20	NORTH & SOUTH:	I-10 EB Ramps	LOCATION #:	3
	EAST & WEST:	Hellman	CONTROL:	SIGNAL

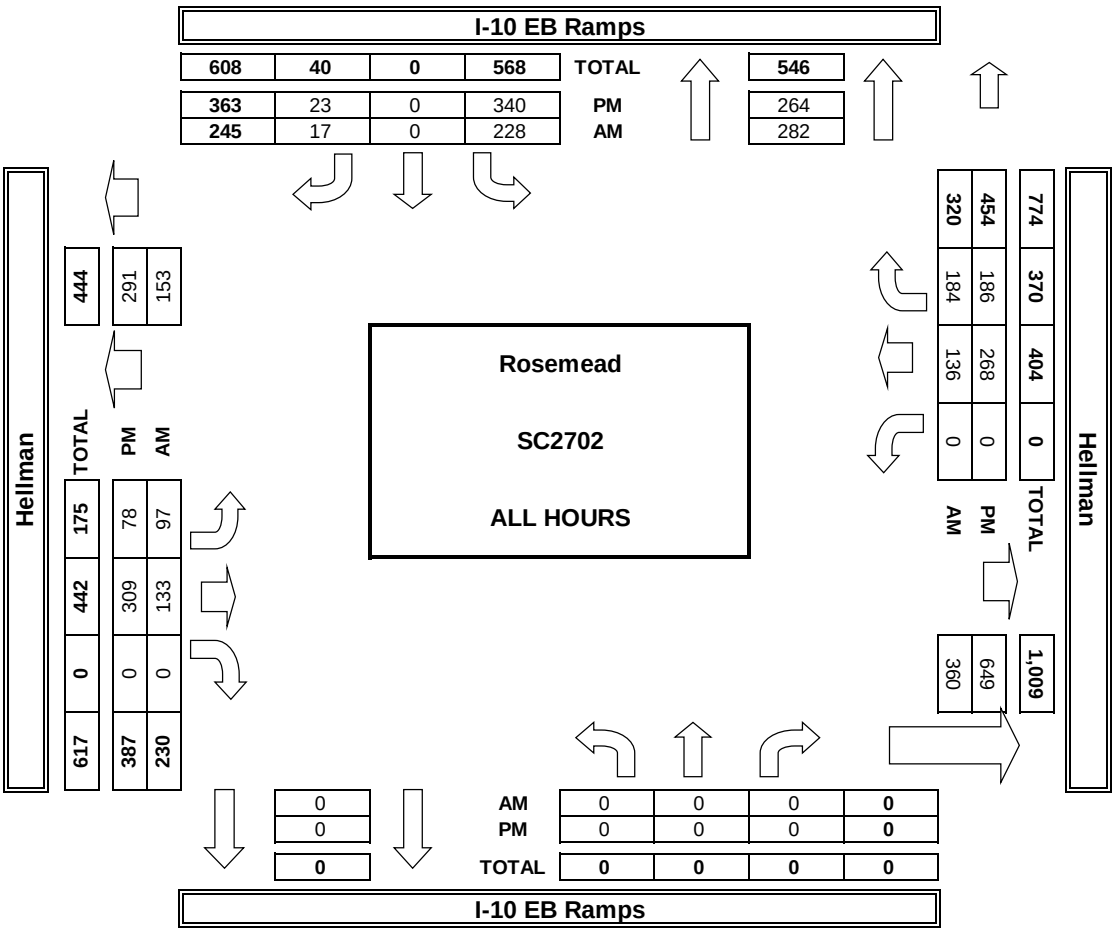
NOTES:

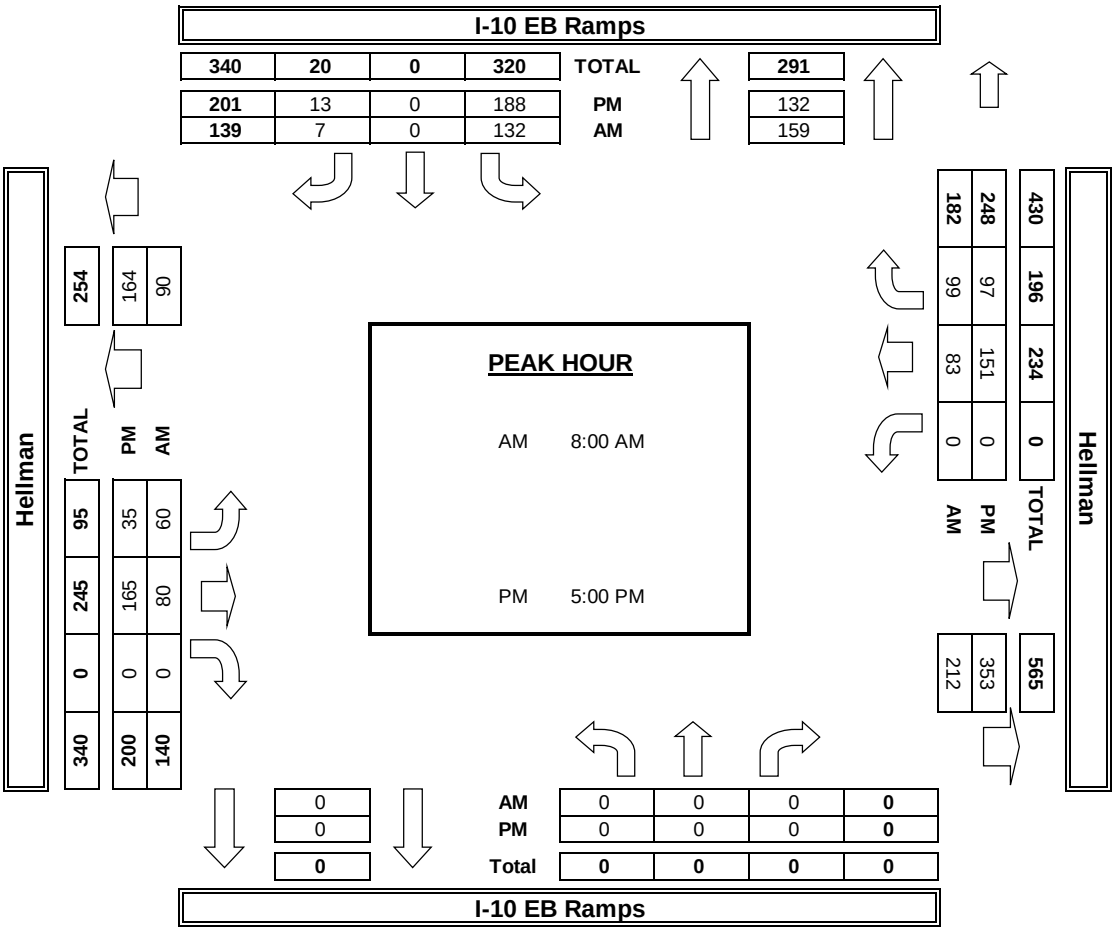
AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

		NORTHBOUND I-10 EB Ramps			SOUTHBOUND I-10 EB Ramps			EASTBOUND Hellman			WESTBOUND Hellman			
	LANES:	NL X	NT X	NR X	SL 0.5	ST X	SR 0.5	EL 0	ET 1	ER X	WL X	WT 1	WR 0	TOTAL
AM	7:00 AM	0	0	0	21	0	4	6	10	0	0	5	20	66
	7:15 AM	0	0	0	28	0	2	6	10	0	0	11	14	71
	7:30 AM	0	0	0	19	0	2	12	10	0	0	17	24	84
	7:45 AM	0	0	0	28	0	2	13	23	0	0	20	27	113
	8:00 AM	0	0	0	33	0	0	12	22	0	0	19	21	107
	8:15 AM	0	0	0	34	0	1	18	20	0	0	18	26	117
	8:30 AM	0	0	0	28	0	2	15	15	0	0	26	31	117
	8:45 AM	0	0	0	37	0	4	15	23	0	0	20	21	120
	VOLUMES	0	0	0	228	0	17	97	133	0	0	136	184	795
	APPROACH %	0%	0%	0%	93%	0%	7%	42%	58%	0%	0%	43%	58%	
	APP/DEPART	0	/	282	245	/	0	230	/	360	320	/	153	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	0	0	132	0	7	60	80	0	0	83	99	461
	APPROACH %	0%	0%	0%	95%	0%	5%	43%	57%	0%	0%	46%	54%	
	PEAK HR FACTOR		0.000			0.848			0.921			0.798		0.960
	APP/DEPART	0	/	159	139	/	0	140	/	212	182	/	90	0
PM	4:00 PM	0	0	0	44	0	0	11	40	0	0	25	18	138
	4:15 PM	0	0	0	37	0	1	10	40	0	0	43	28	159
	4:30 PM	0	0	0	40	0	4	9	30	0	0	25	20	128
	4:45 PM	0	0	0	31	0	5	13	34	0	0	24	23	130
	5:00 PM	0	0	0	35	0	5	16	45	0	0	27	30	158
	5:15 PM	0	0	0	50	0	1	7	45	0	0	43	20	166
	5:30 PM	0	0	0	49	0	3	7	44	0	0	38	25	166
	5:45 PM	0	0	0	54	0	4	5	31	0	0	43	22	159
	VOLUMES	0	0	0	340	0	23	78	309	0	0	268	186	1,204
	APPROACH %	0%	0%	0%	94%	0%	6%	20%	80%	0%	0%	59%	41%	
	APP/DEPART	0	/	264	363	/	0	387	/	649	454	/	291	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	0	0	0	188	0	13	35	165	0	0	151	97	649
	APPROACH %	0%	0%	0%	94%	0%	6%	18%	83%	0%	0%	61%	39%	
	PEAK HR FACTOR		0.000			0.866			0.820			0.954		0.977
	APP/DEPART	0	/	132	201	/	0	200	/	353	248	/	164	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Rosemead	PROJECT #:	SC2702
Wed, Oct 21, 20	NORTH & SOUTH:	Walnut Grove	LOCATION #:	2
	EAST & WEST:	Hellman	CONTROL:	SIGNAL

NOTES:

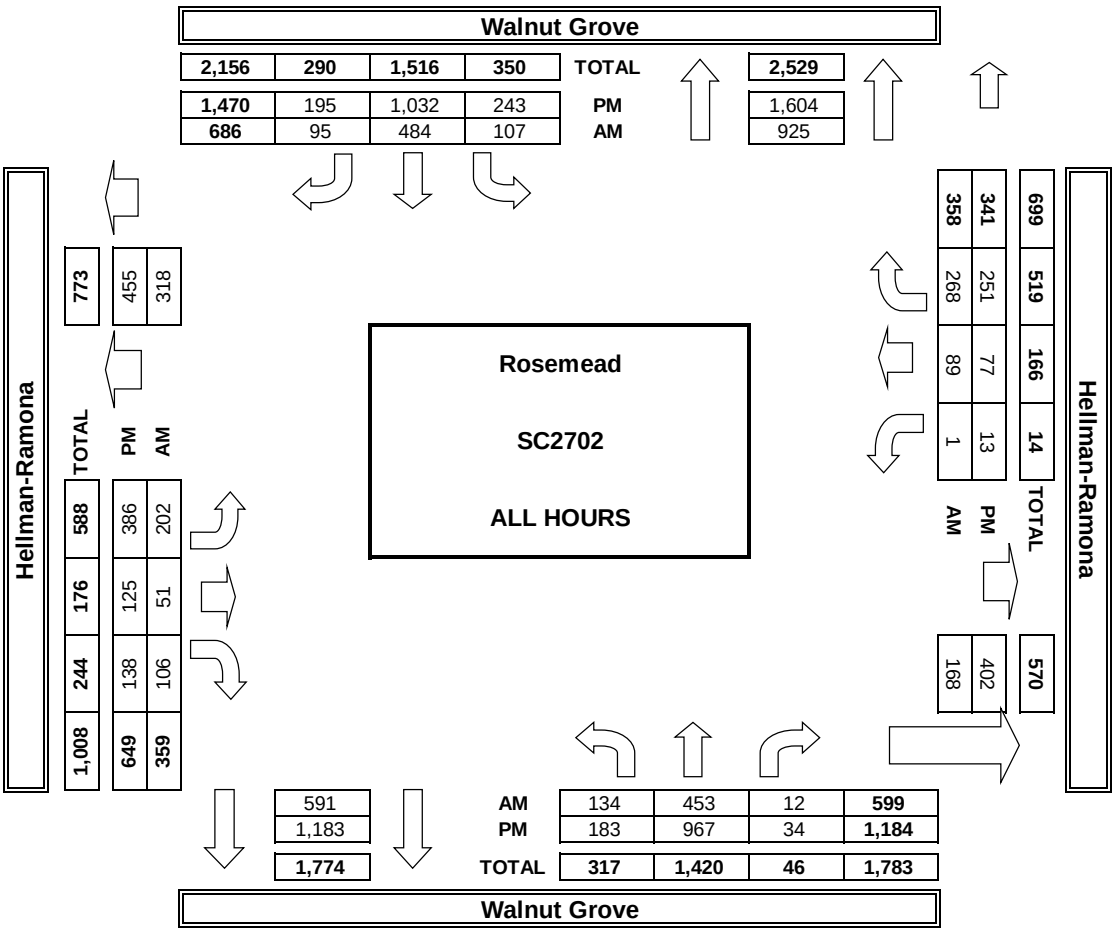
AM / PM / MD / OTHER / OTHER

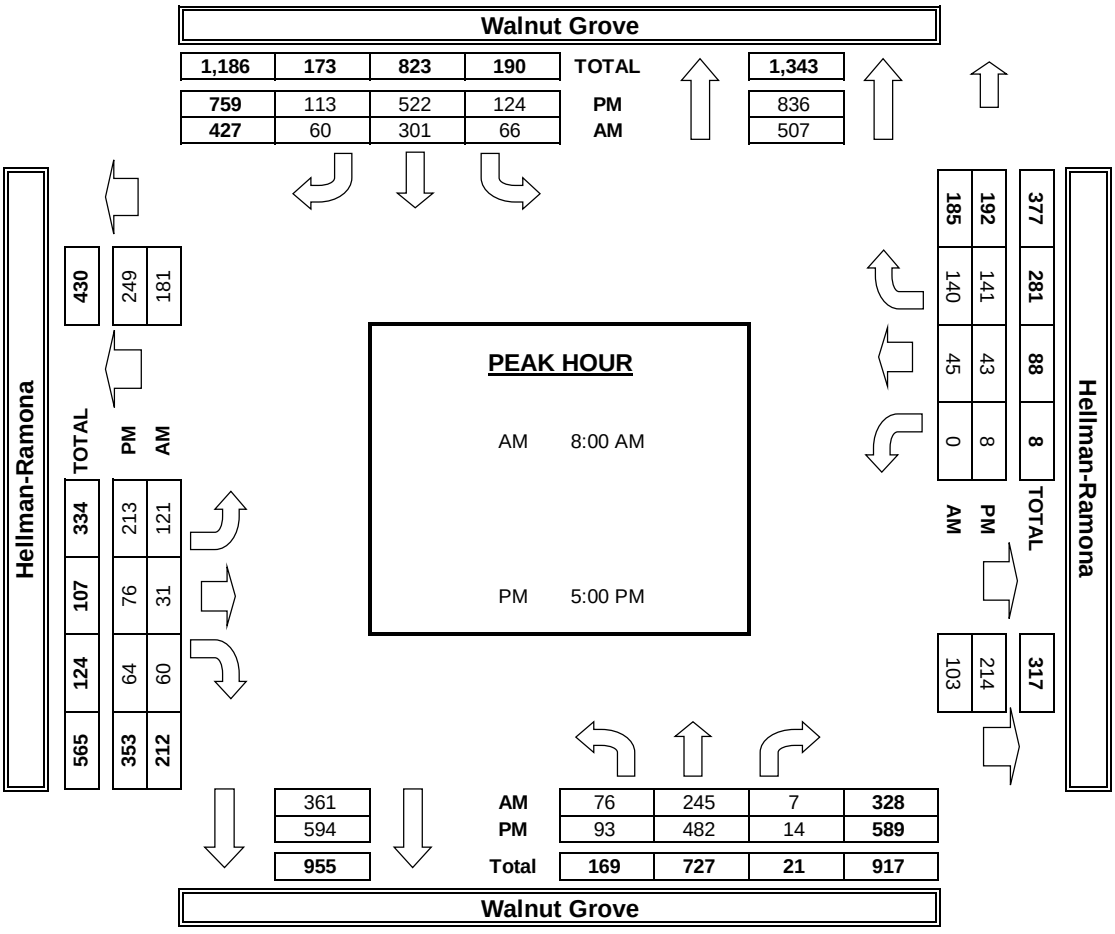
▲ N ◄ W E ► S ▼

		NORTHBOUND Walnut Grove			SOUTHBOUND Walnut Grove			EASTBOUND Hellman-Ramona			WESTBOUND Hellman-Ramona			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 0.5	ET 0.5	ER 1	WL 0.5	WT 0.5	WR 1	TOTAL
AM	7:00 AM	13	48	3	10	39	4	14	10	7	0	8	27	183
	7:15 AM	9	40	0	7	33	6	18	4	14	0	11	29	171
	7:30 AM	15	58	0	12	51	10	18	0	9	1	15	32	221
	7:45 AM	21	62	2	12	60	15	31	6	16	0	10	40	275
	8:00 AM	16	51	0	19	77	17	31	6	18	0	7	27	269
	8:15 AM	19	57	3	12	74	11	32	6	15	0	14	32	275
	8:30 AM	25	78	3	22	76	19	23	5	15	0	13	28	307
	8:45 AM	16	59	1	13	74	13	35	14	12	0	11	53	301
	VOLUMES	134	453	12	107	484	95	202	51	106	1	89	268	2,002
	APPROACH %	22%	76%	2%	16%	71%	14%	56%	14%	30%	0%	25%	75%	
	APP/DEPART	599	/	925	686	/	591	359	/	168	358	/	318	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	76	245	7	66	301	60	121	31	60	0	45	140	1,152
	APPROACH %	23%	75%	2%	15%	70%	14%	57%	15%	28%	0%	24%	76%	
	PEAK HR FACTOR		0.774			0.912			0.869			0.723		0.938
	APP/DEPART	328	/	507	427	/	361	212	/	103	185	/	181	0
PM	4:00 PM	23	124	7	22	120	13	45	12	28	0	7	27	428
	4:15 PM	27	110	5	27	131	29	40	12	25	1	16	31	454
	4:30 PM	16	144	5	33	139	20	47	13	9	2	8	27	463
	4:45 PM	24	107	3	37	120	20	41	12	12	2	3	25	406
	5:00 PM	23	111	4	39	124	23	51	16	13	2	13	38	457
	5:15 PM	23	135	7	23	114	28	52	24	19	1	11	26	463
	5:30 PM	20	111	2	27	140	29	55	23	16	3	14	42	482
	5:45 PM	27	125	1	35	144	33	55	13	16	2	5	35	491
	VOLUMES	183	967	34	243	1,032	195	386	125	138	13	77	251	3,644
	APPROACH %	15%	82%	3%	17%	70%	13%	59%	19%	21%	4%	23%	74%	
	APP/DEPART	1,184	/	1,604	1,470	/	1,183	649	/	402	341	/	455	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	93	482	14	124	522	113	213	76	64	8	43	141	1,893
	APPROACH %	16%	82%	2%	16%	69%	15%	60%	22%	18%	4%	22%	73%	
	PEAK HR FACTOR		0.892			0.895			0.929			0.814		0.964
	APP/DEPART	589	/	836	759	/	594	353	/	214	192	/	249	0

AimTD LLC

TURNING MOVEMENT COUNTS





INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:				
Wed, Oct 21, 20	LOCATION:	Rosemead	PROJECT #:	SC2702
	NORTH & SOUTH:	Walnut Grove	LOCATION #:	1
	EAST & WEST:	Garvey	CONTROL:	SIGNAL

NOTES:

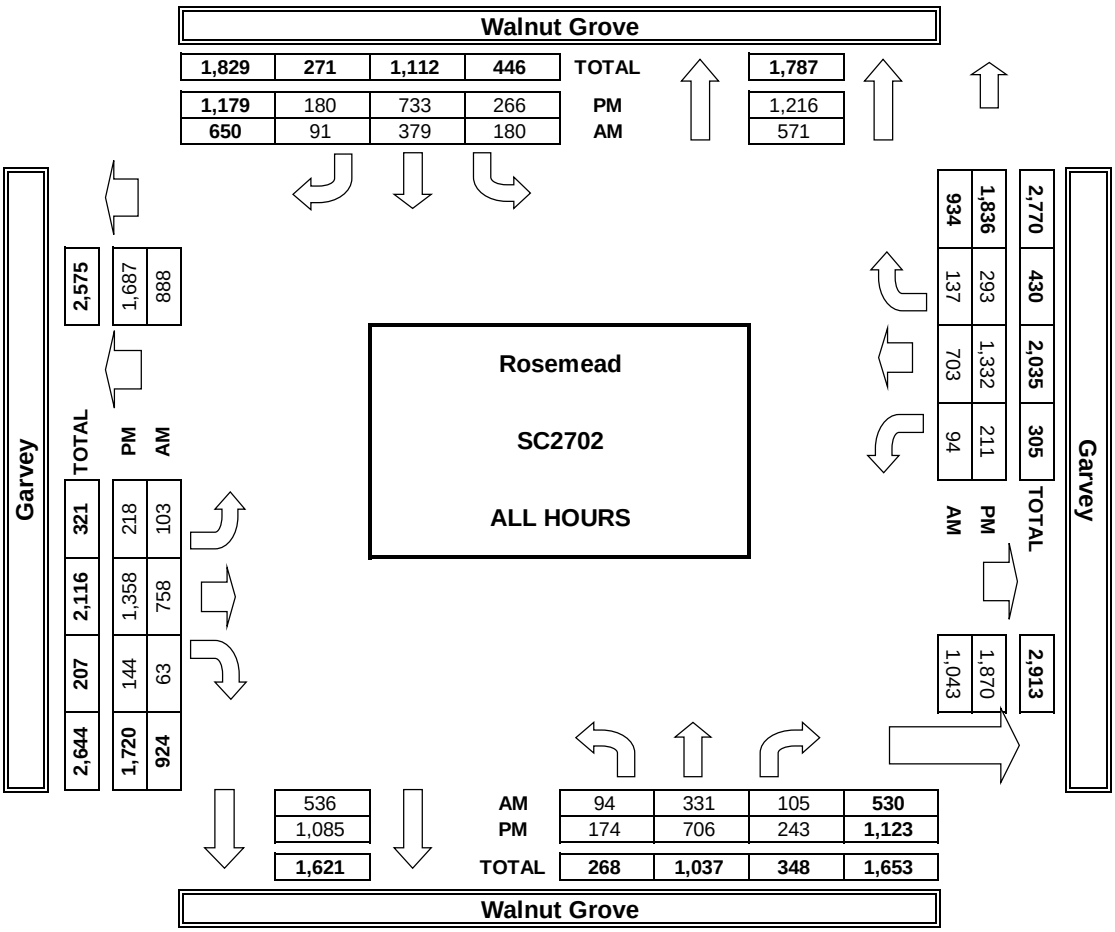
AM / PM / MD / OTHER / OTHER

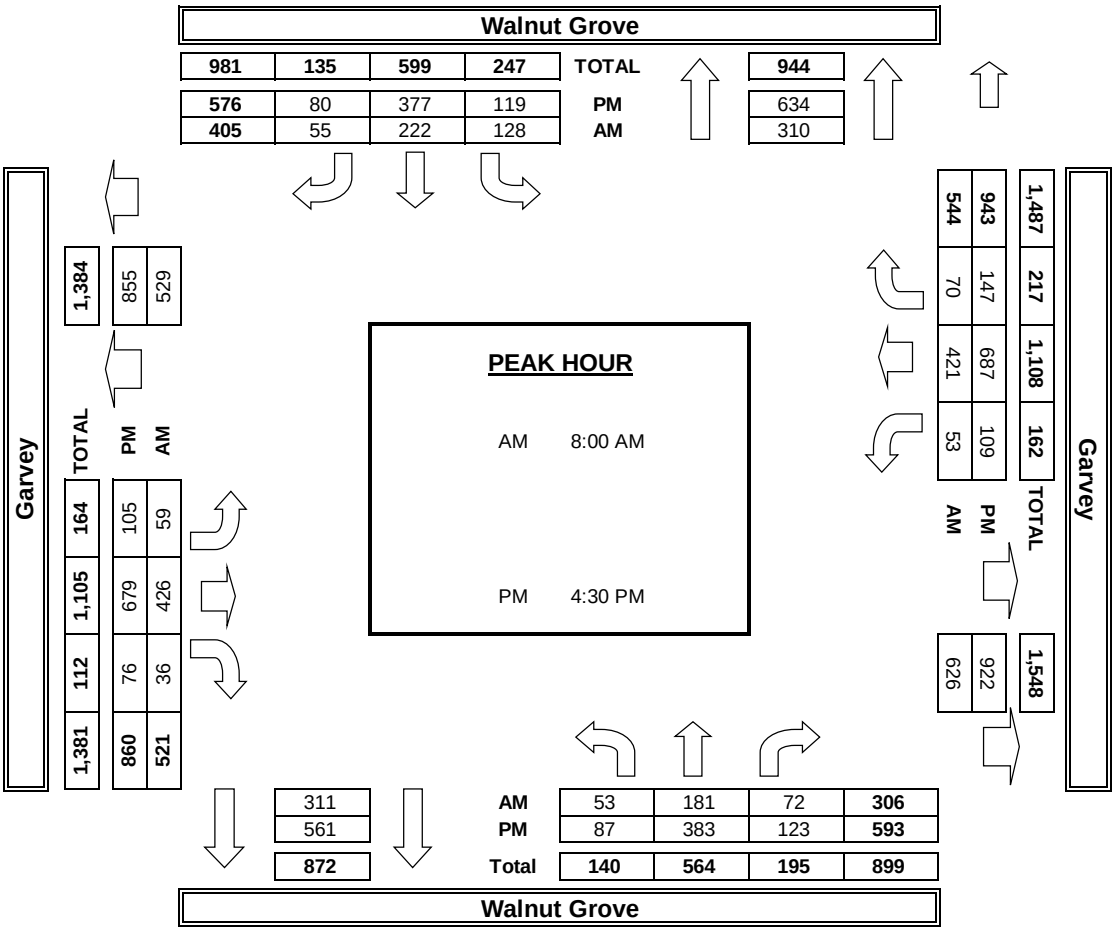
▲ N ◄ W E ► S ▼

		NORTHBOUND Walnut Grove			SOUTHBOUND Walnut Grove			EASTBOUND Garvey			WESTBOUND Garvey			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	6	42	6	7	43	5	7	52	10	6	51	18	253
	7:15 AM	9	28	9	8	26	11	7	80	3	8	73	17	279
	7:30 AM	12	44	7	20	47	10	16	94	6	10	70	13	349
	7:45 AM	14	36	11	17	41	10	14	106	8	17	88	19	381
	8:00 AM	20	47	15	35	64	11	10	99	7	10	74	8	400
	8:15 AM	9	42	17	29	60	13	11	117	8	18	110	17	451
	8:30 AM	11	54	23	34	42	14	21	95	8	10	116	21	449
	8:45 AM	13	38	17	30	56	17	17	115	13	15	121	24	476
	VOLUMES	94	331	105	180	379	91	103	758	63	94	703	137	3,038
	APPROACH %	18%	62%	20%	28%	58%	14%	11%	82%	7%	10%	75%	15%	
	APP/DEPART	530	/	571	650	/	536	924	/	1,043	934	/	888	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	53	181	72	128	222	55	59	426	36	53	421	70	1,776
	APPROACH %	17%	59%	24%	32%	55%	14%	11%	82%	7%	10%	77%	13%	
	PEAK HR FACTOR		0.869			0.920			0.898			0.850		0.933
	APP/DEPART	306	/	310	405	/	311	521	/	626	544	/	529	0
PM	4:00 PM	26	77	30	37	80	27	35	178	16	20	175	39	740
	4:15 PM	21	78	30	40	86	23	25	187	17	37	131	28	703
	4:30 PM	16	114	34	27	106	14	24	161	16	29	167	41	749
	4:45 PM	17	77	25	25	101	18	19	159	24	23	179	32	699
	5:00 PM	30	96	32	26	81	24	35	185	20	22	170	41	762
	5:15 PM	24	96	32	41	89	24	27	174	16	35	171	33	762
	5:30 PM	21	76	39	34	100	22	22	160	14	26	177	43	734
	5:45 PM	19	92	21	36	90	28	31	154	21	19	162	36	709
	VOLUMES	174	706	243	266	733	180	218	1,358	144	211	1,332	293	5,858
	APPROACH %	15%	63%	22%	23%	62%	15%	13%	79%	8%	11%	73%	16%	
	APP/DEPART	1,123	/	1,216	1,179	/	1,085	1,720	/	1,870	1,836	/	1,687	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	87	383	123	119	377	80	105	679	76	109	687	147	2,972
	APPROACH %	15%	65%	21%	21%	65%	14%	12%	79%	9%	12%	73%	16%	
	PEAK HR FACTOR		0.904			0.935			0.896			0.986		0.975
	APP/DEPART	593	/	634	576	/	561	860	/	922	943	/	855	0

AimTD LLC

TURNING MOVEMENT COUNTS





AM PEAK COUNT

TURNING MOVEMENT COUNT

PROJECT NAME: CITY OF ROSEMEAD TRAFFIC ANALYSIS
PROJECT NO: 18480
DATE: 26-Sep-18

PASSENGER CARS

N-S STREET: WALNUT GROVE AVE E-W STREET: HELLMAN AVE

TIME	NORTH BOUND			SOUTH BOUND			N-S	EAST BOUND			WEST BOUND			E-W	ADULT PED COUNT			
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	TOTAL	NL	SL	EL	WL
07:00-07:15	18	52	1	11	72	15	169	16	7	25		18	31	97				1
07:15-07:30	16	91	1	12	93	6	219	26	4	14	1	10	50	105				
07:30-07:45	32	115	2	8	114	18	289	32	10	24	1	202	74	343				
07:45-08:00	36	156	2	17	160	27	398	39	7	33		20	58	157		2		
08:00-08:15	30	123	1	21	195	23	393	39	15	33		13	40	140		2	2	1
08:15-08:30	36	119	8	14	183	32	392	33	26	25		12	44	140				1
08:30-08:45	28	99	4	15	188	24	358	47	23	21	1	14	51	157				
08:45-09:00	33	102	3	22	177	25	362	46	12	31	1	19	45	154				

3+ AXLE TRUCKS

SCHOOL AGE PED COUNT

															NL	SL	EL	WL
07:00-07:15	1				1		2							0				
07:15-07:30							0							0		1		
07:30-07:45							0							0				
07:45-08:00							0							0				
08:00-08:15	2	1			1	1	5							0				
08:15-08:30							0							0				
08:30-08:45		1			1		2							0				
08:45-09:00		1					1							0				

BIKE COUNT

															NL	SL	EL	WL
07:00-07:15							0							0	1			
07:15-07:30							0							0	1			
07:30-07:45							0							0		1		1
07:45-08:00							0							0		2		3
08:00-08:15							0							0				2
08:15-08:30							0							0			5	
08:30-08:45							0							0				
08:45-09:00							0							0				

1

PEAK-HOUR VOLUME ANALYSIS

CALCULATED PEAK HOUR VOLUMES-AM

100 652 60 (SR ST SL)

143 EL — WR 216
58 ET — WT 247
115 ER — WL 1

07:30-08:30 CARS

NL NT NR: 134 513 13

ADJUSTED PEAK HOUR VOLUMES- TOTAL PCE AM

102 656 60 (SR ST SL)

143 EL — WR 216
58 ET — WT 247
115 ER — WL 1

TOTAL PCE ALL VEHICLES WITH PCE

NL NT NR: 138 519 13

CALCULATED PEAK HOUR VOLUMES- 3 AXLE TRUCKS

1 2 0 (SR ST SL)

0 EL — WR 0
0 ET — WT 0
0 ER — WL 0

08:00-09:00

NL NT NR: 2 3 0

ADJUSTED PEAK HOUR VOLUMES AFTER PCE OF 2.0

2 4 0 (SR ST SL)

0 EL — WR 0
0 ET — WT 0
0 ER — WL 0

08:00-09:00 PCE 3 AXLE TRUCKS

NL NT NR: 4 6 0

CALCULATED PEAK HOUR VOLUMES

0 0 0 (SR ST SL)

0 EL — WR 0
0 ET — WT 0
0 ER — WL 0

07:00-08:00

NL NT NR: 0 0 0

ADJUSTED PEAK HOUR VOLUMES AFTER PCE OF 3.0

0 0 0 (SR ST SL)

0 EL — WR 0
0 ET — WT 0
0 ER — WL 0

07:00-08:00

NL NT NR: 0 0 0

PM PEAK COUNT

TURNING MOVEMENT COUNT

PROJECT NAME: CITY OF ROSEMEAD TRAFFIC ANALYSIS
PROJECT NO: 18480
DATE: 26-Sep-18

PASSENGER CARS

TIME	N-S STREET: WALNUT GROVE AVE							E-W STREET: HELLMAN AVE							ADULT PED COUNT			
	NORTH BOUND			SOUTH BOUND			N-S	EAST BOUND			WEST BOUND			E-W				
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	TOTAL	NL	SL	EL	WL
16:00-16:15	35	174	2	28	162	23	424	55	27	16	1	8	35	142		2	1	
16:15-16:30	22	197	1	30	176	21	447	57	18	23	1	6	34	139				
16:30-16:45	36	139	3	22	137	26	363	60	21	18	2	8	41	150				
16:45-17:00	24	167	1	30	153	20	395	70	22	19		4	47	162				
17:00-17:15	36	223	3	39	155	26	482	63	13	16	2	6	52	152				
17:15-17:30	34	220	4	43	174	36	511	60	18	17	1	11	53	160		1		1
17:30-17:45	26	210	2	27	148	28	441	76	21	31	3	3	64	198				
17:45-18:00	31	227	4	51	192	37	542	88	19	15	1	13	68	204		2		

3+ AXLE TRUCKS

															SCHOOL AGE PED COUNT			
															NL	SL	EL	WL
16:00-16:15							0							0		2	2	
16:15-16:30							0							0				
16:30-16:45							0							0				
16:45-17:00							0							0		1	1	1
17:00-17:15							0							0				
17:15-17:30							0							0		1		
17:30-17:45							0							0				
17:45-18:00							0							0				

															BIKE COUNT			
															NL	SL	EL	WL
16:00-16:15					1		1							0	1			
16:15-16:30							0							0	1			
16:30-16:45							0				1			1				
16:45-17:00							0							0		1		
17:00-17:15							0				1			1				
17:15-17:30							0							0				1
17:30-17:45							0							0			1	
17:45-18:00							0	1						1				

PEAK-HOUR VOLUME ANALYSIS

CALCULATED PEAK HOUR VOLUMES-PM

		127	669	160	
		SR	ST	SL	
287	EL			WR	237
71	ET		17:00-18:00	WT	33
79	ER		CARS	WL	7
		NL	NT	NR	
		127	880	13	

ADJUSTED PEAK HOUR VOLUMES- TOTAL PCE PM

		127	672	160	
		SR	ST	SL	
287	EL			WR	237
71	ET		TOTAL PCE	WT	33
79	ER		ALL VEHICLES PCE	WL	10
		NL	NT	NR	
		127	880	13	

CALCULATED PEAK HOUR VOLUMES-TRUCKS

		0	0	0	
		SR	ST	SL	
0	EL			WR	0
0	ET		16:00-17:00	WT	0
0	ER			WL	0
		NL	NT	NR	
		0	0	0	

ADJUSTED PEAK HOUR VOLUMES AFTER PCE OF 2.0

		0	0	0	
		SR	ST	SL	
0	EL			WR	0
0	ET		16:00-17:00	WT	0
0	ER		PCE 3 AXLE TRUCKS	WL	0
		NL	NT	NR	
		0	0	0	

CALCULATED PEAK HOUR VOLUMES

		0	1	0	
		SR	ST	SL	
0	EL			WR	0
0	ET		16:00-17:00	WT	0
0	ER			WL	1
		NL	NT	NR	
		0	0	0	

ADJUSTED PEAK HOUR VOLUMES AFTER PCE OF 3.0

		0	3	0	
		SR	ST	SL	
0	EL			WR	0
0	ET		16:00-17:00	WT	0
0	ER			WL	3
		NL	NT	NR	
		0	0	0	

AM PEAK COUNT

TURNING MOVEMENT COUNT

PROJECT NAME: CITY OF ROSEMEAD TRAFFIC ANALYSIS
PROJECT NO: 18480
DATE: 26-Sep-18

PASSENGER CARS

N-S STREET: WALNUT GROVE AVE E-W STREET: GARVEY AVE

TIME	NORTH BOUND			SOUTH BOUND			N-S	EAST BOUND			WEST BOUND			E-W	ADULT PED COUNT			
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	TOTAL	NL	SL	EL	WL
07:00-07:15	13	69	8	8	93	11	202	8	67	9	17	144	24	269	3	5	2	4
07:15-07:30	23	104	16	32	77	24	276	19	68	6	17	155	32	297	8	6	1	5
07:30-07:45	21	107	22	31	131	33	345	23	105	17	36	190	34	405	7	5	2	3
07:45-08:00	50	113	21	43	148	30	405	29	141	24	35	165	35	429	5	9	3	3
08:00-08:15	34	82	19	54	144	33	366	26	190	21	46	182	20	485	15	5	6	6
08:15-08:30	23	113	40	56	153	19	404	14	186	21	21	143	29	414	7	3	5	4
08:30-08:45	17	67	21	43	145	20	313	21	165	16	28	184	32	446	1	9		4
08:45-09:00	15	88	21	58	166	31	379	24	146	17	35	175	22	419	4	11	1	7

3+ AXLE TRUCKS

															SCHOOL AGE PED COUNT			
															NL	SL	EL	WL
07:00-07:15		1			1		2							0	1			
07:15-07:30			1		1		2					2		2		1	1	
07:30-07:45							0			1				1	4		2	9
07:45-08:00		1					1							0	3		1	
08:00-08:15							0					2		2	2			
08:15-08:30							0		1	1				2				1
08:30-08:45					1		1					1		1	1		1	
08:45-09:00							0							0				

															BIKE COUNT			
															NL	SL	EL	WL
07:00-07:15							0							0	1	2		1
07:15-07:30							0							0	2	1	1	
07:30-07:45							0							0	1	1	1	2
07:45-08:00							0							0	3	5	2	1
08:00-08:15							0							0	2	4		
08:15-08:30							0							0	1	3		
08:30-08:45							0							0	2	2	1	
08:45-09:00							0							0	4	2		3

PEAK-HOUR VOLUME ANALYSIS

CALCULATED PEAK HOUR VOLUMES-AM

		102	590	196		
		SR	ST	SL		
90	EL				WR	116
682	ET		07:45-08:45		WT	674
82	ER		CARS		WL	130
		NL	NT	NR		
		124	375	101		

ADJUSTED PEAK HOUR VOLUMES- TOTAL PCE AM

		102	594	196		
		SR	ST	SL		
90	EL				WR	116
682	ET		TOTAL PCE		WT	678
84	ER		ALL VEHICLES WITH PCE		WL	130
\		NL	NT	NR		
		124	379	103		

CALCULATED PEAK HOUR VOLUMES- 3 AXLE TRUCKS

		0	2	0		
		SR	ST	SL		
0	EL				WR	0
0	ET		07:00-08:00		WT	2
1	ER				WL	0
		NL	NT	NR		
		0	2	1		

ADJUSTED PEAK HOUR VOLUMES AFTER PCE OF 2.0

		0	4	0		
		SR	ST	SL		
0	EL				WR	0
0	ET		07:00-08:00		WT	4
2	ER		PCE 3 AXLE TRUCKS		WL	0
		NL	NT	NR		
		0	4	2		

CALCULATED PEAK HOUR VOLUMES

		0	0	0		
		SR	ST	SL		
0	EL				WR	0
0	ET		07:00-08:00		WT	0
0	ER				WL	0
		NL	NT	NR		
		0	0	0		

ADJUSTED PEAK HOUR VOLUMES AFTER PCE OF 3.0

		0	0	0		
		SR	ST	SL		
0	EL				WR	0
0	ET		07:00-08:00		WT	0
0	ER				WL	0
		NL	NT	NR		
		0	0	0		

PM PEAK COUNT

TURNING MOVEMENT COUNT

PROJECT NAME: CITY OF ROSEMEAD TRAFFIC ANALYSIS
PROJECT NO: 18480
DATE: 26-Sep-18

PASSENGER CARS

N-S STREET: WALNUT GROVE AVE E-W STREET: GARVEY AVE

TIME	NORTH BOUND			SOUTH BOUND			N-S	EAST BOUND			WEST BOUND			E-W	ADULT PED COUNT			
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	TOTAL	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	TOTAL	NL	SL	EL	WL
16:00-16:15	16	150	23	50	110	19	368	24	155	21	31	159	48	438	5	1	6	1
16:15-16:30	14	144	33	39	112	25	367	27	196	24	22	159	34	462	5	3	6	8
16:30-16:45	17	146	26	43	119	19	370	32	190	19	38	149	48	476	3	5	1	2
16:45-17:00	23	156	37	39	103	20	378	28	184	20	23	159	51	465	2		1	
17:00-17:15	26	164	25	38	109	20	382	35	166	22	28	192	59	502	4	1	3	7
17:15-17:30	25	189	35	28	117	33	427	31	206	18	33	211	44	543	3	4	3	3
17:30-17:45	37	189	30	49	116	31	452	27	184	21	48	186	28	494	3	6	2	4
17:45-18:00	34	185	38	38	119	13	427	42	186	16	27	176	44	491	9	4	7	5

3+ AXLE TRUCKS

															SCHOOL AGE PED COUNT			
															NL	SL	EL	WL
16:00-16:15					1		1		1					1				
16:15-16:30						1	1							0				2
16:30-16:45				1			1							0	1	3	2	1
16:45-17:00							0			1		1		2	2	1		
17:00-17:15							0		1					1	1			3
17:15-17:30							0							0				
17:30-17:45							0							0				
17:45-18:00							0					1		1	5			1

															BIKE COUNT			
															NL	SL	EL	WL
16:00-16:15							0							0	2			
16:15-16:30							0							0	2	2	1	2
16:30-16:45							0							0				1
16:45-17:00							0							0	5	1	2	
17:00-17:15							0							0	3		2	1
17:15-17:30							0							0	4	1	3	
17:30-17:45							0							0	3		1	1
17:45-18:00							0							0	3	1	6	

PEAK-HOUR VOLUME ANALYSIS

CALCULATED PEAK HOUR VOLUMES-PM

		97	461	153		
		SR	ST	SL		
135	EL				WR	175
742	ET		17:00-18:00		WT	765
77	ER		CARS		WL	136
		NL	NT	NR		
		122	727	128		

ADJUSTED PEAK HOUR VOLUMES- TOTAL PCE PM

		99	463	155		
		SR	ST	SL		
135	EL				WR	175
744	ET		TOTAL PCE		WT	767
79	ER		ALL VEHICLES PCE		WL	136
		NL	NT	NR		
		122	727	128		

CALCULATED PEAK HOUR VOLUMES-TRUCKS

		1	1	1		
		SR	ST	SL		
0	EL				WR	0
1	ET		16:00-17:00		WT	1
1	ER				WL	0
		NL	NT	NR		
		0	0	0		

ADJUSTED PEAK HOUR VOLUMES AFTER PCE OF 2.0

		2	2	2		
		SR	ST	SL		
0	EL				WR	0
2	ET		16:00-17:00		WT	2
2	ER		PCE 3 AXLE TRUCKS		WL	0
		NL	NT	NR		
		0	0	0		

CALCULATED PEAK HOUR VOLUMES

		0	0	0		
		SR	ST	SL		
0	EL				WR	0
0	ET		16:00-17:00		WT	0
0	ER				WL	0
		NL	NT	NR		
		0	0	0		

ADJUSTED PEAK HOUR VOLUMES AFTER PCE OF 3.0

		0	0	0		
		SR	ST	SL		
0	EL				WR	0
0	ET		16:00-17:00		WT	0
0	ER				WL	0
		NL	NT	NR		
		0	0	0		

APPENDIX D

LEVEL OF SERVICE WORKSHEETS

EXISTING

Vistro File: C:\...\AME.vistro
Report File: C:\...\AME.pdf

Scenario 1 Existing AM Peak Hour
11/12/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-10 EB Ramps (NS) at Hellman Ave (EW)	Signalized	ICU 1	WB Thru	0.591	-	A
2	Walnut Grove Ave (NS) at Hellman Ave (EW)	Signalized	ICU 1	SB Thru	0.685	-	B
4	Walnut Grove Ave (NS) at Garvey Ave (EW)	Signalized	ICU 1	WB Right	0.696	-	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-10 EB Ramps (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.591

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	253	13	115	154	159	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	253	13	115	154	159	190
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	63	3	29	39	40	48
Total Analysis Volume [veh/h]	253	13	115	154	159	190
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Split	Split	Split	Split
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.15	0.06	0.15	0.19	0.19
Intersection LOS	A					
Intersection V/C	0.591					

Intersection Level Of Service Report
Intersection 2: Walnut Grove Ave (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.685

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	146	470	13	127	578	115	232	59	115	0	86	269
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	470	13	127	578	115	232	59	115	0	86	269
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	118	3	32	145	29	58	15	29	0	22	67
Total Analysis Volume [veh/h]	146	470	13	127	578	115	232	59	115	0	86	269
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.13	0.13	0.07	0.19	0.19	0.13	0.16	0.06	0.00	0.05	0.15
Intersection LOS	B											
Intersection V/C	0.685											

Intersection Level Of Service Report
Intersection 4: Walnut Grove Ave (NS) at Garvey Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.696

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	102	347	138	246	426	196	113	818	69	102	808	134
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	102	347	138	246	426	196	113	818	69	102	808	134
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	87	35	62	107	49	28	205	17	26	202	34
Total Analysis Volume [veh/h]	102	347	138	246	426	196	113	818	69	102	808	134
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.13	0.13	0.14	0.17	0.17	0.06	0.25	0.25	0.06	0.26	0.26
Intersection LOS	B											
Intersection V/C	0.696											

Vistro File: C:\...\PME.vistro
Report File: C:\...\PME.pdf

Scenario 1 Existing PM Peak Hour
11/12/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-10 EB Ramps (NS) at Hellman Ave (EW)	Signalized	ICU 1	WB Right	0.583	-	A
2	Walnut Grove Ave (NS) at Hellman Ave (EW)	Signalized	ICU 1	SB Right	0.726	-	C
4	Walnut Grove Ave (NS) at Garvey Ave (EW)	Signalized	ICU 1	WB Right	0.765	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-10 EB Ramps (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.583

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	252	17	47	221	202	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	252	17	47	221	202	130
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	63	4	12	55	51	33
Total Analysis Volume [veh/h]	252	17	47	221	202	130
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Split	Split	Split	Split
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.15	0.03	0.15	0.18	0.18
Intersection LOS	A					
Intersection V/C	0.583					

Intersection Level Of Service Report
Intersection 2: Walnut Grove Ave (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.726

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	646	19	166	699	151	285	102	86	11	58	189
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	646	19	166	699	151	285	102	86	11	58	189
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	162	5	42	175	38	71	26	22	3	15	47
Total Analysis Volume [veh/h]	125	646	19	166	699	151	285	102	86	11	58	189
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.18	0.18	0.09	0.24	0.24	0.16	0.22	0.05	0.01	0.04	0.11
Intersection LOS	C											
Intersection V/C	0.726											

Intersection Level Of Service Report
Intersection 4: Walnut Grove Ave (NS) at Garvey Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.765

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	117	513	165	159	505	107	141	910	102	146	920	197
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	117	513	165	159	505	107	141	910	102	146	920	197
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	128	41	40	126	27	35	228	26	37	230	49
Total Analysis Volume [veh/h]	117	513	165	159	505	107	141	910	102	146	920	197
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.19	0.19	0.09	0.17	0.17	0.08	0.28	0.28	0.08	0.31	0.31
Intersection LOS	C											
Intersection V/C	0.765											

EXISTING PLUS PROJECT

Vistro File: C:\...\AME.vistro
Report File: C:\...\AMEP.pdf

Scenario 2 Existing Plus Projct AM Peak Hour
11/12/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-10 EB Ramps (NS) at Hellman Ave (EW)	Signalized	ICU 1	WB Right	0.601	-	B
2	Walnut Grove Ave (NS) at Hellman Ave (EW)	Signalized	ICU 1	SB Right	0.694	-	B
3	Walnut Grove Ave (NS) at Project Dwy (EW)	Two-way stop	HCM 6th Edition	EB Left	0.151	33.5	D
4	Walnut Grove Ave (NS) at Garvey Ave (EW)	Signalized	ICU 1	WB Thru	0.724	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-10 EB Ramps (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.601

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	253	13	115	154	159	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	0	4	3	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	258	13	115	158	162	195
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	65	3	29	40	41	49
Total Analysis Volume [veh/h]	258	13	115	158	162	195
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Split	Split	Split	Split
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.15	0.06	0.15	0.20	0.20
Intersection LOS	B					
Intersection V/C	0.601					

Intersection Level Of Service Report
Intersection 2: Walnut Grove Ave (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.694

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	146	470	13	127	578	115	232	59	115	0	86	269
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	14	0	0	16	0	0	0	9	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	154	484	13	127	594	115	232	59	124	0	86	269
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	121	3	32	149	29	58	15	31	0	22	67
Total Analysis Volume [veh/h]	154	484	13	127	594	115	232	59	124	0	86	269
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.14	0.14	0.07	0.20	0.20	0.13	0.16	0.07	0.00	0.05	0.15
Intersection LOS	B											
Intersection V/C	0.694											

Intersection Level Of Service Report
Intersection 3: Walnut Grove Ave (NS) at Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	33.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.151

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	594	868	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	50	0	0	25	22	48
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	594	868	25	22	48
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	149	217	6	6	12
Total Analysis Volume [veh/h]	50	594	868	25	22	48
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.01	0.01	0.00	0.15	0.09
d_M, Delay for Movement [s/veh]	10.10	0.00	0.00	0.00	33.47	15.18
Movement LOS	B	A	A	A	D	C
95th-Percentile Queue Length [veh/ln]	0.21	0.11	0.00	0.00	0.90	0.90
95th-Percentile Queue Length [ft/ln]	5.30	2.65	0.00	0.00	22.56	22.56
d_A, Approach Delay [s/veh]	0.78		0.00		20.93	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.23					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 4: Walnut Grove Ave (NS) at Garvey Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.724

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	102	347	138	246	426	196	113	818	69	102	808	134
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	16	0	17	15	16	17	0	0	0	0	17
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	102	363	138	263	441	212	130	818	69	102	808	151
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	91	35	66	110	53	33	205	17	26	202	38
Total Analysis Volume [veh/h]	102	363	138	263	441	212	130	818	69	102	808	151
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.14	0.14	0.15	0.18	0.18	0.07	0.25	0.25	0.06	0.27	0.27
Intersection LOS	C											
Intersection V/C	0.724											

Vistro File: C:\...\PME.vistro
Report File: C:\...\PMEP.pdf

Scenario 2 Existing Plus Project PM Peak Hour
11/12/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-10 EB Ramps (NS) at Hellman Ave (EW)	Signalized	ICU 1	WB Thru	0.588	-	A
2	Walnut Grove Ave (NS) at Hellman Ave (EW)	Signalized	ICU 1	SB Thru	0.731	-	C
3	Walnut Grove Ave (NS) at Project Dwy (EW)	Two-way stop	HCM 6th Edition	EB Left	0.081	29.1	D
4	Walnut Grove Ave (NS) at Garvey Ave (EW)	Signalized	ICU 1	WB Right	0.777	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-10 EB Ramps (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.588

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	252	17	47	221	202	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	1	2	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	255	17	47	222	204	134
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	4	12	56	51	34
Total Analysis Volume [veh/h]	255	17	47	222	204	134
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Split	Split	Split	Split
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.15	0.03	0.15	0.19	0.19
Intersection LOS	A					
Intersection V/C	0.588					

Intersection Level Of Service Report
Intersection 2: Walnut Grove Ave (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.731

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	646	19	166	699	151	285	102	86	11	58	189
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	7	0	0	7	0	0	0	4	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	131	653	19	166	706	151	285	102	90	11	58	189
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	163	5	42	177	38	71	26	23	3	15	47
Total Analysis Volume [veh/h]	131	653	19	166	706	151	285	102	90	11	58	189
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.19	0.19	0.09	0.24	0.24	0.16	0.22	0.05	0.01	0.04	0.11
Intersection LOS	C											
Intersection V/C	0.731											

Intersection Level Of Service Report
Intersection 3: Walnut Grove Ave (NS) at Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	29.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.081

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	851	771	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	22	0	0	11	13	20
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	851	771	11	13	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	213	193	3	3	5
Total Analysis Volume [veh/h]	22	851	771	11	13	20
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.00	0.08	0.03
d_M, Delay for Movement [s/veh]	9.45	0.00	0.00	0.00	29.09	12.52
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh/ln]	0.08	0.04	0.00	0.00	0.38	0.38
95th-Percentile Queue Length [ft/ln]	2.04	1.02	0.00	0.00	9.55	9.55
d_A, Approach Delay [s/veh]	0.24		0.00		19.05	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.50					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 4: Walnut Grove Ave (NS) at Garvey Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.777

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	117	513	165	159	505	107	141	910	102	146	920	197
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	8	0	7	7	6	7	0	0	0	0	7
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	117	521	165	166	512	113	148	910	102	146	920	204
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	130	41	42	128	28	37	228	26	37	230	51
Total Analysis Volume [veh/h]	117	521	165	166	512	113	148	910	102	146	920	204
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.19	0.19	0.09	0.17	0.17	0.08	0.28	0.28	0.08	0.31	0.31
Intersection LOS	C											
Intersection V/C	0.777											

OPENING YEAR (2022) WITHOUT PROJECT

Vistro File: C:\...\AME.vistro

Scenario 3 Opening Year (2022) Without Project AM Peak Hour

Report File: C:\...\AMOYWO.pdf

11/12/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-10 EB Ramps (NS) at Hellman Ave (EW)	Signalized	ICU 1	WB Thru	0.620	-	B
2	Walnut Grove Ave (NS) at Hellman Ave (EW)	Signalized	ICU 1	SB Thru	0.706	-	C
4	Walnut Grove Ave (NS) at Garvey Ave (EW)	Signalized	ICU 1	WB Thru	0.713	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-10 EB Ramps (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.620

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	253	13	115	154	159	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	18	7	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	258	13	135	164	172	194
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	65	3	34	41	43	49
Total Analysis Volume [veh/h]	258	13	135	164	172	194
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Split	Split	Split	Split
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.15	0.08	0.17	0.20	0.20
Intersection LOS	B					
Intersection V/C	0.620					

Intersection Level Of Service Report
Intersection 2: Walnut Grove Ave (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.706

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	146	470	13	127	578	115	232	59	115	0	86	269
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	11	10	7	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	149	482	13	130	601	127	244	60	117	0	88	274
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	121	3	33	150	32	61	15	29	0	22	69
Total Analysis Volume [veh/h]	149	482	13	130	601	127	244	60	117	0	88	274
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.14	0.14	0.07	0.20	0.20	0.14	0.17	0.07	0.00	0.05	0.15
Intersection LOS	C											
Intersection V/C	0.706											

Intersection Level Of Service Report
Intersection 4: Walnut Grove Ave (NS) at Garvey Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.713

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	102	347	138	246	426	196	113	818	69	102	808	134
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	3	0	0	2	9	0	18	7	0	15	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	110	357	141	251	437	209	115	852	77	104	839	137
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	89	35	63	109	52	29	213	19	26	210	34
Total Analysis Volume [veh/h]	110	357	141	251	437	209	115	852	77	104	839	137
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.14	0.14	0.14	0.18	0.18	0.06	0.26	0.26	0.06	0.27	0.27
Intersection LOS	C											
Intersection V/C	0.713											

Vistro File: C:\...\PME.vistro

Scenario 3 Opening Year (2022) Without Project PM Peak Hour

Report File: C:\...\PMOYWO.pdf

11/12/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-10 EB Ramps (NS) at Hellman Ave (EW)	Signalized	ICU 1	WB Thru	0.623	-	B
2	Walnut Grove Ave (NS) at Hellman Ave (EW)	Signalized	ICU 1	SB Thru	0.755	-	C
4	Walnut Grove Ave (NS) at Garvey Ave (EW)	Signalized	ICU 1	WB Thru	0.787	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-10 EB Ramps (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.623

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	252	17	47	221	202	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	26	9	20	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	257	17	74	234	226	133
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	4	19	59	57	33
Total Analysis Volume [veh/h]	257	17	74	234	226	133
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Split	Split	Split	Split
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.15	0.04	0.17	0.20	0.20
Intersection LOS	B					
Intersection V/C	0.623					

Intersection Level Of Service Report
Intersection 2: Walnut Grove Ave (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.755

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	646	19	166	699	151	285	102	86	11	58	189
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	21	20	9	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	128	662	19	169	734	174	300	104	88	11	59	193
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	166	5	42	184	44	75	26	22	3	15	48
Total Analysis Volume [veh/h]	128	662	19	169	734	174	300	104	88	11	59	193
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.19	0.19	0.09	0.25	0.25	0.17	0.22	0.05	0.01	0.04	0.11
Intersection LOS	C											
Intersection V/C	0.755											

Intersection Level Of Service Report
Intersection 4: Walnut Grove Ave (NS) at Garvey Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.787

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	117	513	165	159	505	107	141	910	102	146	920	197
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	3	0	0	3	18	0	28	10	0	29	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	131	526	168	162	518	127	144	956	114	149	967	201
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	132	42	41	130	32	36	239	29	37	242	50
Total Analysis Volume [veh/h]	131	526	168	162	518	127	144	956	114	149	967	201
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.19	0.19	0.09	0.18	0.18	0.08	0.30	0.30	0.08	0.32	0.32
Intersection LOS	C											
Intersection V/C	0.787											

OPENING YEAR (2022) WITH PROJECT

Vistro File: C:\...\AME.vistro
Report File: C:\...\AMOYW.pdf

Scenario 4 Opening Year (2022) With Project AM Peak Hour
11/12/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-10 EB Ramps (NS) at Hellman Ave (EW)	Signalized	ICU 1	WB Thru	0.629	-	B
2	Walnut Grove Ave (NS) at Hellman Ave (EW)	Signalized	ICU 1	SB Thru	0.715	-	C
3	Walnut Grove Ave (NS) at Project Dwy (EW)	Two-way stop	HCM 6th Edition	EB Left	0.160	35.3	E
4	Walnut Grove Ave (NS) at Garvey Ave (EW)	Signalized	ICU 1	WB Right	0.741	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-10 EB Ramps (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.629

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	253	13	115	154	159	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	18	11	13	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	263	13	135	168	175	199
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	3	34	42	44	50
Total Analysis Volume [veh/h]	263	13	135	168	175	199
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Split	Split	Split	Split
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.15	0.08	0.17	0.21	0.21
Intersection LOS	B					
Intersection V/C	0.629					

Intersection Level Of Service Report
Intersection 2: Walnut Grove Ave (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.715

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	146	470	13	127	578	115	232	59	115	0	86	269
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	17	0	0	27	10	7	0	9	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	157	496	13	130	617	127	244	60	126	0	88	274
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	124	3	33	154	32	61	15	32	0	22	69
Total Analysis Volume [veh/h]	157	496	13	130	617	127	244	60	126	0	88	274
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.14	0.14	0.07	0.21	0.21	0.14	0.17	0.07	0.00	0.05	0.15
Intersection LOS	C											
Intersection V/C	0.715											

Intersection Level Of Service Report
Intersection 3: Walnut Grove Ave (NS) at Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	35.3
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.160

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	594	868	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	50	3	11	25	22	48
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	609	896	25	22	48
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	152	224	6	6	12
Total Analysis Volume [veh/h]	50	609	896	25	22	48
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.01	0.01	0.00	0.16	0.09
d_M, Delay for Movement [s/veh]	10.24	0.00	0.00	0.00	35.29	15.71
Movement LOS	B	A	A	A	E	C
95th-Percentile Queue Length [veh/ln]	0.22	0.11	0.00	0.00	0.95	0.95
95th-Percentile Queue Length [ft/ln]	5.44	2.72	0.00	0.00	23.81	23.81
d_A, Approach Delay [s/veh]	0.78		0.00		21.86	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.24					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 4: Walnut Grove Ave (NS) at Garvey Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.741

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	102	347	138	246	426	196	113	818	69	102	808	134
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	19	0	17	17	25	17	18	7	0	15	17
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	110	373	141	268	452	225	132	852	77	104	839	154
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	93	35	67	113	56	33	213	19	26	210	39
Total Analysis Volume [veh/h]	110	373	141	268	452	225	132	852	77	104	839	154
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.14	0.14	0.15	0.19	0.19	0.07	0.26	0.26	0.06	0.28	0.28
Intersection LOS	C											
Intersection V/C	0.741											

Vistro File: C:\...\PME.vistro
Report File: C:\...\PMOYW.pdf

Scenario 4 Opening Year (2022) With Project PM Peak Hour
11/12/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-10 EB Ramps (NS) at Hellman Ave (EW)	Signalized	ICU 1	WB Thru	0.628	-	B
2	Walnut Grove Ave (NS) at Hellman Ave (EW)	Signalized	ICU 1	SB Right	0.760	-	C
3	Walnut Grove Ave (NS) at Project Dwy (EW)	Two-way stop	HCM 6th Edition	EB Left	0.087	30.9	D
4	Walnut Grove Ave (NS) at Garvey Ave (EW)	Signalized	ICU 1	WB Right	0.799	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-10 EB Ramps (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.628

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	252	17	47	221	202	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	26	10	22	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	260	17	74	235	228	137
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	65	4	19	59	57	34
Total Analysis Volume [veh/h]	260	17	74	235	228	137
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Split	Split	Split	Split
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.15	0.04	0.17	0.20	0.20
Intersection LOS	B					
Intersection V/C	0.628					

Intersection Level Of Service Report
Intersection 2: Walnut Grove Ave (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.760

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	646	19	166	699	151	285	102	86	11	58	189
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	10	0	0	28	20	9	0	4	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	134	669	19	169	741	174	300	104	92	11	59	193
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	167	5	42	185	44	75	26	23	3	15	48
Total Analysis Volume [veh/h]	134	669	19	169	741	174	300	104	92	11	59	193
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.19	0.19	0.09	0.25	0.25	0.17	0.22	0.05	0.01	0.04	0.11
Intersection LOS	C											
Intersection V/C	0.760											

Intersection Level Of Service Report
Intersection 3: Walnut Grove Ave (NS) at Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	30.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.087

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	851	771	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	22	3	21	11	13	20
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	871	807	11	13	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	218	202	3	3	5
Total Analysis Volume [veh/h]	22	871	807	11	13	20
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.00	0.09	0.03
d_M, Delay for Movement [s/veh]	9.59	0.00	0.00	0.00	30.95	12.89
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh/ln]	0.08	0.04	0.00	0.00	0.41	0.41
95th-Percentile Queue Length [ft/ln]	2.10	1.05	0.00	0.00	10.18	10.18
d_A, Approach Delay [s/veh]	0.24		0.00		20.01	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.50					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 4: Walnut Grove Ave (NS) at Garvey Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.799

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	117	513	165	159	505	107	141	910	102	146	920	197
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	11	0	7	10	24	7	28	10	0	29	7
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	131	534	168	169	525	133	151	956	114	149	967	208
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	134	42	42	131	33	38	239	29	37	242	52
Total Analysis Volume [veh/h]	131	534	168	169	525	133	151	956	114	149	967	208
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.20	0.20	0.09	0.18	0.18	0.08	0.30	0.30	0.08	0.33	0.33
Intersection LOS	C											
Intersection V/C	0.799											

CALTRANS

Vistro File: C:\...\AME.vistro
Report File: C:\...\AME.pdf

Scenario 1 Existing AM Peak Hour
11/12/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-10 EB Ramps (NS) at Hellman Ave (EW)	Signalized	HCM 6th Edition	SB Left	0.545	34.3	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-10 EB Ramps (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	34.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.545

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	253	13	115	154	159	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	253	13	115	154	159	190
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	63	3	29	39	40	48
Total Analysis Volume [veh/h]	253	13	115	154	159	190
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Split	Split	Split	Split
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	7	0	0	7	7	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	47	0	0	23	30	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C
C, Cycle Length [s]	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	35	35
g / C, Green / Cycle	0.17	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.15	0.15	0.20
s, saturation flow rate [veh/h]	1771	1831	1706
c, Capacity [veh/h]	308	647	602
d1, Uniform Delay [s]	40.19	24.54	26.32
k, delay calibration	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00
d2, Incremental Delay [s]	7.21	1.97	4.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.42	0.58
d, Delay for Lane Group [s/veh]	47.41	26.51	30.34
Lane Group LOS	D	C	C
Critical Lane Group	Yes	Yes	Yes
50th-Percentile Queue Length [veh/ln]	6.91	5.11	7.29
50th-Percentile Queue Length [ft/ln]	172.67	127.71	182.25
95th-Percentile Queue Length [veh/ln]	11.22	8.82	11.72
95th-Percentile Queue Length [ft/ln]	280.43	220.38	292.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.41	47.41	26.51	26.51	30.34	30.34
Movement LOS	D	D	C	C	C	C
d_A, Approach Delay [s/veh]	47.41		26.51		30.34	
Approach LOS	D		C		C	
d_I, Intersection Delay [s/veh]	34.31					
Intersection LOS	C					
Intersection V/C	0.545					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	0.000	1.936	2.193
Crosswalk LOS	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	50.00	50.00	50.00
l_b,int, Bicycle LOS Score for Intersection	4.571	4.576	4.708
Bicycle LOS	E	E	E

Sequence

Ring 1	1	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Vistro File: C:\...\PME.vistro
Report File: C:\...\PME.pdf

Scenario 1 Existing PM Peak Hour
11/12/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-10 EB Ramps (NS) at Hellman Ave (EW)	Signalized	HCM 6th Edition	SB Left	0.529	34.0	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-10 EB Ramps (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	34.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.529

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	252	17	47	221	202	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	252	17	47	221	202	130
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	63	4	12	55	51	33
Total Analysis Volume [veh/h]	252	17	47	221	202	130
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Split	Split	Split	Split
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	7	0	0	7	7	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	48	0	0	23	29	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C
C, Cycle Length [s]	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	35	35
g / C, Green / Cycle	0.17	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.15	0.14	0.19
s, saturation flow rate [veh/h]	1767	1854	1749
c, Capacity [veh/h]	311	653	616
d1, Uniform Delay [s]	40.10	24.55	25.92
k, delay calibration	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00
d2, Incremental Delay [s]	7.23	1.91	3.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.41	0.54
d, Delay for Lane Group [s/veh]	47.33	26.45	29.28
Lane Group LOS	D	C	C
Critical Lane Group	Yes	Yes	Yes
50th-Percentile Queue Length [veh/ln]	6.98	5.08	6.77
50th-Percentile Queue Length [ft/ln]	174.57	126.96	169.14
95th-Percentile Queue Length [veh/ln]	11.32	8.77	11.03
95th-Percentile Queue Length [ft/ln]	282.91	219.36	275.78

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.33	47.33	26.45	26.45	29.28	29.28
Movement LOS	D	D	C	C	C	C
d_A, Approach Delay [s/veh]	47.33		26.45		29.28	
Approach LOS	D		C		C	
d_I, Intersection Delay [s/veh]	33.99					
Intersection LOS	C					
Intersection V/C	0.529					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	0.000	1.959	2.208
Crosswalk LOS	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	50.00	50.00	50.00
l_b,int, Bicycle LOS Score for Intersection	4.576	4.575	4.680
Bicycle LOS	E	E	E

Sequence

Ring 1	1	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Vistro File: C:\...\AME.vistro
Report File: C:\...\AMEP.pdf

Scenario 2 Existing Plus Projct AM Peak Hour
11/12/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-10 EB Ramps (NS) at Hellman Ave (EW)	Signalized	HCM 6th Edition	SB Left	0.556	34.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-10 EB Ramps (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	34.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.556

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	253	13	115	154	159	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	0	4	3	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	258	13	115	158	162	195
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	65	3	29	40	41	49
Total Analysis Volume [veh/h]	258	13	115	158	162	195
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Split	Split	Split	Split
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	7	0	0	7	7	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	48	0	0	22	30	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C
C, Cycle Length [s]	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	35	35
g / C, Green / Cycle	0.18	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.15	0.15	0.21
s, saturation flow rate [veh/h]	1771	1831	1706
c, Capacity [veh/h]	313	644	600
d1, Uniform Delay [s]	40.05	24.71	26.59
k, delay calibration	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00
d2, Incremental Delay [s]	7.23	2.04	4.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.42	0.60
d, Delay for Lane Group [s/veh]	47.28	26.75	30.90
Lane Group LOS	D	C	C
Critical Lane Group	Yes	Yes	Yes
50th-Percentile Queue Length [veh/ln]	7.03	5.22	7.54
50th-Percentile Queue Length [ft/ln]	175.80	130.38	188.60
95th-Percentile Queue Length [veh/ln]	11.38	8.96	12.05
95th-Percentile Queue Length [ft/ln]	284.53	224.01	301.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.28	47.28	26.75	26.75	30.90	30.90
Movement LOS	D	D	C	C	C	C
d_A, Approach Delay [s/veh]	47.28		26.75		30.90	
Approach LOS	D		C		C	
d_I, Intersection Delay [s/veh]	34.57					
Intersection LOS	C					
Intersection V/C	0.556					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	41.41	41.41
I_p,int, Pedestrian LOS Score for Intersection	0.000	1.940	2.198
Crosswalk LOS	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	50.00	50.00	50.00
I_b,int, Bicycle LOS Score for Intersection	4.580	4.583	4.721
Bicycle LOS	E	E	E

Sequence

Ring 1	1	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Vistro File: C:\...\PME.vistro
Report File: C:\...\PMEP.pdf

Scenario 2 Existing Plus Project PM Peak Hour
11/12/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-10 EB Ramps (NS) at Hellman Ave (EW)	Signalized	HCM 6th Edition	SB Left	0.535	34.1	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-10 EB Ramps (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	34.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.535

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	252	17	47	221	202	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	1	2	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	255	17	47	222	204	134
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	4	12	56	51	34
Total Analysis Volume [veh/h]	255	17	47	222	204	134
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Split	Split	Split	Split
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	7	0	0	7	7	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	48	0	0	23	29	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C
C, Cycle Length [s]	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	35	35
g / C, Green / Cycle	0.18	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.15	0.15	0.19
s, saturation flow rate [veh/h]	1768	1854	1748
c, Capacity [veh/h]	314	651	614
d1, Uniform Delay [s]	40.01	24.62	26.10
k, delay calibration	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00
d2, Incremental Delay [s]	7.24	1.93	3.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.41	0.55
d, Delay for Lane Group [s/veh]	47.25	26.55	29.63
Lane Group LOS	D	C	C
Critical Lane Group	Yes	Yes	Yes
50th-Percentile Queue Length [veh/ln]	7.06	5.11	6.94
50th-Percentile Queue Length [ft/ln]	176.44	127.75	173.55
95th-Percentile Queue Length [veh/ln]	11.41	8.82	11.26
95th-Percentile Queue Length [ft/ln]	285.37	220.44	281.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.25	47.25	26.55	26.55	29.63	29.63
Movement LOS	D	D	C	C	C	C
d_A, Approach Delay [s/veh]	47.25		26.55		29.63	
Approach LOS	D		C		C	
d_I, Intersection Delay [s/veh]	34.14					
Intersection LOS	C					
Intersection V/C	0.535					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	0.000	1.960	2.212
Crosswalk LOS	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	50.00	50.00	50.00
l_b,int, Bicycle LOS Score for Intersection	4.581	4.576	4.690
Bicycle LOS	E	E	E

Sequence

Ring 1	1	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Vistro File: C:\...\AME.vistro

Scenario 3 Opening Year (2022) Without Project AM Peak Hour

Report File: C:\...\AMOYWO.pdf

11/12/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-10 EB Ramps (NS) at Hellman Ave (EW)	Signalized	HCM 6th Edition	SB Left	0.577	34.7	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-10 EB Ramps (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	34.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.577

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	253	13	115	154	159	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	18	7	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	258	13	135	164	172	194
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	65	3	34	41	43	49
Total Analysis Volume [veh/h]	258	13	135	164	172	194
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Split	Split	Split	Split
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	7	0	0	7	7	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	48	0	0	23	29	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C
C, Cycle Length [s]	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	35	35
g / C, Green / Cycle	0.18	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.15	0.16	0.21
s, saturation flow rate [veh/h]	1771	1829	1710
c, Capacity [veh/h]	313	643	602
d1, Uniform Delay [s]	40.05	25.13	26.75
k, delay calibration	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00
d2, Incremental Delay [s]	7.23	2.41	4.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.46	0.61
d, Delay for Lane Group [s/veh]	47.28	27.54	31.28
Lane Group LOS	D	C	C
Critical Lane Group	Yes	Yes	Yes
50th-Percentile Queue Length [veh/ln]	7.03	5.83	7.80
50th-Percentile Queue Length [ft/ln]	175.80	145.85	194.94
95th-Percentile Queue Length [veh/ln]	11.38	9.80	12.38
95th-Percentile Queue Length [ft/ln]	284.53	244.88	309.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.28	47.28	27.54	27.54	31.28	31.28
Movement LOS	D	D	C	C	C	C
d_A, Approach Delay [s/veh]	47.28		27.54		31.28	
Approach LOS	D		C		C	
d_I, Intersection Delay [s/veh]	34.72					
Intersection LOS	C					
Intersection V/C	0.577					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	0.000	1.957	2.203
Crosswalk LOS	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	50.00	50.00	50.00
l_b,int, Bicycle LOS Score for Intersection	4.580	4.626	4.736
Bicycle LOS	E	E	E

Sequence

Ring 1	1	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Vistro File: C:\...\PME.vistro

Scenario 3 Opening Year (2022) Without Project PM Peak Hour

Report File: C:\...\PMOYWO.pdf

11/12/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-10 EB Ramps (NS) at Hellman Ave (EW)	Signalized	HCM 6th Edition	SB Left	0.572	34.5	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-10 EB Ramps (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	34.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.572

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	252	17	47	221	202	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	26	9	20	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	257	17	74	234	226	133
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	4	19	59	57	33
Total Analysis Volume [veh/h]	257	17	74	234	226	133
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Split	Split	Split	Split
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	7	0	0	7	7	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	48	0	0	24	28	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C
C, Cycle Length [s]	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	35	35
g / C, Green / Cycle	0.18	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.16	0.17	0.20
s, saturation flow rate [veh/h]	1768	1848	1755
c, Capacity [veh/h]	316	648	616
d1, Uniform Delay [s]	39.96	25.31	26.51
k, delay calibration	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00
d2, Incremental Delay [s]	7.24	2.49	4.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.48	0.58
d, Delay for Lane Group [s/veh]	47.20	27.79	30.51
Lane Group LOS	D	C	C
Critical Lane Group	Yes	Yes	Yes
50th-Percentile Queue Length [veh/ln]	7.11	6.05	7.52
50th-Percentile Queue Length [ft/ln]	177.70	151.15	188.00
95th-Percentile Queue Length [veh/ln]	11.48	10.08	12.02
95th-Percentile Queue Length [ft/ln]	287.00	251.96	300.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.20	47.20	27.79	27.79	30.51	30.51
Movement LOS	D	D	C	C	C	C
d_A, Approach Delay [s/veh]	47.20		27.79		30.51	
Approach LOS	D		C		C	
d_I, Intersection Delay [s/veh]	34.48					
Intersection LOS	C					
Intersection V/C	0.572					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	0.000	1.990	2.223
Crosswalk LOS	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	50.00	50.00	50.00
l_b,int, Bicycle LOS Score for Intersection	4.585	4.641	4.725
Bicycle LOS	E	E	E

Sequence

Ring 1	1	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Vistro File: C:\...\AME.vistro
Report File: C:\...\AMOYW.pdf

Scenario 4 Opening Year (2022) With Project AM Peak Hour
11/12/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-10 EB Ramps (NS) at Hellman Ave (EW)	Signalized	HCM 6th Edition	SB Left	0.587	35.0	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-10 EB Ramps (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	35.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.587

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	253	13	115	154	159	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	18	11	13	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	263	13	135	168	175	199
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	3	34	42	44	50
Total Analysis Volume [veh/h]	263	13	135	168	175	199
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Split	Split	Split	Split
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	7	0	0	7	7	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	48	0	0	23	29	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C
C, Cycle Length [s]	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	35	35
g / C, Green / Cycle	0.18	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.16	0.17	0.22
s, saturation flow rate [veh/h]	1771	1829	1709
c, Capacity [veh/h]	318	641	599
d1, Uniform Delay [s]	39.92	25.31	27.03
k, delay calibration	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00
d2, Incremental Delay [s]	7.24	2.49	4.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.47	0.62
d, Delay for Lane Group [s/veh]	47.15	27.80	31.88
Lane Group LOS	D	C	C
Critical Lane Group	Yes	Yes	Yes
50th-Percentile Queue Length [veh/ln]	7.16	5.95	8.06
50th-Percentile Queue Length [ft/ln]	178.93	148.71	201.62
95th-Percentile Queue Length [veh/ln]	11.54	9.95	12.72
95th-Percentile Queue Length [ft/ln]	288.62	248.70	318.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.15	47.15	27.80	27.80	31.88	31.88
Movement LOS	D	D	C	C	C	C
d_A, Approach Delay [s/veh]	47.15		27.80		31.88	
Approach LOS	D		C		C	
d_I, Intersection Delay [s/veh]	35.01					
Intersection LOS	D					
Intersection V/C	0.587					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	0.000	1.961	2.208
Crosswalk LOS	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	50.00	50.00	50.00
l_b,int, Bicycle LOS Score for Intersection	4.588	4.632	4.750
Bicycle LOS	E	E	E

Sequence

Ring 1	1	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Report File: C:\...\PMOYW.pdf

Scenario 4 Opening Year (2022) With Project PM Peak Hour
11/12/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-10 EB Ramps (NS) at Hellman Ave (EW)	Signalized	HCM 6th Edition	SB Left	0.578	34.7	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-10 EB Ramps (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	34.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.578

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	252	17	47	221	202	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	26	10	22	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	260	17	74	235	228	137
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	65	4	19	59	57	34
Total Analysis Volume [veh/h]	260	17	74	235	228	137
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Split	Split	Split	Split
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	7	0	0	7	7	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	48	0	0	24	28	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C
C, Cycle Length [s]	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	35	35
g / C, Green / Cycle	0.18	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.16	0.17	0.21
s, saturation flow rate [veh/h]	1768	1848	1754
c, Capacity [veh/h]	319	647	614
d1, Uniform Delay [s]	39.87	25.39	26.70
k, delay calibration	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00
d2, Incremental Delay [s]	7.25	2.52	4.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.48	0.59
d, Delay for Lane Group [s/veh]	47.12	27.91	30.90
Lane Group LOS	D	C	C
Critical Lane Group	Yes	Yes	Yes
50th-Percentile Queue Length [veh/ln]	7.18	6.08	7.71
50th-Percentile Queue Length [ft/ln]	179.57	152.03	192.73
95th-Percentile Queue Length [veh/ln]	11.58	10.13	12.26
95th-Percentile Queue Length [ft/ln]	289.45	253.14	306.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.12	47.12	27.91	27.91	30.90	30.90
Movement LOS	D	D	C	C	C	C
d_A, Approach Delay [s/veh]	47.12		27.91		30.90	
Approach LOS	D		C		C	
d_I, Intersection Delay [s/veh]	34.65					
Intersection LOS	C					
Intersection V/C	0.578					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	0.000	1.992	2.226
Crosswalk LOS	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	50.00	50.00	50.00
l_b,int, Bicycle LOS Score for Intersection	4.589	4.642	4.735
Bicycle LOS	E	E	E

Sequence

Ring 1	1	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DRIVEWAY RESTRICTIONS

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Scenario 4 Opening Year (2022) With Project AM Peak Hour
11/12/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-10 EB Ramps (NS) at Hellman Ave (EW)	Signalized	ICU 1	WB Thru	0.641	-	B
2	Walnut Grove Ave (NS) at Hellman Ave (EW)	Signalized	ICU 1	SB Thru	0.718	-	C
3	Walnut Grove Ave (NS) at Project Dwy (EW)	Two-way stop	HCM 6th Edition	EB Right	0.133	12.9	B
4	Walnut Grove Ave (NS) at Garvey Ave (EW)	Signalized	ICU 1	WB Thru	0.726	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-10 EB Ramps (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.641

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	253	13	115	154	159	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	23	34	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	263	13	140	191	172	194
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	3	35	48	43	49
Total Analysis Volume [veh/h]	263	13	140	191	172	194
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Split	Split	Split	Split
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.15	0.08	0.18	0.20	0.20
Intersection LOS	B					
Intersection V/C	0.641					

Intersection Level Of Service Report
Intersection 2: Walnut Grove Ave (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.718

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	146	470	13	127	578	115	232	59	115	0	86	269
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	27	10	21	0	18	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	149	482	13	130	617	127	258	60	135	0	88	274
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	121	3	33	154	32	65	15	34	0	22	69
Total Analysis Volume [veh/h]	149	482	13	130	617	127	258	60	135	0	88	274
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.14	0.14	0.07	0.21	0.21	0.14	0.18	0.08	0.00	0.05	0.15
Intersection LOS	C											
Intersection V/C	0.718											

Intersection Level Of Service Report
Intersection 3: Walnut Grove Ave (NS) at Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	12.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.133

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	594	868	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	11	75	0	70
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	609	896	75	0	70
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	152	224	19	0	18
Total Analysis Volume [veh/h]	0	609	896	75	0	70
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.00	0.13
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	12.86
Movement LOS		A	A	A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.46
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	11.38
d_A, Approach Delay [s/veh]	0.00		0.00		12.86	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.55					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: Walnut Grove Ave (NS) at Garvey Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.726

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	102	347	138	246	426	196	113	818	69	102	808	134
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	22	3	0	16	16	49	0	18	7	0	32	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	126	357	141	267	451	249	115	852	77	104	856	137
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	89	35	67	113	62	29	213	19	26	214	34
Total Analysis Volume [veh/h]	126	357	141	267	451	249	115	852	77	104	856	137
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.14	0.14	0.15	0.19	0.19	0.06	0.26	0.26	0.06	0.28	0.28
Intersection LOS	C											
Intersection V/C	0.726											

Vistro File: C:\...\PME.vistro
Report File: C:\...\PMOYW.pdf

Scenario 4 Opening Year (2022) With Project PM Peak Hour
11/12/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	I-10 EB Ramps (NS) at Hellman Ave (EW)	Signalized	ICU 1	WB Thru	0.633	-	B
2	Walnut Grove Ave (NS) at Hellman Ave (EW)	Signalized	ICU 1	SB Right	0.761	-	C
3	Walnut Grove Ave (NS) at Project Dwy (EW)	Two-way stop	HCM 6th Edition	EB Right	0.057	11.6	B
4	Walnut Grove Ave (NS) at Garvey Ave (EW)	Signalized	ICU 1	WB Right	0.793	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: I-10 EB Ramps (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.633

Intersection Setup

Name						
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	252	17	47	221	202	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	30	20	20	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	260	17	78	245	226	133
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	65	4	20	61	57	33
Total Analysis Volume [veh/h]	260	17	78	245	226	133
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Split	Split	Split	Split
Signal group	1	0	0	8	4	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.15	0.04	0.18	0.20	0.20
Intersection LOS	B					
Intersection V/C	0.633					

Intersection Level Of Service Report
Intersection 2: Walnut Grove Ave (NS) at Hellman Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.761

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	125	646	19	166	699	151	285	102	86	11	58	189
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	28	20	16	0	7	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	128	662	19	169	741	174	307	104	95	11	59	193
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	166	5	42	185	44	77	26	24	3	15	48
Total Analysis Volume [veh/h]	128	662	19	169	741	174	307	104	95	11	59	193
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.19	0.19	0.09	0.25	0.25	0.17	0.23	0.05	0.01	0.04	0.11
Intersection LOS	C											
Intersection V/C	0.761											

Intersection Level Of Service Report
Intersection 3: Walnut Grove Ave (NS) at Project Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	11.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.057

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	851	771	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	21	32	0	33
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	871	807	32	0	33
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	218	202	8	0	8
Total Analysis Volume [veh/h]	0	871	807	32	0	33
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.00	0.06
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	11.55
Movement LOS		A	A	A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.18
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	4.49
d_A, Approach Delay [s/veh]	0.00		0.00		11.55	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.22					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: Walnut Grove Ave (NS) at Garvey Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.793

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	117	513	165	159	505	107	141	910	102	146	920	197
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	20	3	0	6	10	38	0	28	10	0	36	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	139	526	168	168	525	147	144	956	114	149	974	201
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	132	42	42	131	37	36	239	29	37	244	50
Total Analysis Volume [veh/h]	139	526	168	168	525	147	144	956	114	149	974	201
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.19	0.19	0.09	0.19	0.19	0.08	0.30	0.30	0.08	0.33	0.33
Intersection LOS	C											
Intersection V/C	0.793											

APPENDIX E

QUEUING WORKSHEETS

Queue Length Calculation
Based on Poisson Probability Distribution

Project Name:	Walnut Garvey Mixed Use Project
Project Number:	19302
Study Intersection:	Walnut Grove Avenue at Garvey Avenue
Scenario:	Opening Year With Project - AM

	Major Street	Minor Street
Street Name:	Walnut Grove Avenue	Garvey Avenue
Direction:	N-S	E-W
Movement:	SB	

Input		
Cycle Length	100	sec
Volume	339	veh/ln/hr
Probability	0.95	
Queue length / car	25	feet

Output		
Avg. Veh/Sec, λ =	0.0942	veh/ln/sec
Avg. Veh/Cycle, λ * T =	9.4167	veh/ln/cycle
Vehicles/Cycle at 0.95 probability	13	vehicle(s)
95th-Percentile Queue =	**325**	**feet**

Poisson Distribution Formula:

$$P(x) = \frac{(\lambda T)^x * e^{-\lambda T}}{x!}$$

Queue Length Calculation
Based on Poisson Probability Distribution

Project Name:	Walnut Garvey Mixed Use Project
Project Number:	19302
Study Intersection:	Walnut Grove Avenue at Garvey Avenue
Scenario:	Opening Year With Project - PM

	Major Street	Minor Street
Street Name:	Walnut Grove Avenue	Garvey Avenue
Direction:	N-S	E-W
Movement:	SB	

Input		
Cycle Length	100	sec
Volume	329	veh/ln/hr
Probability	0.95	
Queue length / car	25	feet

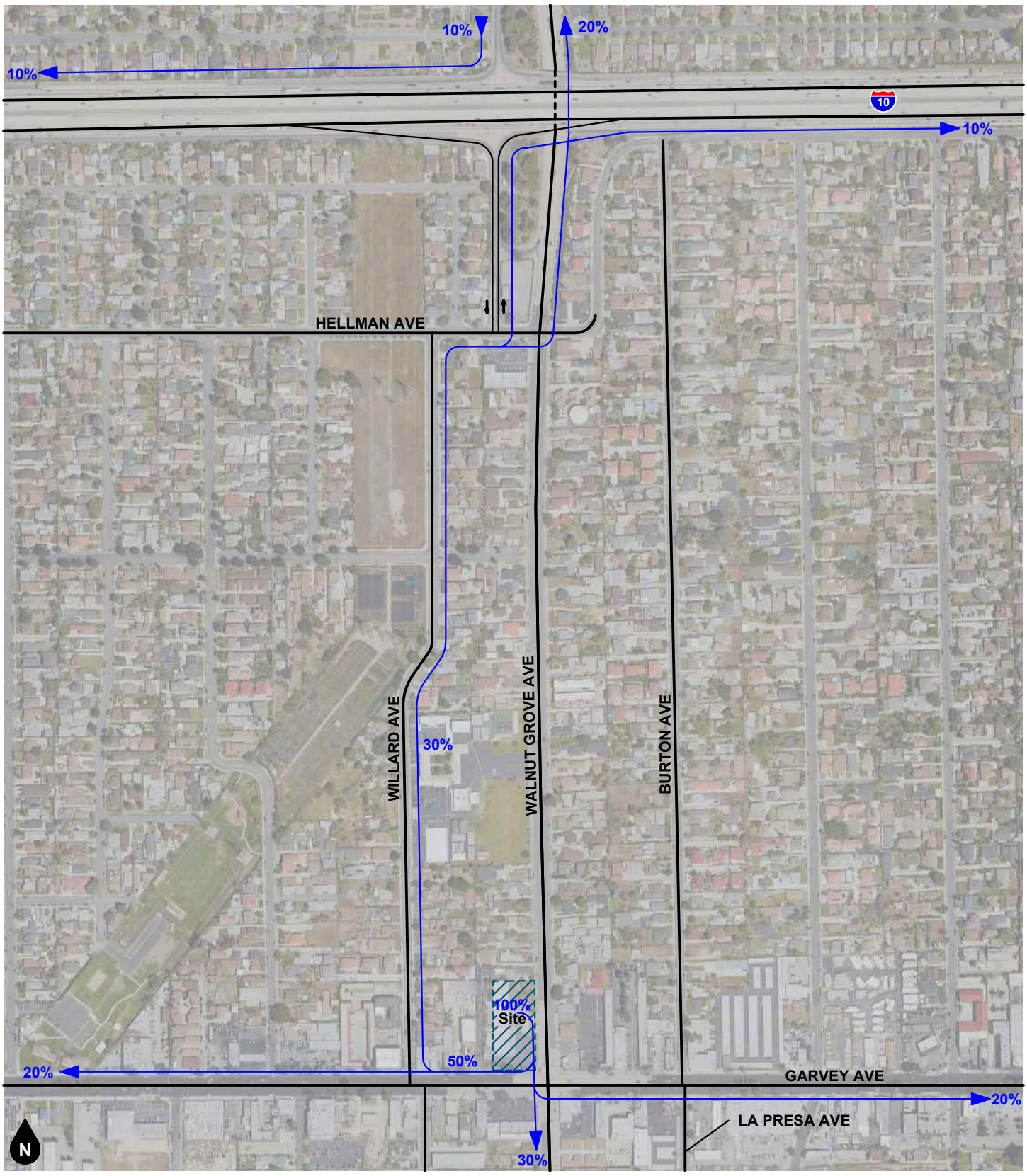
Output		
Avg. Veh/Sec, λ =	0.0914	veh/ln/sec
Avg. Veh/Cycle, λ * T =	9.1389	veh/ln/cycle
Vehicles/Cycle at 0.95 probability	13	vehicle(s)
95th-Percentile Queue =	**325**	**feet**

Poisson Distribution Formula:

$$P(x) = \frac{(\lambda T)^x * e^{-\lambda T}}{x!}$$

APPENDIX F

PROJECT TRIP DISTRIBUTIONS – DRIVEWAY RESTRICTIONS



Legend

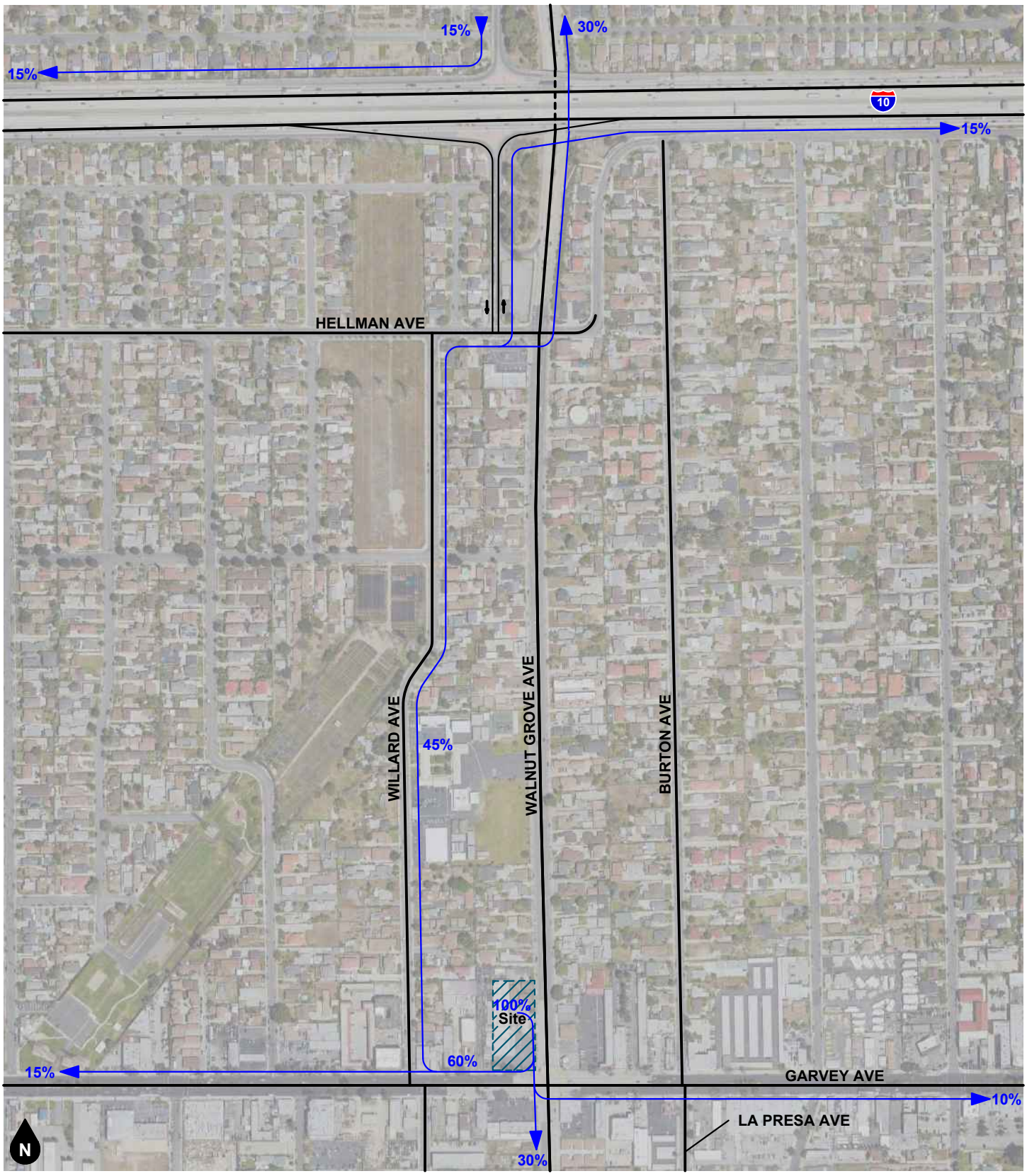
10% Percent From Project

Figure A
Project Outbound Trip Distributon - Residential
With Driveway Restrictions

Legend

10% Percent To Project

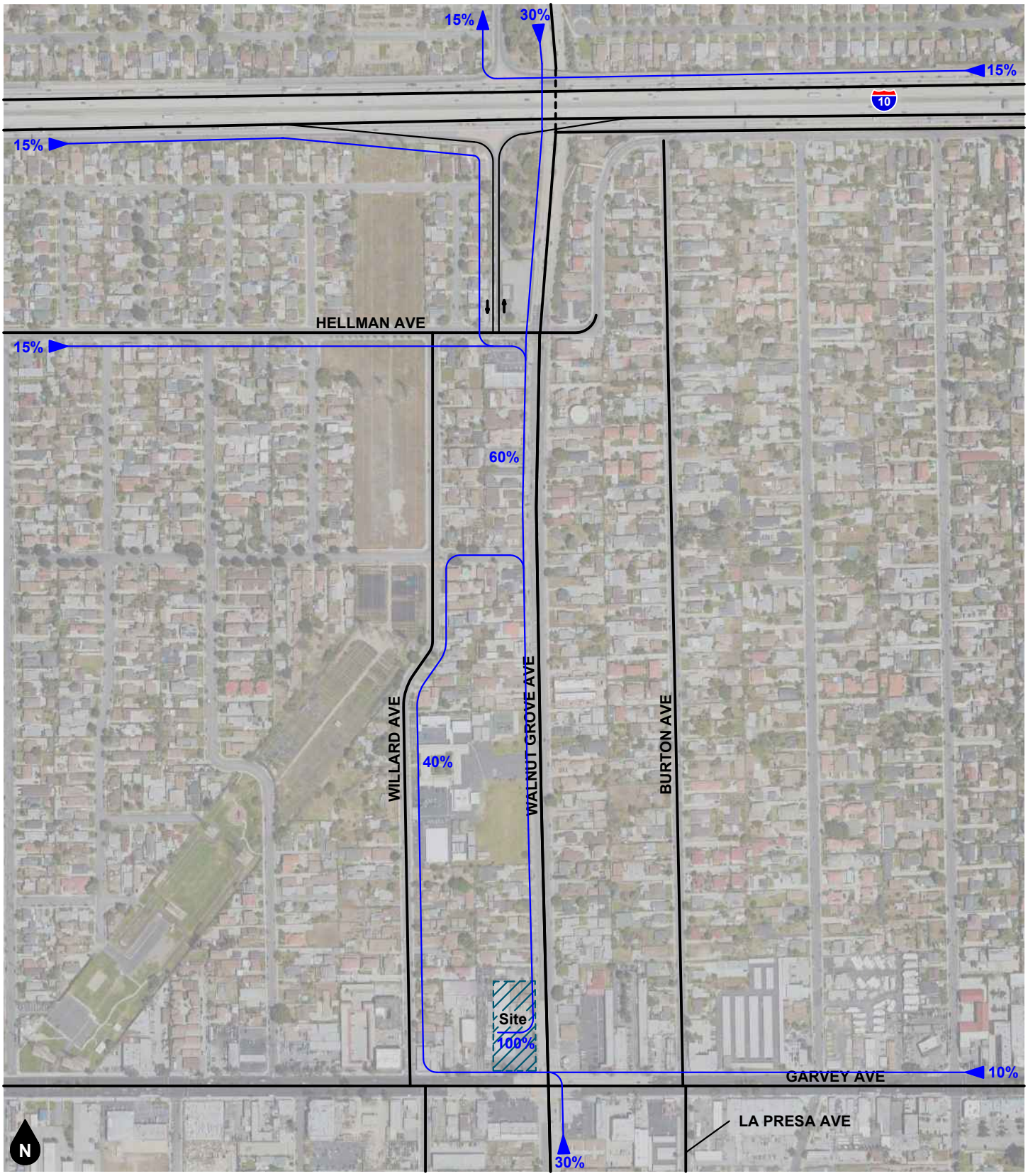
Figure B
Project Inbound Trip Distributon - Residential With Driveway Restrictions



Legend

10% Percent From Project

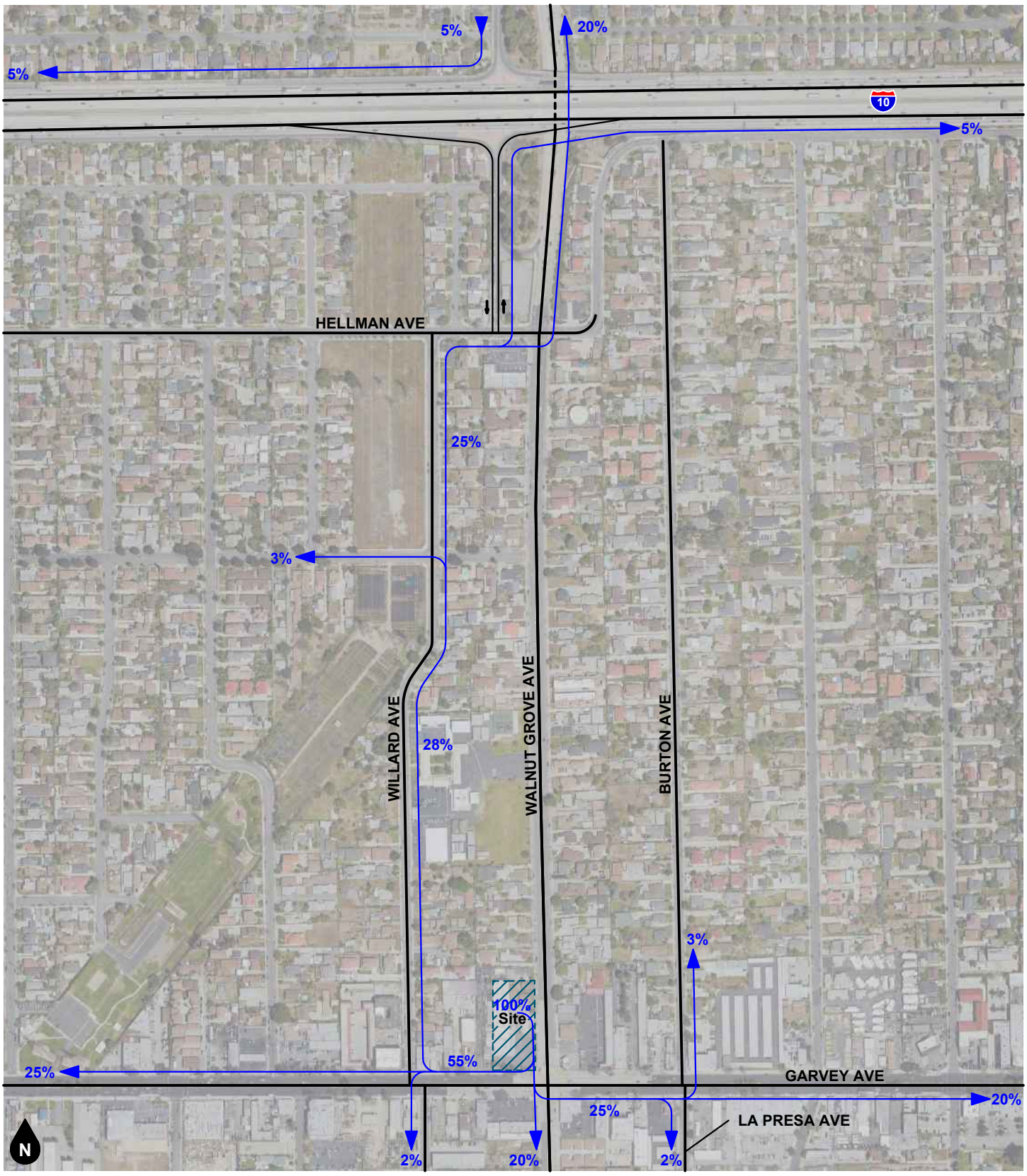
Figure C
Project Outbound Trip Distributon - Office
With Driveway Restrictions



Legend

10% Percent To Project

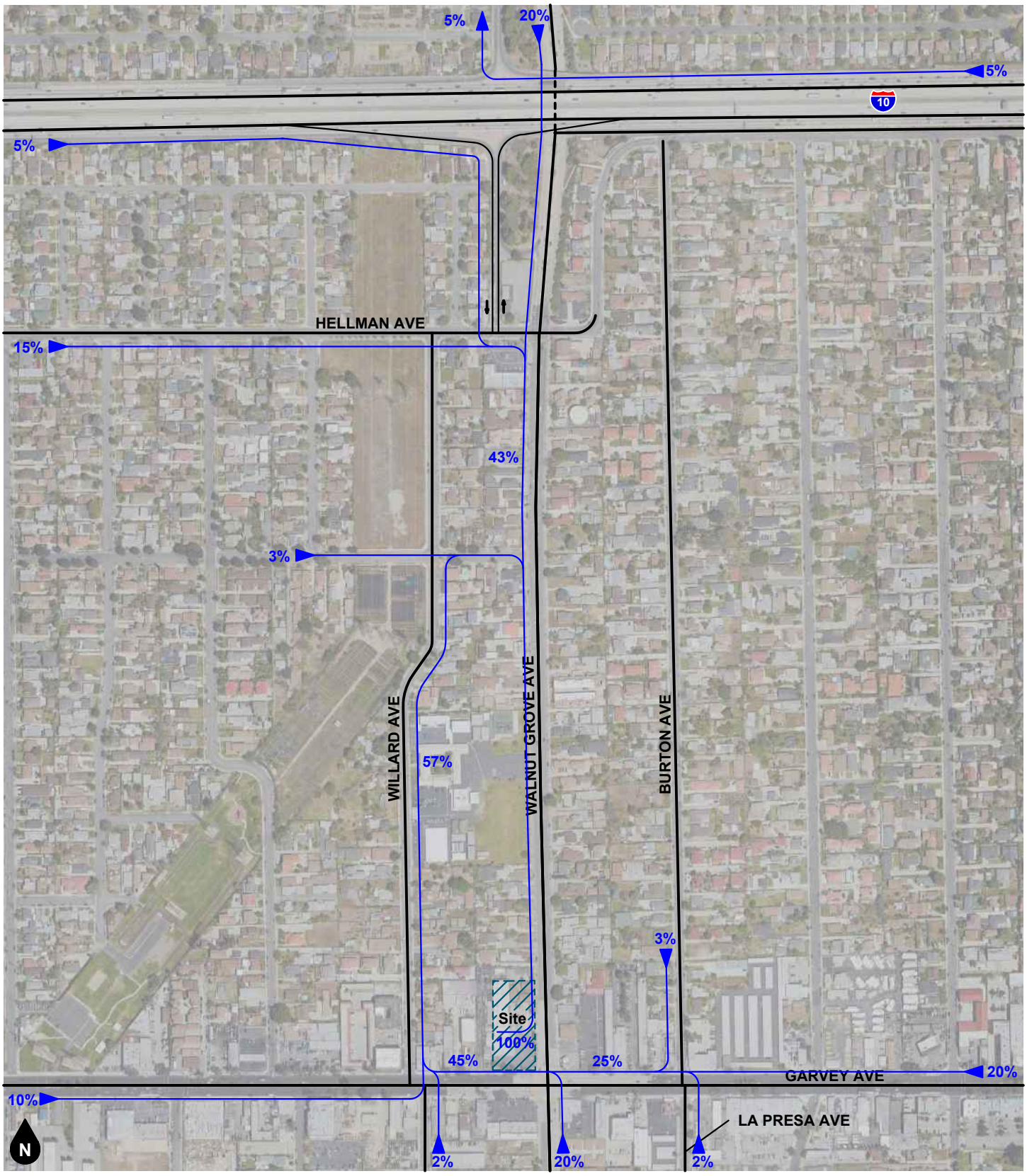
Figure D
Project Inbound Trip Distributon - Office
With Driveway Restrictions



Legend

10% Percent From Project

Figure E
Project Outbound Trip Distributon - Retail/Restaurant
With Driveway Restrictions



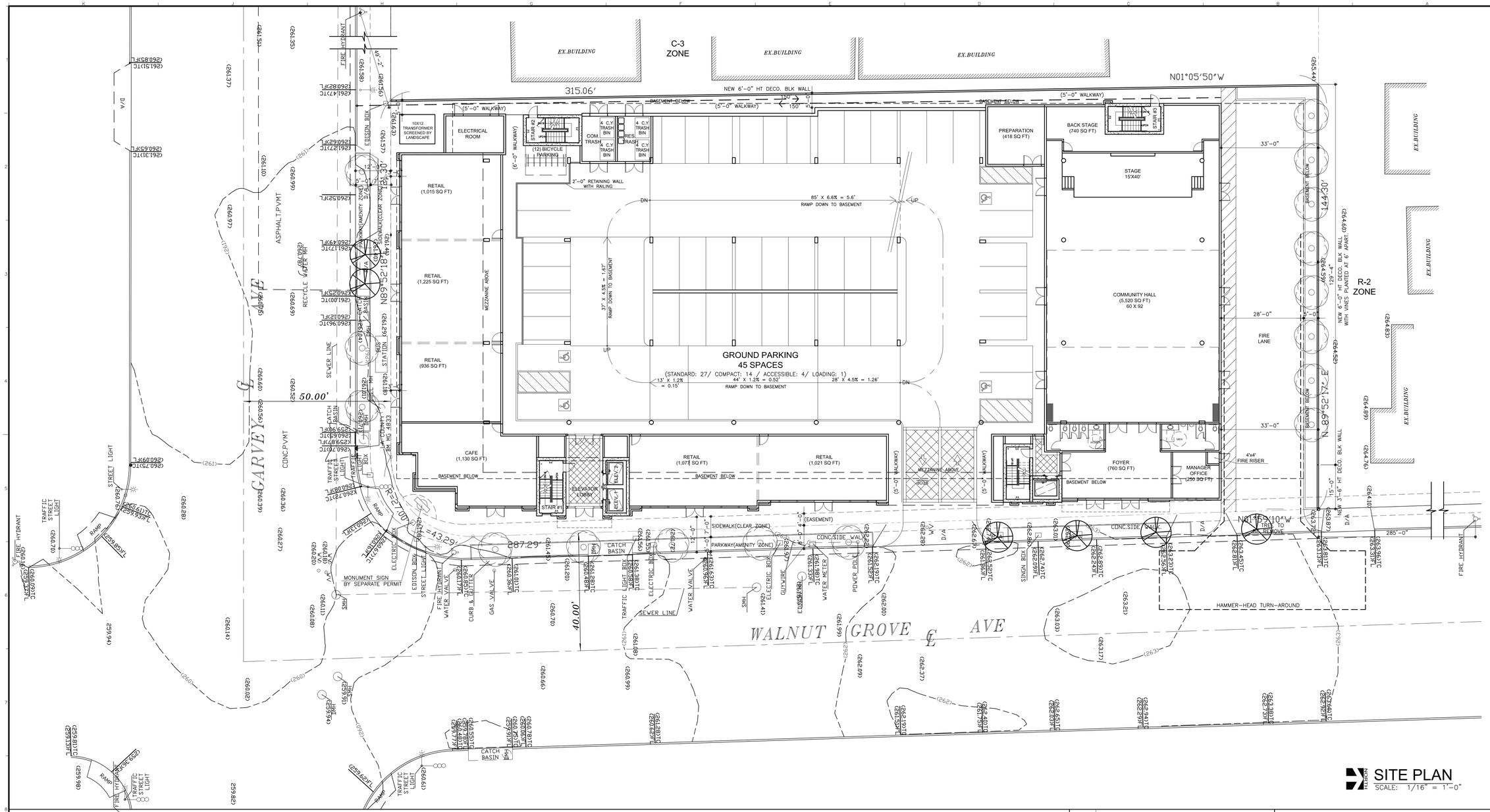
Legend

10% Percent To Project

Figure F
Project Inbound Trip Distributon - Retail/Restaurant With Driveway Restrictions

APPENDIX G

SITE PLANS



SITE PLAN
SCALE: 1/16" = 1'-0"

1. PROJECT: GARVEY WALNUT GROVE MIXED-USE
8589 GARVEY AVE. + 3001 WALNUT GROVE AVE. ROSEMEAD CA 91770
(ALL EXISTING BUILDINGS WILL BE DEMOLISHED UNDER THE SCOPE OF WORK)

OWNER: TAIWAN CENTER / MR. ALAN THIAN, PRESIDENT
C/O: RICHARD CHEN CELL: 626-536-2268
EMAIL: richchen@sbcglobal.com

2. LEGAL DESCRIPTION: A.P.N.: 5288-001-040, 041, 042, 043

3. LOT SIZE: 46,075 SF. (1.06 ACRES)

4. GENERAL PLAN: EXISTING: COMMERCIAL
PROPOSED: MIXED-USE, RESIDENTIAL/COMMERCIAL (30 DU/AC)

5. ZONING: EXISTING: C-3 MEDIUM COMMERCIAL
PROPOSED: RC-MUDO (RESIDENTIAL COMMERCIAL MIXED-USE DESIGN OVERLAY)
MIXED USE: RESIDENTIAL/COMMERCIAL (30 DU/AC; 3 STORIES)

6. RESIDENTIAL DENSITY:

PROPOSED DENSITY:	30 DU/AC
30 DU/AC X 1.06 AC (LOT SIZE)	= 31.8-U (BASE UNITS)
31.8-U X 1.35 (DENSITY BONUS)	= 42.9-U (PROPOSED 42-U CONDOS.)
31.8-U X 0.20 (AFFORDABLE UNITS)	= *6.36-U (7 LOW-INCOME UNITS.)

*PROPOSED 20% LOW-INCOME UNITS FOR 35% DENSITY BONUS

7. BUILDING HEIGHT/STORY: 63'-2" / 4-STORY

8. CODE: 2017 LA COUNTY AMENDMENTS TO 2016 CALIFORNIA BUILDING, PLUMBING, MECHANICAL, ELECTRICAL, & GREEN BUILDING CODE

9. OCCUPANCY GROUP: R-2 FOR RESIDENTIAL CONDOMINIUM
B FOR OFFICES
M FOR RETAILS / SERVICES
A-2 FOR FOOD PLACES / COFFEE SHOP
A-3 FOR COMMUNITY HALL
S-2 FOR PARKING GARAGE

10. TYPE OF CONSTRUCTION: 3-STORIES TYPE V-A FOR RESIDENTIAL CONDOMINIUMS OVER 1-STORY TYPE I-A FOR GROUND FLOOR COMMERCIAL WITH MEZZANINE LEVEL AND 1-LEVEL BASEMENT PARKING. (FULLY FIRE SPRINKLERED SYSTEM)

11. FLOOR AREA:

RESIDENTIAL:	4TH FLOOR	(CONDO UNITS)	17U	17,438 SF.
	3RD FLOOR	(CONDO UNITS)	17U	17,438 SF.
	2ND FLOOR	(CONDO UNITS)	8U	8,056 SF.
		(RECREATION, GYM, LIBRARY)		2,818 SF.
	SUBTOTAL:		42U	45,745 SF. = 72.2%
COMMERCIAL:	2ND FLOOR	(OFFICE UNITS)	5U	5,470 SF.
	1ST FLOOR	(COMMUNITY HALL)		5,520 SF.
		(MANAGER OFFICE)		250 SF.
		(CAFE/FOOD PLACES)		1,130 SF.
		(RETAILS/SALES/SERVICES)		5,274 SF.
	SUBTOTAL:			17,644 SF. = 27.8%
	TOTAL FLOOR AREA:			63,389 SF.

MEZZANINE LEVEL PARKING = 24,392 SF
GROUND FLOOR PARKING = 20,604 SF
BASEMENT LEVEL PARKING = 38,480 SF

12. F.A.R: TOTAL BUILDING AREA 63,389 SF. / 46,075 SF. = 1.38:1 (MAX 1.6:1)

13. RESIDENTIAL TYPES: (CONDOMINIUM)

TYPE A:	2-BDRM/2½-BTHRM	29U X 1,094 SF.	= 31,726 SF.
TYPE B:	1-BDRM/1½-BTHRM	13U X 862 SF.	= 11,206 SF.
TOTAL CONDO. UNITS:		42U	= 42,932 SF.

14. PARKING SPACE:

REQUIRED COMMERCIAL:

COMMUNITY HALL	5,520 SF. / 75	=	74 P
MANAGER OFFICE	250 SF. / 250	=	1 P
CAFE/FOOD PLACES	1,130 SF. / 100	=	11 P
RETAILS/SALES/SERVICES	5,274 SF. / 250	=	21 P
OFFICE SUITES (@2ND FLR)	5,470 SF. / 250	=	22 P
COMMERCIAL SUBTOTAL:	17,644 SF.	=	129 P

REQUIRED RESIDENTIAL:

TYPE A 2-BEDRM UNIT	29 U X 2P	=	58 P
TYPE B 1-BEDRM UNIT	13 U X 1P	=	13 P
(PER DENSITY BONUS: GUEST PARKING INCLUDED)			71 P
TOTAL REQUIRED:		=	200 P

PROVIDED:

AREA	STANDARD	COMPACT	H.C.	LOADING	TOTAL	REQ'D	SURPLUS
COMM.	95	29	5	–	129	129	0
RESIDENTIAL	73	0	2	–	75	71	4
TOTAL	168	29	7	–	204	200	4

COMPACT PARKING 29/136 = 21.3% < 25% MAX.

BIKE PARKING PROVIDED: 24 TOTAL; 12 BIKE RACKS ON MEZZANINE LEVEL AND 12 BIKE RACKS ON GROUND LEVEL (10% OF 210 PARKING SPACES = 21 REQ'D)

15. OPEN SPACE FOR RESIDENTIAL:

COMMON OPEN SPACE REQ'D: 42 RES. UNITS X 150 SF. = 6,300 SF.
PROVIDED:

4TH FLOOR:	OUTDOOR DECK	=	633 SF.
3RD FLOOR:	OUTDOOR DECK	=	633 SF.
2ND FLOOR:	OUTDOOR DECK	=	633 SF.
	COURTYARD	=	6,708 SF.
	RECREATION+GYM+LIBRARY	=	2,818 SF.
TOTAL PROVIDED:		=	11,425 SF. > 6,300 SF.

PRIVATE OPEN SPACE REQ'D: 42 RES. UNITS X 60 SF. = 2,520 SF.
PROVIDED:

4TH FLOOR:	(17) BALCONYS	=	1,173 SF.
3RD FLOOR:	(17) BALCONYS	=	1,173 SF.
2ND FLOOR:	(8) DECKS	=	5,100 SF.
TOTAL PROVIDED:		=	7,446 SF. > 2,520 SF.

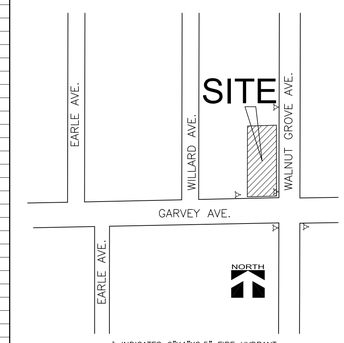
16. CONCESSIONS:

1. BUILDING HEIGHT/STORY:
RC-MUDO HEIGHT LIMITATION MAX. ALLOWABLE HEIGHT OF 45 FEET WITH THREE STORIES. PROJECT PROPOSED 4-STORY MIXED-USED COMMERCIAL AND RESIDENTIAL OF 59'-2" FEET HEIGHT UP TO FLAT ROOF, 63'-2" FEET HEIGHT UP TO TOP OF PARAPET.

2. BUILDING MASS:
RCMUDO BUILDING MASS REQUIRES 33% COMMERCIAL AND 67% RESIDENTIAL LAND USE MIX. PROJECT PROPOSED 27.8% COMMERCIAL AND 72.2% RESIDENTIAL MIXED-USED.

3 INFORMATION & SUMMARY

2 SHEET INDEX



1 VICINITY MAP

FILE: 190208PA1STE10
DRAWN: P.Z.

ARCHITECT:
S L A
ARCHITECTS
140 W. VALLEY BLVD., STE 215, SAN GABRIEL, CA 91776
PH: 626•571•8000
E: simon.lee@slarch.com

PROJECT:
GARVEY WALNUT GROVE PLAZA
MIXED-USE DEVELOPMENT
8589 E. GARVEY AVE. +
3001 WALNUT GROVE AVE. ROSEMEAD, CA 91770

LICENSED ARCHITECT
SIMON DONG-TSAN LEE
No. C14526
Ren. 11-30-19
STATE OF CALIFORNIA

JOB NO: 190208

A-1.1

AUG 30, 2019

NOTES LIGHTING:

A PHOTOMETRIC SURVEY (LIGHTING PLAN) SHALL BE APPROVED BY THE PLANNING COMMISSION FOR EACH MIXED-USE DEVELOPMENT. SAID PHOTOMETRIC SURVEY (LIGHTING PLAN) SHALL COMPLY WITH CITY CODE AND ANY OTHER APPLICABLE LIGHTING REQUIREMENTS FOR THE UNDERLYING ZONE AND OVERLAY(S).

NOTES FOR LANDSCAPING:

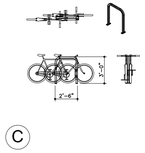
1.STREET TREES

A. ALL SPECIES OF MATURE OAK TREES SHALL BE PRESERVED OR OTHERWISE DEALT WITH PER CITY CODE.
B. THE REMOVAL OF OTHER MATURE TREES SHALL BE SUBJECT TO THE REVIEW AND APPROVAL OF THE URBAN FORESTER.
C. MATURE STREET TREES THAT ARE APPROVED FOR REMOVAL BY THE URBAN FORESTER SHALL BE REPLACED WITH A MINIMUM OF THREE NEW MATURE BOX TREES THAT HAVE AT LEAST A 24-INCH BOX AND ARE THE SAME SPECIES OF THE REPLACED MATURE STREET TREES OR A SPECIES APPROVED BY THE URBAN FORESTER. THE CITY RESERVED THE RIGHT TO INCREASE THE NUMBER OF TREES IF IT DEEMS NECESSARY IN ORDER TO COMPENSATE FOR MATURE TREE LOSS.

2.ON-SITE TREES

A. ALL SPECIES OF MATURE OAK TREES SHALL BE PRESERVED OR OTHERWISE DEALT PER CITY CODE.
B. THE REMOVAL OF OTHER MATURE TREES SHALL BE SUBJECT TO THE REVIEW AND APPROVAL OF THE PLANNING COMMISSION.
C. THE MATURE TREES THAT ARE APPROVED FOR REMOVAL BY THE PLANNING COMMISSION SHALL BE REPLACED WITH NEW MATURE TREES THAT HAVE AT LEAST A 24-INCH BOX AND ARE THE SAME SPECIES OF THE REPLACED MATURE TREES.

DERO: COMMERCIAL BIKE RACKS (DOWNTOWN RACKS)



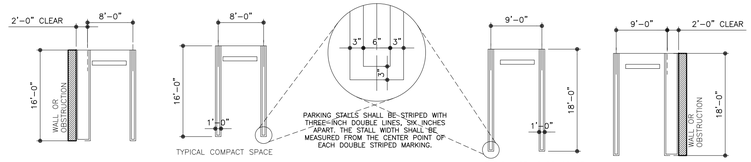
C

THE DOWNTOWN RACK USES THICK, SQUARE-TUBE CONSTRUCTION THAT CAN'T BE CUT WITH A PIPE CUTTER. THE EXTENDED WIDTH OF THE DOWNTOWN RACK MAKES FOR EASY BIKE PARKING BY GIVING THE BIKE FULL SUPPORT AND MULTIPLE LOCKING POINTS FOR A U-STYLE BIKE LOCK.

BREAK-A-WAY NUTS OR CONCRETE SPIKE ANTI-THEFT HARDWARE OPTIONS ARE INCLUDED WITH THE DOWNTOWN RACK.

EACH RACK PARKS TWO BIKES.

A. SECURELY ANCHORED TO THE SURFACE SO THEY CANNOT BE EASILY REMOVED AND SHALL BE OF SUFFICIENT STRENGTH TO RESIST THEFT;
B. SEPARATED BY A PHYSICAL BARRIER TO PROTECT THE BICYCLE FROM DAMAGE BY MOTOR VEHICLES IF LOCATED WITHIN A VEHICLE PARKING AREA; AND
C. MOTOR VEHICLE ENTRANCES SHALL DISPLAY ADEQUATE SIGNS TO INDICATE THE AVAILABILITY AND LOCATION OF THE BICYCLE PARKING FACILITIES.



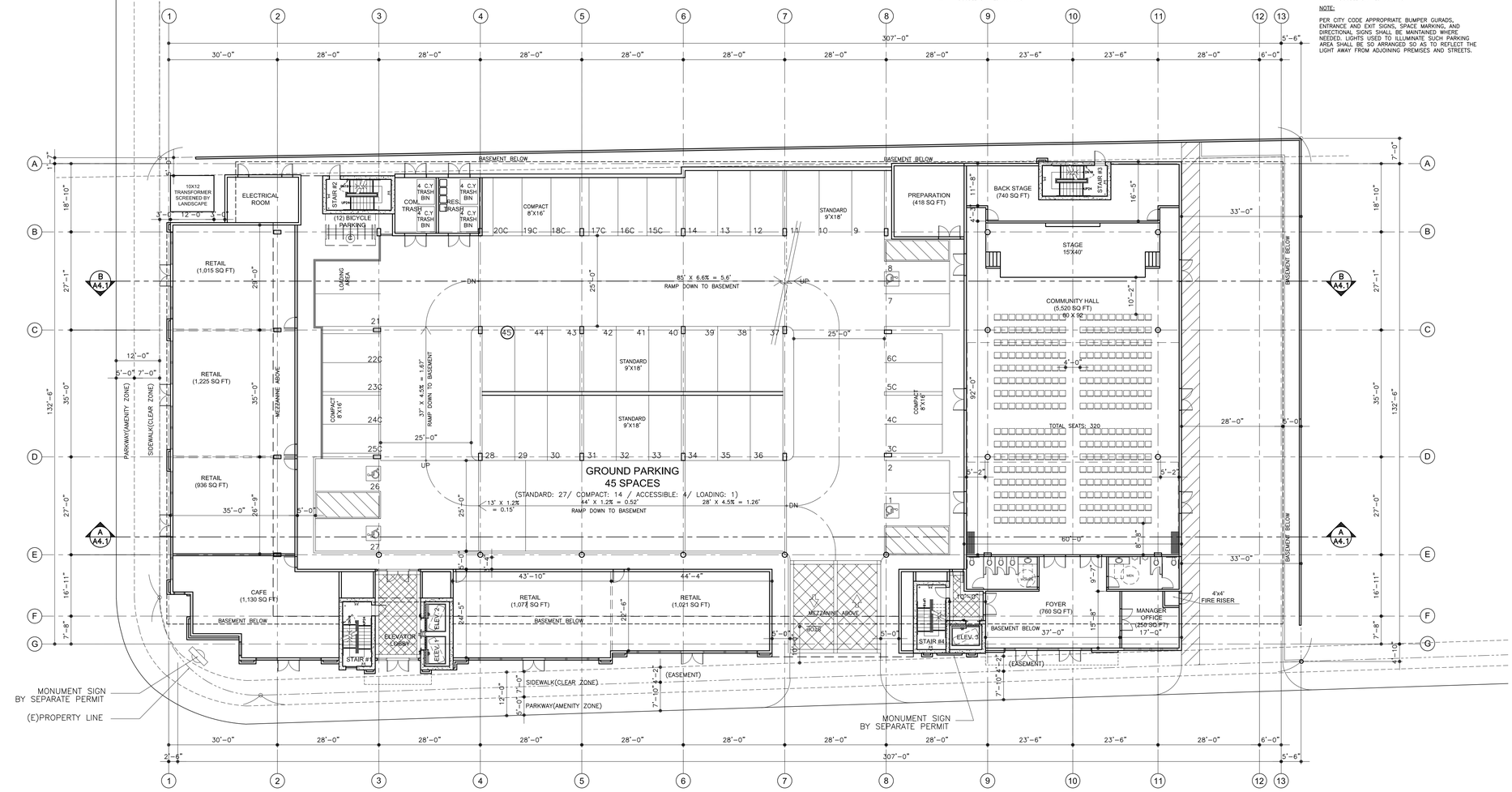
B COMPACT PARKING
DOUBLE STRIPED PARKING

CONTINUOUS CURBS AND/OR HEADERS SHALL BE USED INSTEAD OF INDIVIDUAL WHEEL STOPS, UNLESS OTHERWISE APPROVED.

A STANDARD PARKING
DOUBLE STRIPED PARKING

NOTE:

PER CITY CODE APPROPRIATE BUMPER GURADS, ENTRANCE AND EXIT SIGNS, SPACE MARKING, AND DIRECTIONAL SIGNS SHALL BE MAINTAINED WHERE NEEDED. LIGHTS USED TO ILLUMINATE SUCH PARKING AREA SHALL BE SO ARRANGED SO AS TO REFLECT THE LIGHT AWAY FROM ADJOINING PREMISES AND STREETS.



COMMERCIAL AREA:		
COMMUNITY HALL:	=	5,520 SF.
MANAGER OFFICE:	=	250 SF.
FOOD PLACE:	=	1,130 SF.
RETAILS:	=	5,274 SF.
TOTAL COMMERCIAL AREA:	=	12,174 SF.
(45) TOTAL RESIDENTIAL PARKING PROVIDED:		
9'X18' STANDARD PARKING	=	27 STALLS
9'X18' TOTAL 2% ACCESSIBLE PARKING	=	4 STALLS
8'X16' COMPACT PARKING	=	14 STALLS
TOTAL	=	45 STALLS
GROUND FLOOR PARKING AREA:	=	20,604 SF.

GROUND FLOOR PLAN
SCALE: 1/16" = 1'-0"

FILE: 190208PA1FLR20
DRAWN: P.Z.

ARCHITECT:
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140 W. VALLEY BLVD., STE 215, SAN GABRIEL, CA 91776
PH: 626•571•8000 E: simon.lee@slarch.com

PROJECT:
GARVEY WALNUT GROVE PLAZA
MIXED-USE DEVELOPMENT
8589 E. GARVEY AVE. +
3001 WALNUT GROVE AVE. ROSEMEAD, CA 91770

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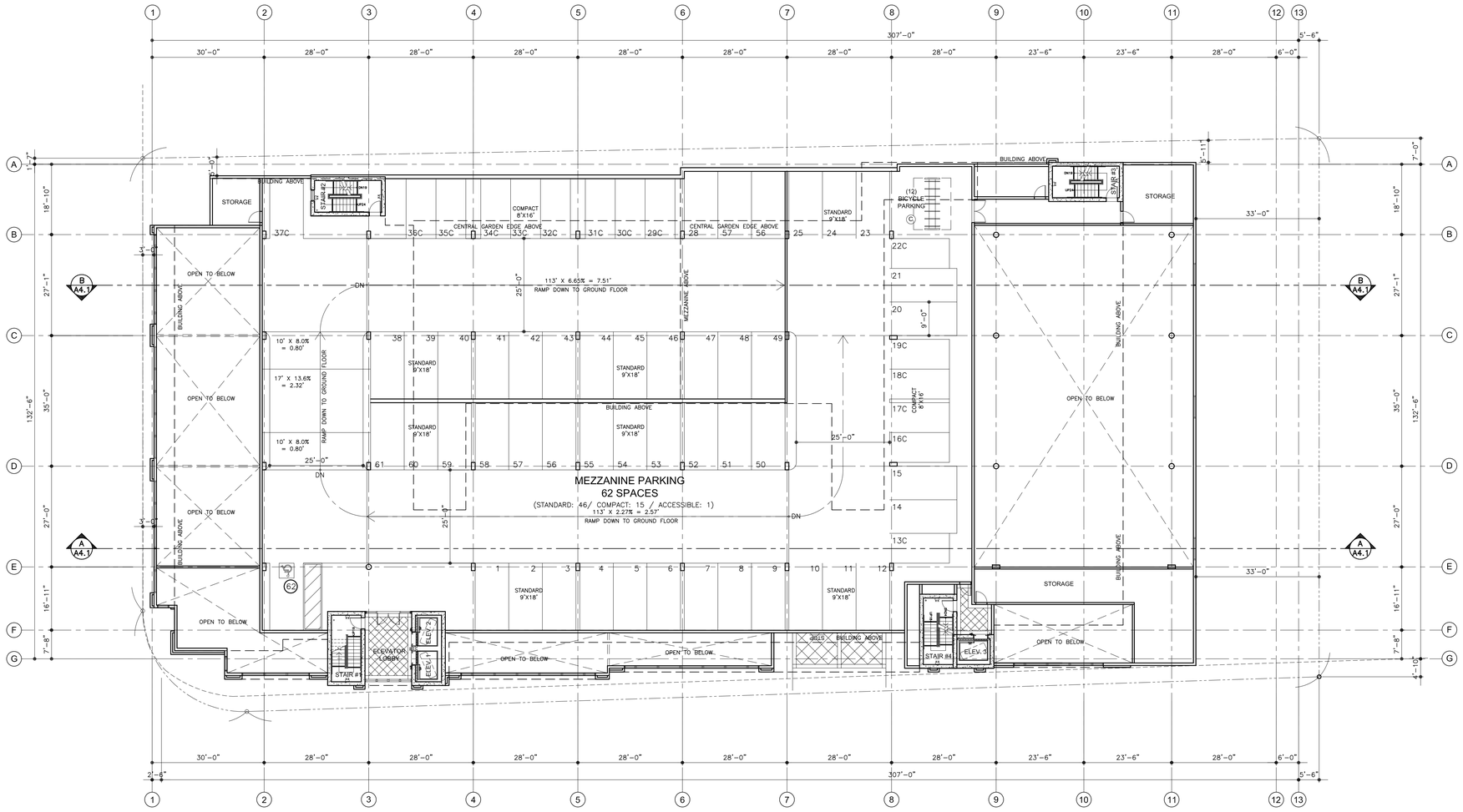

MAZZANINE PARKING AREA:	=	24,392 SF.
(62) TOTAL COMMERCIAL PARKING PROVIDED:		
9'X18' STANDARD PARKING	=	46 STALLS
9'X18' ACCESSIBLE PARKING	=	1 STALLS
8'X16' COMPACT PARKING	=	15 STALLS
TOTAL	=	64 STALLS
CLASS II BICYCLE RACKS	=	12 SPACES

MEZZANINE LEVEL PLAN

SCALE: 1/16" = 1'-0"

FILE: 190208PA1FLR20
DRAWN: P.Z.

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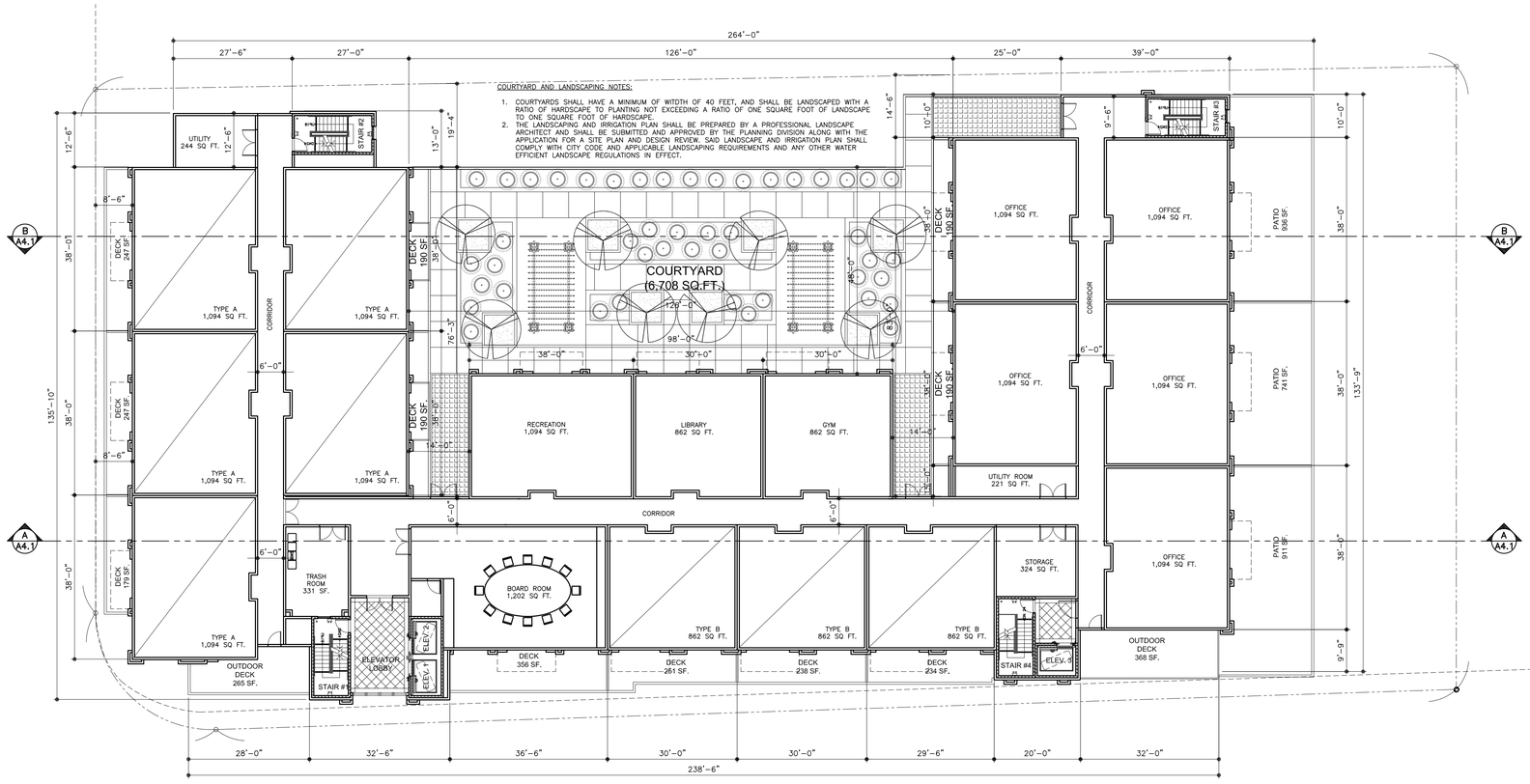

2ND FLOOR AREAS:

TYPE B:			
(OFFICE SUITES)	1,094 SF X 5U	=	5,470 SF.
	5U	=	5,470 SF.
FACILITIES:			
RECREATION ROOM		=	1,094 SF.
GYM		=	862 SF.
LIBRARY		=	862 SF.
		=	2,818 SF.
COMMON OPEN SPACE:			
CENTRAL COURTYARD		=	6,708 SF.
TYPE A:			
(2-BDRM / 2.5-BHRM)	1,094 SF X 5U	=	5,470 SF.
TYPE B:			
(1-BDRM / 1.5-BHRM)	862 SF X 3U	=	2,586 SF.
	8U	=	8,056 SF.
PRIVATE OPEN SPACE:			
OUTDOOR DECK		=	5,100 SF.
PUBLIC OPEN SPACE:		=	633 SF.

SECOND FLOOR PLAN

SCALE: 1/16" = 1'-0"

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FILE: 190208PA1FLR20
DRAWN: P.Z.

JOB NO: 190208

A-2.3

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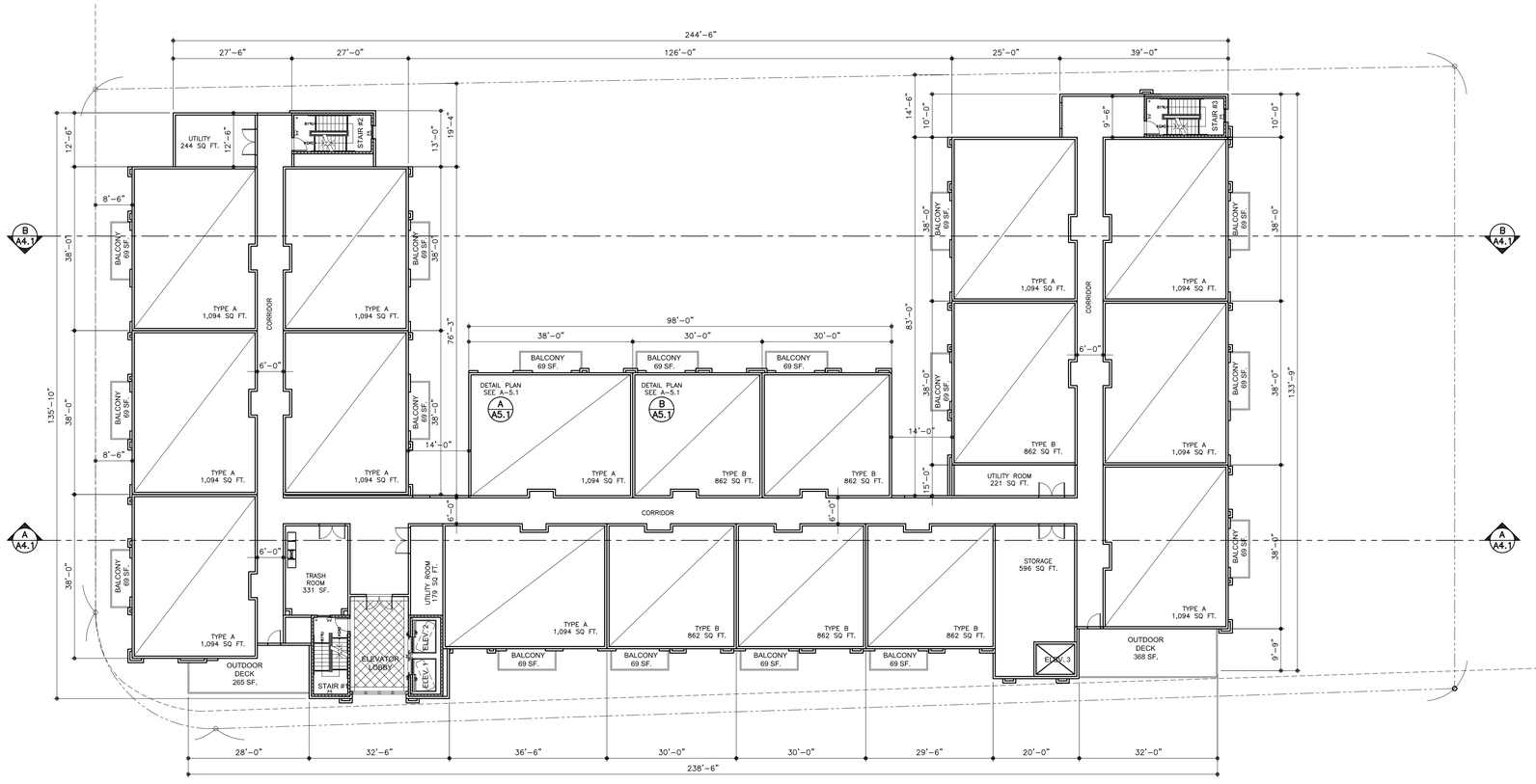

3RD FLOOR AREAS:

TYPE A:			
(2-BDRM / 2.5-BHRM)	1,094 SF X 12U	=	13,128 SF.
TYPE B:			
(1-BDRM / 1.5-BHRM)	862 SF X 5U	=	4,310 SF.
	17U	=	17,438 SF.
PRIVATE OPEN SPACE:			
OUTDOOR BALCONY	17 U X 69 SF.	=	1,173 SF.
PUBLIC OPEN SPACE:		=	633 SF.

THIRD FLOOR PLAN

SCALE: 1/16" = 1'-0"

FILE: 190208PA1FLR20
DRAWN: P.Z.

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No. C14526
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JOB NO: 190208

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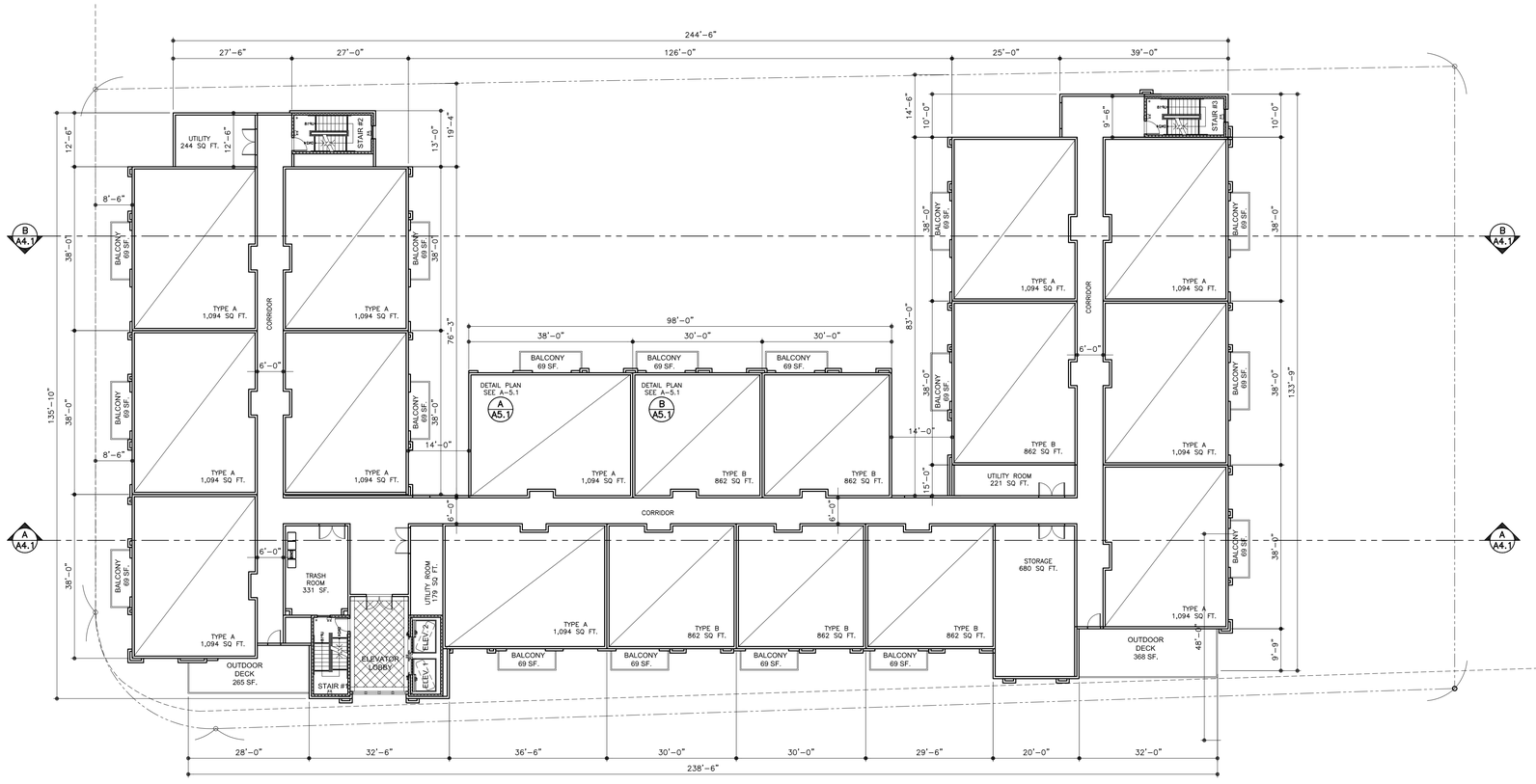

4TH FLOOR AREAS:

TYPE A:			
(2-BDRM / 2.5-BHRM)	1,094 SF X 12U	=	13,128 SF.
TYPE B:			
(1-BDRM / 1.5-BHRM)	862 SF X 5U	=	4,310 SF.
	17U	=	17,438 SF.
PRIVATE OPEN SPACE:			
OUTDOOR BALCONY	17 U X 69 SF.	=	1,173 SF.
PUBLIC OPEN SPACE:		=	633 SF.

FOURTH FLOOR PLAN

SCALE: 1/16" = 1'-0"

FILE: 190208PA1FLR20
DRAWN: P.Z.

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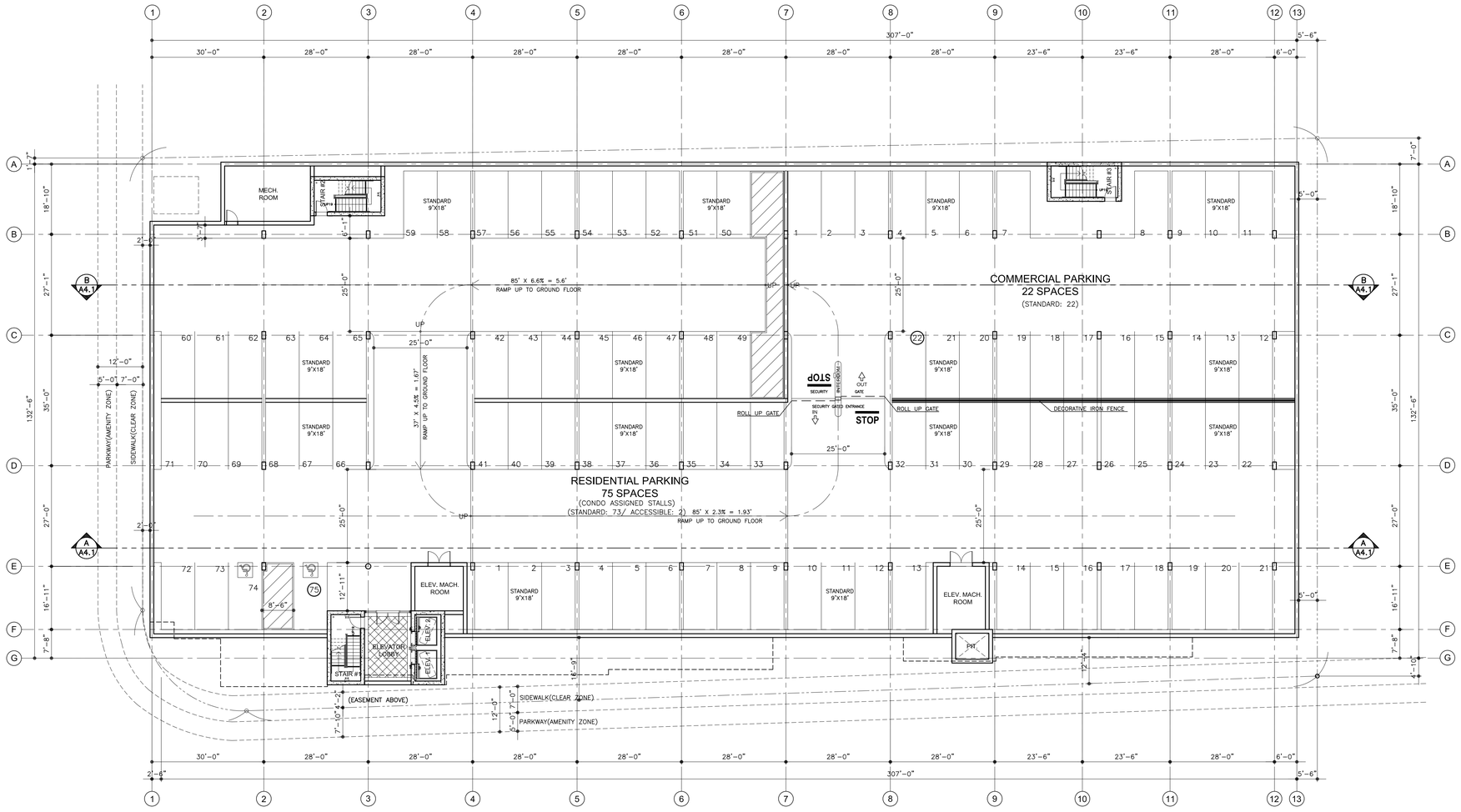

P-1 BASEMENT PARKING AREA:	=	38,480 SF.
(75) TOTAL RESIDENTIAL PARKING PROVIDED:		
9'X18' ASSIGNED STANDARD PARKING	=	73 STALLS
9'X18' TOTAL 2% ACCESSIBLE PARKING	=	2 STALLS
TOTAL	=	75 STALLS
(22) TOTAL COMMERCIAL PARKING PROVIDED:		
9'X18' ASSIGNED STANDARD PARKING	=	22 STALLS
TOTAL	=	22 STALLS

BASEMENT LEVEL PLAN

SCALE: 1/16" = 1'-0"

FILE: 190208PA1FLR20
DRAWN: P.Z.

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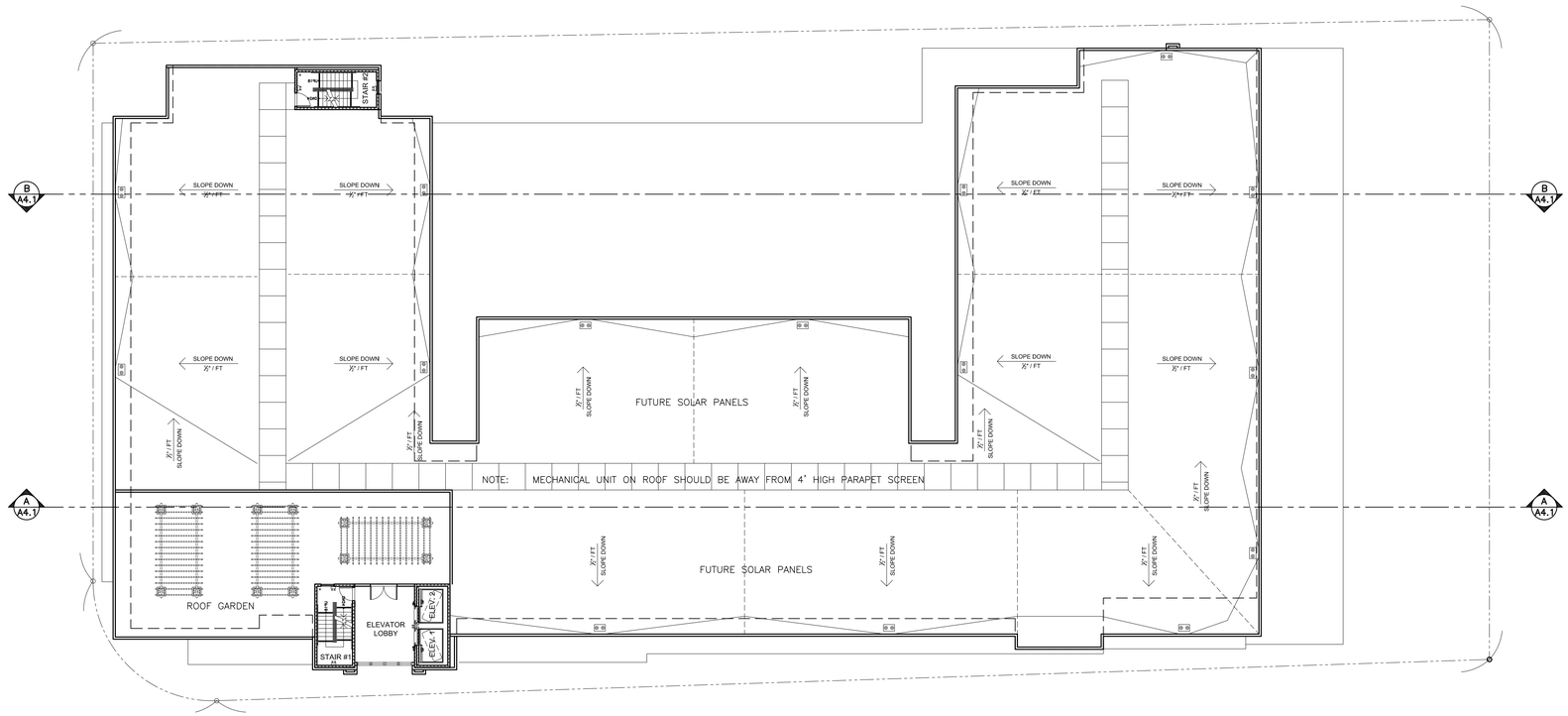

NOTES FOR SCREENING:
SCREENING SHALL BE PROVIDED IN THE FOLLOWING MANNER:

A. ROOFTOPS SHOULD BE DESIGNED IN A WAY THAT ACKNOWLEDGES THEIR VISIBILITY FROM OTHER BUILDINGS AND THE STREET. EQUIPMENT SHALL BE SCREENED ON ALL FOUR SIDES FROM BOTH THE STREET AND NEIGHBORING BUILDINGS USING PARAPETS OR SIMILAR ARCHITECTURAL FEATURES AND FROM THE TOP WHERE VISIBLE FROM AN ADJACENT BUILDING OF GREATER HEIGHT.

B. SERVICE AND LOADING ZONES WHERE VISIBILITY FROM PUBLIC STREETS AND VIEWS FROM NEIGHBORING BUILDINGS AND PROPERTIES SHALL BE SCREENED BY THE USE OF DECORATIVE WALLS AND/OR DENSE LANDSCAPING THAT WILL SERVE AS BOTH VISUAL AND NOISE BARRIER.

C. WALL-MOUNT EQUIPMENT SHALL BE FLUSH WITH THE EXTERIOR BUILDING WALLS AND PAINTED TO MATCH THE COLOR OF THE EXTERIOR OF THE BUILDING AND SCREENED FROM THE VIEW OF ANY PUBLIC RIGHT-OF-WAY. WINDOW-MOUNTED AIR CONDITIONERS OR EXTERIOR-MOUNTED FANS SHALL BE PROHIBITED.

D. GROUND-MOUNTED AND PAD-MOUNTED MECHANICAL OR UTILITY EQUIPMENT AND OTHER SUCH SIMILAR EQUIPMENT SHALL BE SCREENED FROM ALL PUBLIC RIGHT-OF-WAY AND ADJACENT PROPERTIES BY ARCHITECTURAL BUILDING FEATURES, FENCING OR LANDSCAPING.

NOTES FOR NOISE:
NOISE ABATMENT MEASURE ARE REQUIRED:

A. MECHANICAL EQUIPMENT SHALL BE SET BACK A MINIMUM OF FOUR FEET FROM ANY RESIDENTIAL PROPERTY LINE AND SHALL BE INSULATED TO PREVENT NOISE DISTURBANCE.
B. RESIDENTIAL PORTIONS OF THE PROJECT SHALL BE DESIGNED TO LIMIT THE INTERIOR NOISE CAUSED BY COMMERCIAL AND PARKING ELEMENTS OF THE DEVELOPMENT. PROPER DESIGN MAY INCLUDE, BUT SHALL NOT BE LIMITED TO, BUILDING ORIENTATION, DOUBLE-PANED OR EXTRA-STRENGTH WINDOWS, WALL AND CEILING INSULATION, AND ORIENTATION AND INSULATION OF VENTS.

WALL LEGEND:

X" / FT SLOPE DOWN — SLOPE DIRECTION

4"ø R.D. 4"ø O.D. — ROOF DRAINS

WOOD TRELLIS AND BENCHES

NORTH

ROOF PLAN

SCALE: 1/16" = 1'-0"

FILE: 190208PA1FLR20
DRAWN: P.Z.

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AUG 30, 2019

WEST ELEVATION

(VIEW FROM WALNUT GROVE AVE.)

SOUTH ELEVATION

(VIEW FROM GARVEY AVE.)

EXTERIOR FINISH SCHEDULE

SYMBOL	NAME	DESCRIPTION	COLOR	REMARKS
1	WALL STUCCO	SMOOTH W/ ELASTOMERIC PAINT	GRAY PEARL DEC795	BY "DUNN EDWARDS" OR EQ.
2	WALL STUCCO	SMOOTH W/ ELASTOMERIC PAINT	WHISPER DEW340	BY "DUNN EDWARDS" OR EQ.
3	WALL STUCCO	SMOOTH W/ ELASTOMERIC PAINT	SAHARA DEC747	BY "DUNN EDWARDS" OR EQ.
4	WALL STUCCO	SMOOTH W/ ELASTOMERIC PAINT	HOLLY BUSH DEA177	BY "DUNN EDWARDS" OR EQ.
5	METAL PANELS	METAL PANEL FIELD SEAMED	CADET GREY PVDF 2 – 25 GLOSS	BY "ALUCO–BOND" OR APPROVED EQUAL
6	WALL SIDING	COMPOSITE WOOD SIDING – VINTAGE	ASH MANU. FINISH	BY "NICHIHA FIBER CEMENT"
7	DOOR / WINDOW FRAME COMMERCIAL	ALUMN.	POWDER COATED WHITE COLOR	BY "MILGARD" OR EQ.
8	DOOR / WINDOW FRAME RESIDENTIAL	ALUMN.	POWDER COATED WHITE COLOR	BY "MILGARD" OR EQ.
9	GLAZING COMMERCIAL	DUAL GLAZING	CLEAR LOW E GLASS	BY "MILGARD" OR EQ.
10	GLAZING RESIDENTIAL	DUAL GLAZING	CLEAR LOW E GLASS	BY "MILGARD" OR EQ.
11	CMU WALL	SPLIT–FACE	GREY	BY "MILGARD" OR EQ.
12	TRELLIS	WOOD	–	BY "DUNN EDWARDS" OR EQ.
13	SIGNAGE	SURFACE MOUNTED	PER MASTER SIGN PROGRAM	SEPARATE PERMIT
14	ALUMN. GLASS RAILING	ALUMINUM / PAINT FINISH	MANUFACTURER COLOR SILVER GRAY	BY "HANSEN" OR EQ
15	METAL CAP	METAL PANEL FIELD SEAMED	–	BY "ALUCO–BOND" OR APPROVED EQUAL
16	CANOPY COMMERCIAL	ALUMINUM /	WHISPER GRAY	
17	WALL PANELS COMMERCIAL	METAL PANEL FIELD SEAMED	HARVEST GOLD MICA PVDF 2 – 25 GLOSS	BY "ALUCO–BOND" OR APPROVED EQUAL

ELEVATIONS

SCALE: 1/16" = 1'–0"

FILE: 190208PA1ELE30
DRAWN: P.Z.

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No. C 14526
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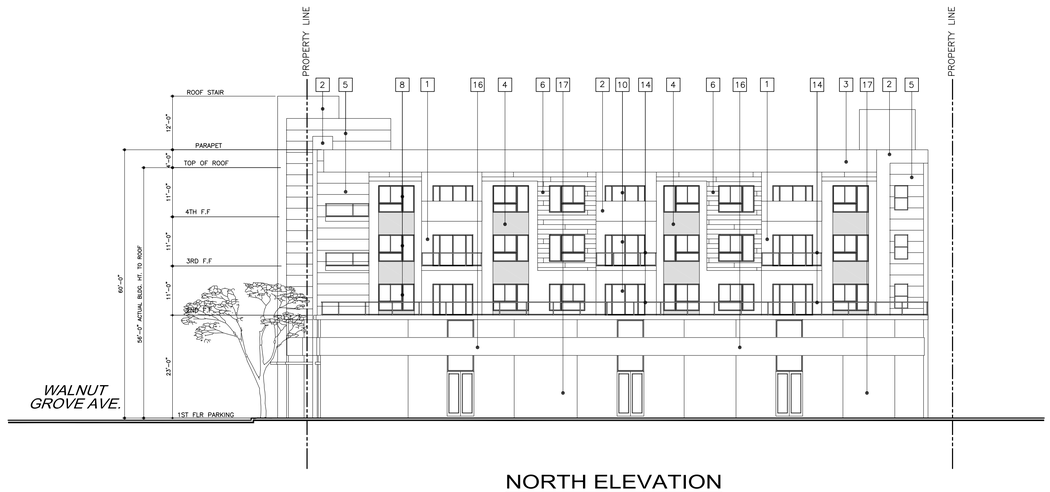
EAST ELEVATION



NORTH ELEVATION

EXTERIOR FINISH SCHEDULE

SYMBOL	NAME	DESCRIPTION	COLOR	REMARKS
1	WALL STUCCO	SMOOTH W/ ELASTOMERIC PAINT	GRAY PEARL DEC795	BY "DUNN EDWARDS" OR EQ.
2	WALL STUCCO	SMOOTH W/ ELASTOMERIC PAINT	WHISPER DEW340	BY "DUNN EDWARDS" OR EQ.
3	WALL STUCCO	SMOOTH W/ ELASTOMERIC PAINT	SAHARA DEC747	BY "DUNN EDWARDS" OR EQ.
4	WALL STUCCO	SMOOTH W/ ELASTOMERIC PAINT	HOLLY BUSH DEA177	BY "DUNN EDWARDS" OR EQ.
5	METAL PANELS	METAL PANEL FIELD SEAMED	CADET GREY PVDF 2 – 25 GLOSS	BY "ALUCO–BOND" OR APPROVED EQUAL
6	WALL SIDING	COMPOSITE WOOD SIDING – VINTAGE	ASH MANU. FINISH	BY "NICHIHA FIBER CEMENT"
7	DOOR / WINDOW FRAME COMMERCIAL	ALUMN.	POWDER COATED WHITE COLOR	BY "MILGARD" OR EQ.
8	DOOR / WINDOW FRAME RESIDENTIAL	ALUMN.	POWDER COATED WHITE COLOR	BY "MILGARD" OR EQ.
9	GLAZING COMMERCIAL	DUAL GLAZING	CLEAR LOW E GLASS	BY "MILGARD" OR EQ.
10	GLAZING RESIDENTIAL	DUAL GLAZING	CLEAR LOW E GLASS	BY "MILGARD" OR EQ.
11	CMU WALL	SPLIT–FACE	GREY	BY "MILGARD" OR EQ.
12	TRELLIS	WOOD	–	BY "DUNN EDWARDS" OR EQ.
13	SIGNAGE	SURFACE MOUNTED	PER MASTER SIGN PROGRAM	SEPARATE PERMIT
14	ALUMN. GLASS RAILING	ALUMINUM / PAINT FINISH	MANUFACTURER COLOR SILVER GRAY	BY "HANSEN" OR EQ
15	METAL CAP	METAL PANEL FIELD SEAMED	–	BY "ALUCO–BOND" OR APPROVED EQUAL
16	CANOPY COMMERCIAL	ALUMINUM /	WHISPER GRAY	
17	WALL PANELS COMMERCIAL	METAL PANEL FIELD SEAMED	HARVEST GOLD MICA PVDF 2 – 25 GLOSS	BY "ALUCO–BOND" OR APPROVED EQUAL

ELEVATIONS
SCALE: 1/16" = 1'–0"

FILE: 190208PA1ELE30
DRAWN: P.Z.

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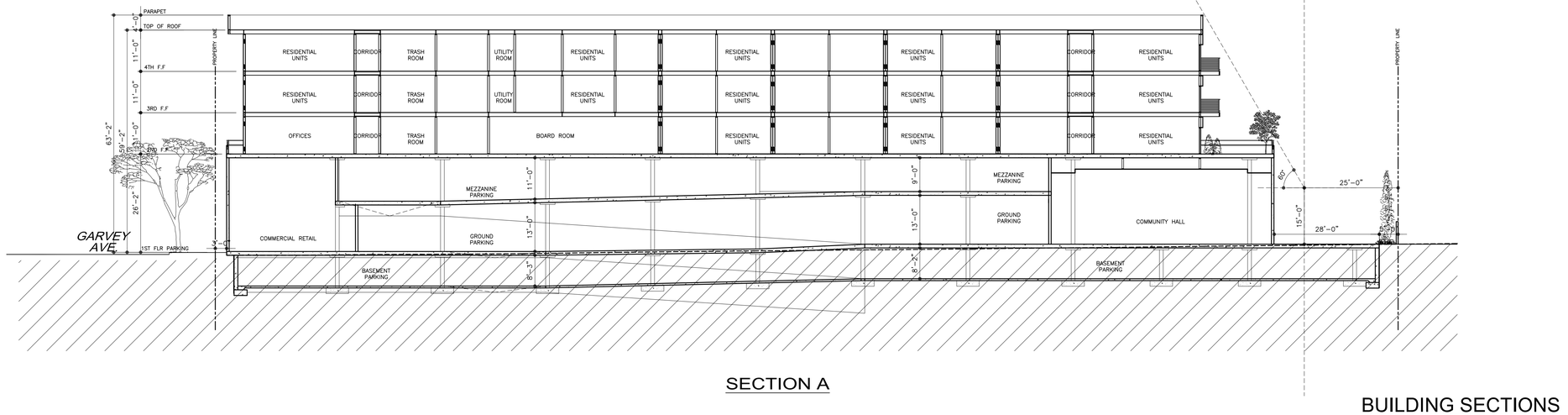
A-3.2

AUG 30, 2019

SECTION B



SECTION A

BUILDING SECTIONS

SCALE: 1/16" = 1'-0"

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FILE: 190208PA1SEC40
DRAWN: P.Z.
JOB NO: 190208

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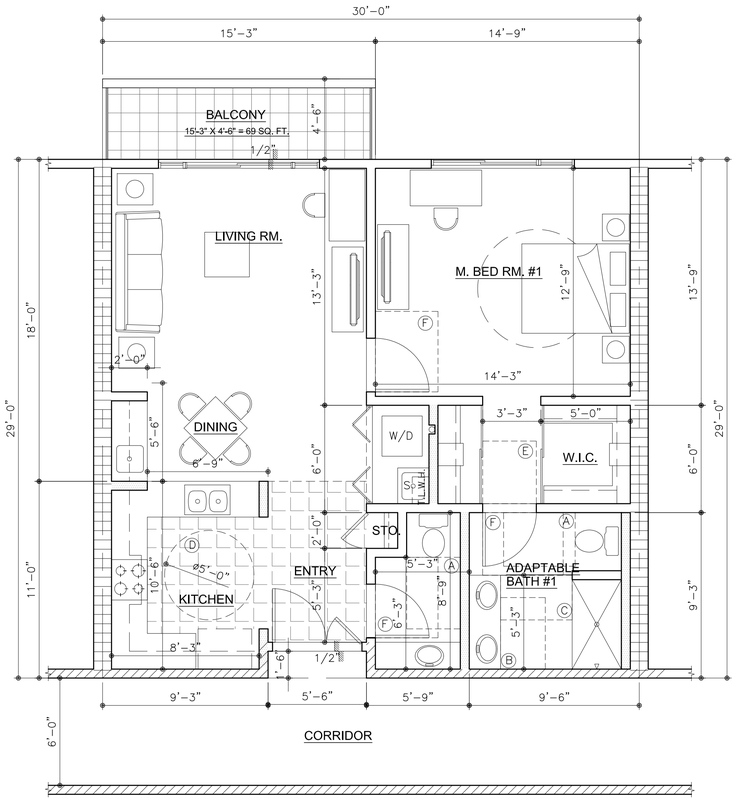
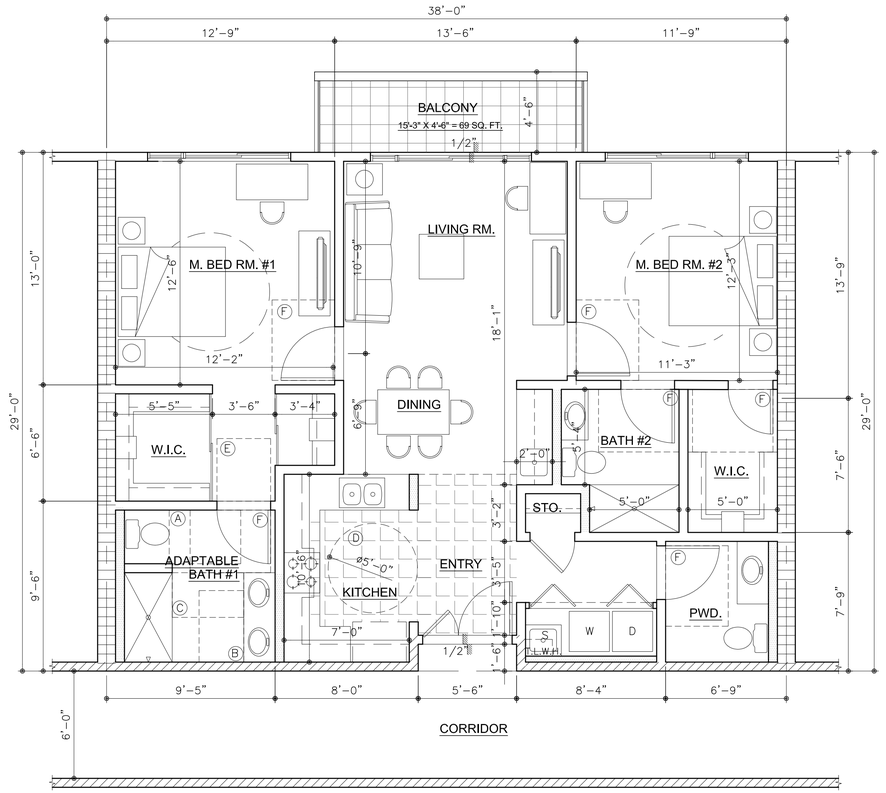


1 BEDROOM TYPE: B
(862 SQ. FT.)



2 BEDROOM TYPE: A
(1,094 SQ. FT.)

ABBREVIATION:

W/D	WASHER AND DRYER
T.L.W.H.	TANKLESS WATER HEATER
G.D.	GARBAGE DISPOSAL
W.I.C	WALK IN CLOSET
PWD.	POWDER ROOM
STO.	STORAGE

FLOOR SPACE REQUIREMENT:

- (A) 36" X 48" TOILET ACCESS
- (B) 30" X 48" TUB ACCESS
  30" X 48" SHOWER ACCESS
- (C) 30" X 48" LAVATORY ACCESS
- (D) 60" DIA ACCESS
- (E) 42" X 36" DOOR MANUVERING CLEARANCE
- (F) 42" X 54" AT PULL SIDE

WALL LEGEND:

- 1-HR RATED CORRIDOR WALL
- 1-HR RATED OCCUPANCY SEPARATION WALL
- 1-HR RATED WOOD STUD WALL
- 6" PLUMBING WALL

TYPICAL UNIT PLAN

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

FILE: 190208PA1SEC41
DRAWN: P.Z.

ARCHITECT:
S L A
ARCHITECTS
140 W. VALLEY BLVD., STE 215, SAN GABRIEL, CA 91776
PH: 626•571•8000
E: simon.lee@slarch.com

PROJECT:
GARVEY WALNUT GROVE PLAZA
MIXED-USE DEVELOPMENT
8589 E. GARVEY AVE. +
3001 WALNUT GROVE AVE. ROSEMEAD, CA 91770

LICENSED ARCHITECT
SIMON DONG-TSAIR LEE
No. C 14526
Ren. 11-30-19
STATE OF CALIFORNIA

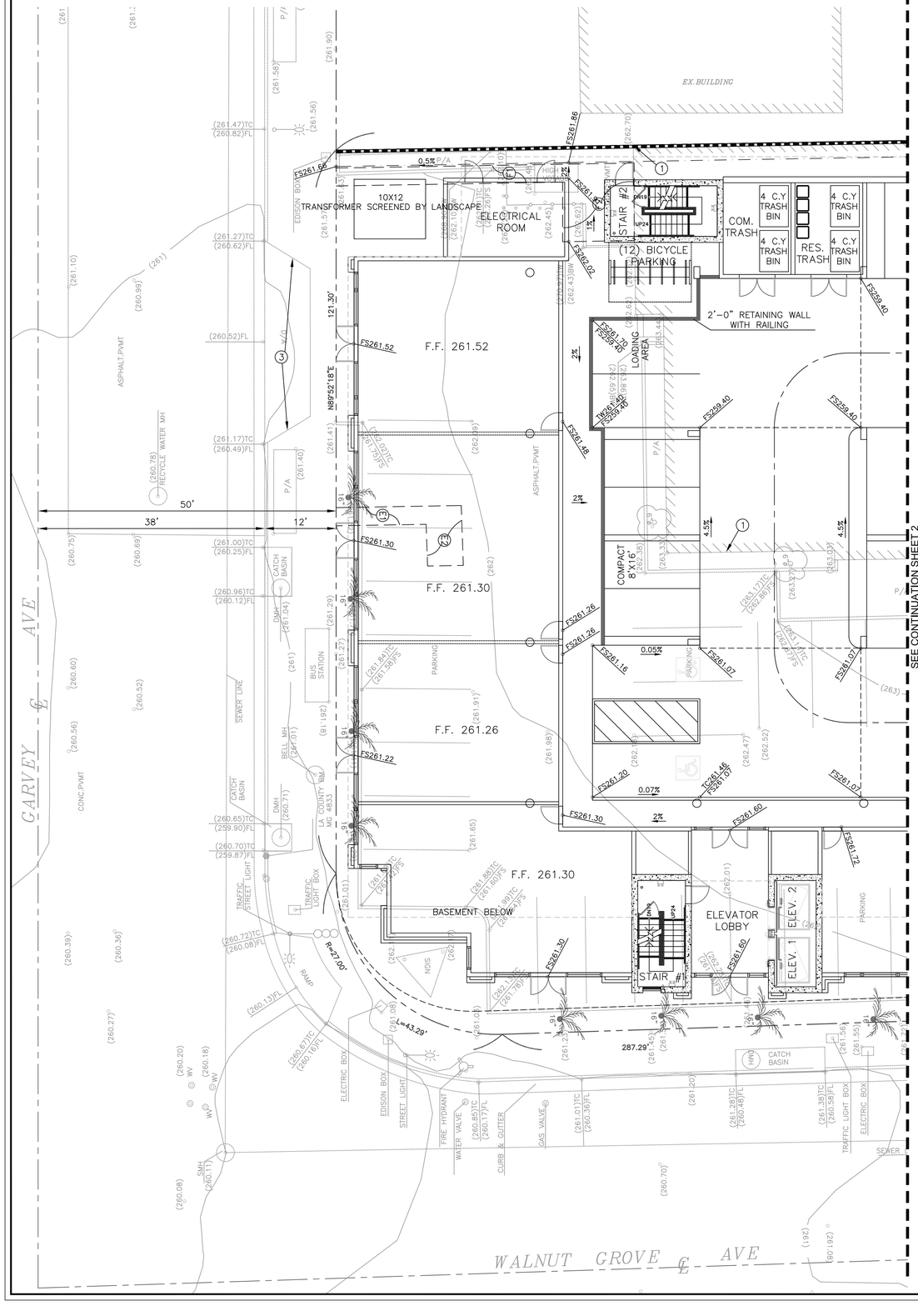
JOB NO: 190208

A-5.1

AUG 30, 2019

CONCEPTUAL GRADING PLAN

A PORTION OF LOTS 27 AND 28 OF TRACT 3706, IN THE CITY OF ROSEMEAD, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 40, PAGE 39, OF MAPS, IN THE COUNTY RECORDER OFFICE OF SAID COUNTY.
APN: 5390-002-040, 041, 042, & 043
TR82870



LEGEND:

(527.63)	EXISTING ELEVATION
520.00	PROPOSED ELEVATION
--(530)--	EXISTING COUNTOUR
	DRAINAGE PATTERN
	PROPOSED STRUCTURE
	PROPOSED 6' BLOCK WALL
SW	SIDE WALK
	LIGHT
	CENTER LINE
	PROPERTY LINE
(9)	CONSTRUCTION NOTES
	SANDBAG LINE

T.C.	TOP OF CURB
F.L.	FLOW LINE
F.G.	FINISH GRADE
F.S.	FINISH SURFACE
F.F.	FLOOR FINISH
H.P.	HIGH POINT
P.P.	POWER POLE
D/W	DRIVEWAY
W.M.	WATER METER
INV.	INVERT ELEVATION
T.G.	TOP OF GRATE
D.S.	DOWNSPOUT
	LANDCAPE AREA

CIVIL ENGINEER:

CALLAND ENGINEERING, INC.
576 E. LAMBERT RD.,
BREA, CA 92821
TEL. NO.: (714) 671-1050
JACK LEE, R.C.E., G.E.

OWNER:

TAIWAN CENTER / MR. ALAN THIAN,
C/O: RICHARD CHEN
CELL: 626-536-2268
richchen@sbcglobal.com

BASIS OF BEARING:

CENTERLINE OF WALNUT GROVE AVE N 01°05'50" W PER TRACT NO.40720 M.B.994/80-81

BENCHMARK:

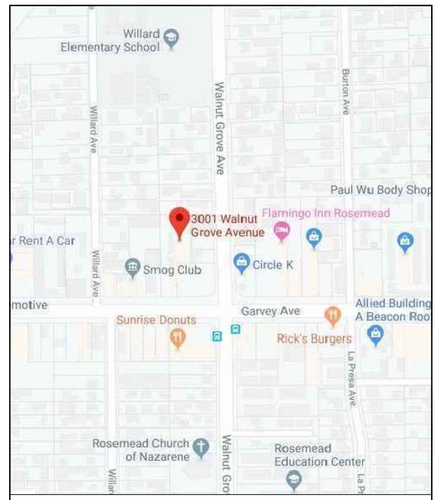
BENCHMARK NO. MG 4833

DPW BM TAG IN N CB 3 FT W/O BCR @ NW COR GARVEY AVE & WALNUT GROVE.

ELEVATION: 260.711'

NOTE:

EX. LOT:	4
PROP. LOT:	1
ZONING:	C-3
PROP. UNIT:	42 UNIT RESIDENTIAL AND 12 COMMERCIAL UNITS
LOT SIZE:	46059.06 SF/1.057 AC
SEWERAGE DISPOSAL:	BY GRAVITY SEWER PIPES TO STREET MAIN.



VICINITY MAP

NORTH

CONSTRUCTION NOTES:

1. EXISTING STRUCTURE TO BE REMOVED
2. EXISTING TREE TO BE REMOVED
3. EXISTING DRIVEWAY APPROACH TO BE REMOVED
4. PROPOSED DRIVEWAY APPROACH
5. PROPOSED DRAINAGE PIPE
6. PROPOSED CATCH BASIN
7. PROPOSED PARKWAY DRAIN
8. PROPOSED SUMP PUMP
9. PROPOSED INFILTRATION DRY WELL PER LID REQUIREMENT
10. PROPOSED WATER TANK
11. PROPOSED AREA DRAIN
12. PROPOSED BLOCK WALL WITH 3' H MAX RETAINING

0 10 20
(IN FEET)
1 inch = 10 ft.

REGISTERED PROFESSIONAL ENGINEER
JACK C. S. LEE
40870
Exp. 3-31-21
CIVIL
STATE OF CALIFORNIA

GROUND FLOOR

CAL LAND ENGINEERING, INC.
dba QUARTECH CONSULTANTS
576 E. LAMBERT ROAD, BREA, CA 92821
TEL: (714) 671-1050 FAX: (714) 671-1090

PROJECT LOCATION:
8589 GARVEY AVE. AND 3001 WALNUT GOVE AVE.
ROSEMEAD, CA 91770

DRAWN:	A.S.
CHECKED:	
DATE:	08/29/2019
JOB. NO.:	19-221-001
SCALE:	1" = 10'
FILE NAME:	

C-1

SHEET 1 OF 4

GROUND FLOOR

SEE CONTINUATION SHEET 1

EX.BUILDING

EX.BUILDING

N01°05'50"W (264.49) 315.06'

BASEMENT BELOW 0.6% BASEMENT BELOW 0.6%

4 C.Y TRASH BIN

4 C.Y TRASH BIN

E.S. TRASH

COMPACT 8'X16'

STANDARD 9'X18'

STAIR #3

F.F. 263.36

BASEMENT DECK

BASEMENT BELOW

DOWN TO BASEMENT SEE SHEET 3 AND 4

UP TO MAZZANINE PER BUILDING PLAN

EX.BUILDING

CONC.WALK WAY.

RAMP

STANDARD 9'X18'

STANDARD 9'X18'

COMPACT 8'X16'

FIRE LANE

F.F. 263.36

EX.BUILDING

P/A

PARKING

CONC.PVMT

F.F. 263.36

EX.HOUSE

CONNECT TO BASEMENT CATCH BASIN

F.F. 261.76

BASEMENT BELOW

F.F. 262.33

PARKING

ASPHALT PVMT

CONC.PVMT

DROP INLET

F.F. 263.36

BASEMENT BELOW

4'x4' FIRE RISER

FROM BASEMENT PUMP

PRO. ROW EASEMENT

N01°59'10"W 287.29'

CONC.SIDE WALK.

CONC.SIDE WALK.

SEWER LINE

WATER VALVE

TRAFFIC LIGHT BOX

ELECTRIC BOX

ELECTRIC BOX

GUYWIRE

EDISON MH

WATER METER

POWER POLE

SMH

SINGN BOX

N 89°52'17" E 144.30'

40'

32'

WALNUT GROVE AVE

LEGEND:

(527.63)	EXISTING ELEVATION
520.00	PROPOSED ELEVATION
--(530)--	EXISTING COUNTOUR
	DRAINAGE PATTERN
	PROPOSED STRUCTURE
	PROPOSED 6' BLOCK WALL
SW	SIDE WALK
	LIGHT
	CENTER LINE
	PROPERTY LINE
9	CONSTRUCTION NOTES
	SANDBAG LINE

T.C.	TOP OF CURB
F.L.	FLOW LINE
F.G.	FINISH GRADE
F.S.	FINISH SURFACE
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H.P.	HIGH POINT
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D/W	DRIVEWAY
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D.S.	DOWNSPOUT
	LANDCAPE AREA

CONSTRUCTION NOTES:

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0 10 20

(IN FEET)
1 inch = 10 ft.

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PROJECT LOCATION:
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ROSEMEAD, CA 91770

DRAWN:	A.S.
CHECKED:	
DATE:	08/29/2019
JOB. NO.:	19-221-001
SCALE:	1" = 10'
FILE NAME:	

C-2

SHEET 2 OF 4

CONCEPTUAL GRADING PLAN

A PORTION OF LOTS 27 AND 28 OF TRACT 3706, IN THE CITY OF ROSEMEAD, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 40, PAGE 39, OF MAPS, IN THE COUNTY RECORDER OFFICE OF SAID COUNTY.
APN: 5390-002-040, 041, 042, & 043
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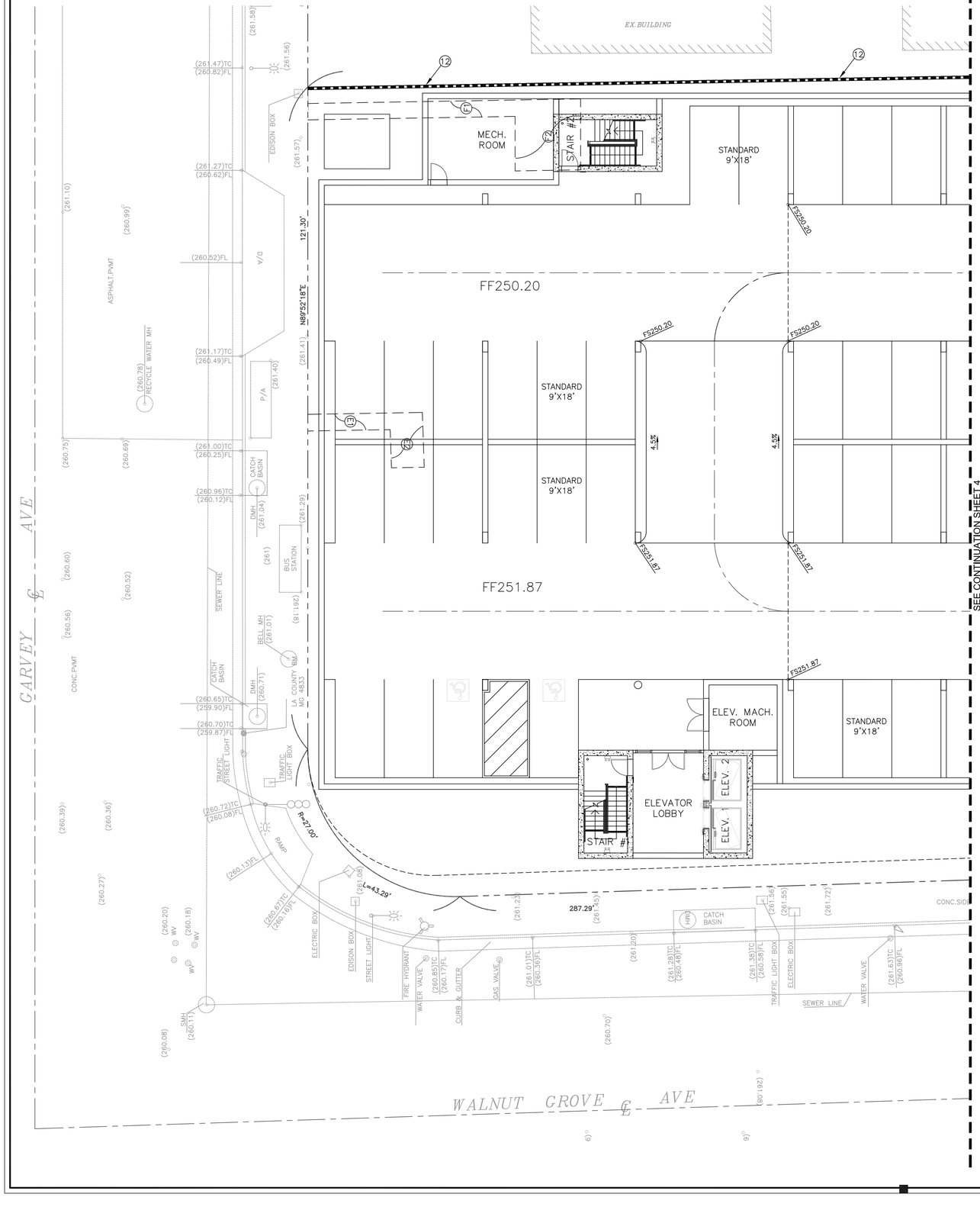

LEGEND:

(527.63).....EXISTING ELEVATION
520.00.....PROPOSED ELEVATION
--(530)--.....EXISTING COUNTOUR
.....DRAINAGE PATTERN
.....PROPOSED STRUCTURE
.....PROPOSED 6' BLOCK WALL
SW.....SIDE WALK
.....LIGHT
.....CENTER LINE
.....PROPERTY LINE
(9).....CONSTRUCTION NOTES
.....SANDBAG LINE

T.C.....TOP OF CURB
F.L.....FLOW LINE
F.G.....FINISH GRADE
F.S.....FINISH SURFACE
F.F.....FLOOR FINISH
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BASIS OF BEARING:

CENTERLINE OF WALNUT GROVE AVE N 01°05'50" W PER TRACT NO.40720 M.B.994/80-81

BENCHMARK:

BENCHMARK NO. MG 4833

DPW BM TAG IN N CB 3 FT W/O BCR @ NW COR GARVEY AVE & WALNUT GROVE.

ELEVATION: 260.711'

NOTE:

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PROP. LOT:	1
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PROP. UNIT:	42 UNIT RESIDENTIAL AND 12 COMMERCIAL UNITS
LOT SIZE:	46059.06 SF/1.057 AC
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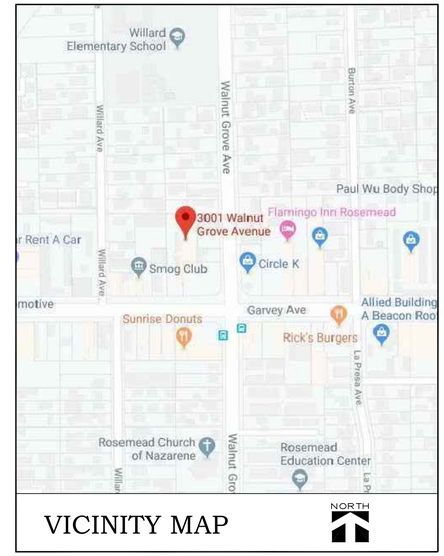


VICINITY MAP

NORTH

0 10 20
(IN FEET)
1 inch = 10 ft.

REGISTERED PROFESSIONAL ENGINEER
JACK C. S. LEE
40870
Exp. 3-31-21
CIVIL
STATE OF CALIFORNIA

BASEMENT

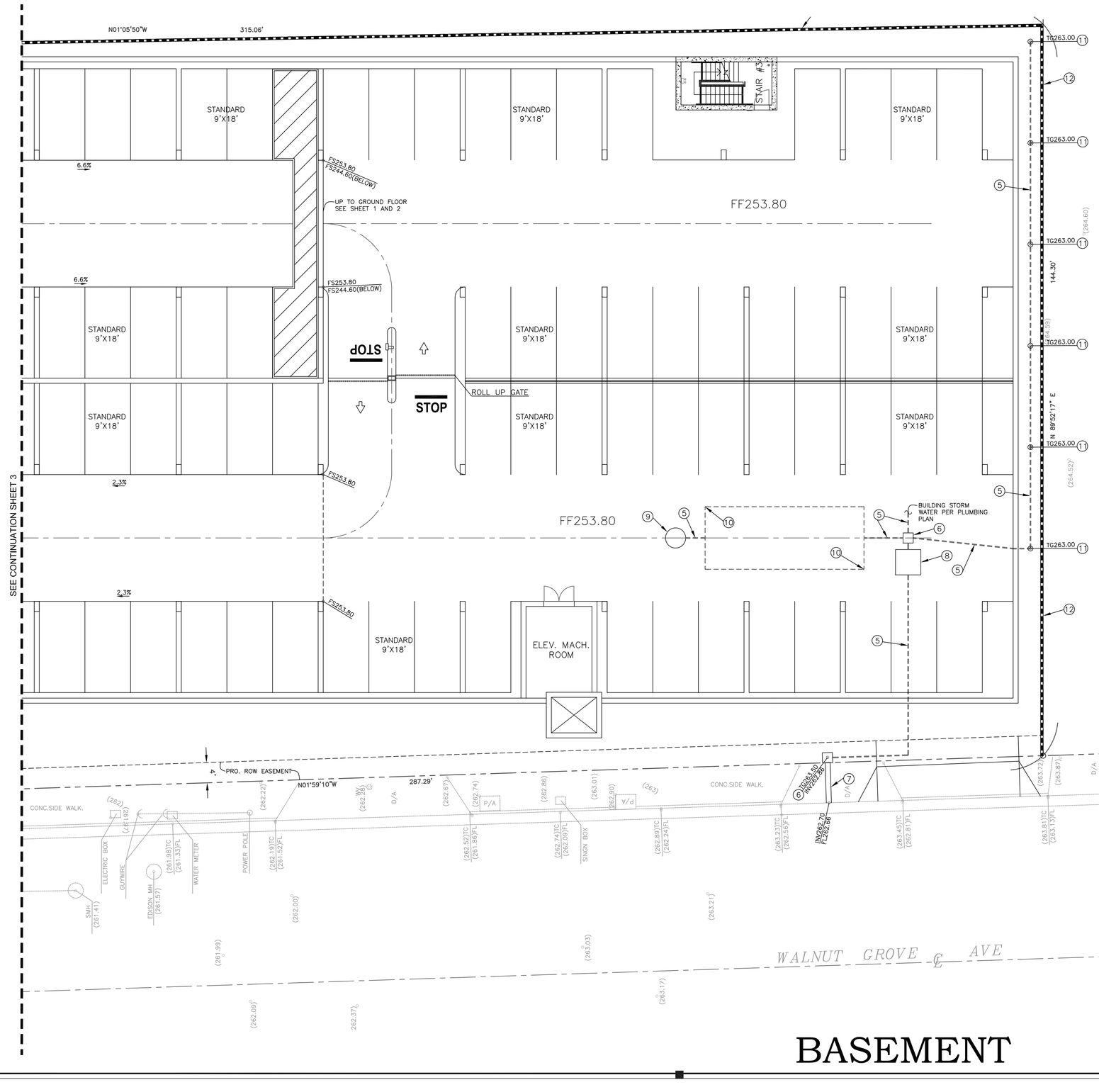
CAL LAND ENGINEERING, INC.
dba QUARTECH CONSULTANTS
576 E. LAMBERT ROAD, BREA, CA 92821
TEL: (714) 671-1050 FAX: (714) 671-1090

PROJECT LOCATION:
8589 GARVEY AVE. AND 3001 WALNUT GOVE AVE.
ROSEMEAD, CA 91770

DRAWN: A.S.
CHECKED:
DATE: 08/29/2019
JOB. NO.: 19-221-001
SCALE: 1" = 10'
FILE NAME:

C-3

SHEET 3 OF 4



BASEMENT

LEGEND:

(527.63)	EXISTING ELEVATION
520.00	PROPOSED ELEVATION
--(530)--	EXISTING COUNTOUR
	DRAINAGE PATTERN
	PROPOSED STRUCTURE
	PROPOSED 6' BLOCK WALL
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	LANDCAPE AREA

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11. PROPOSED AREA DRAIN
12. PROPOSED BLOCK WALL WITH 3' H MAX RETAINING

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(IN FEET)
1 inch = 10 ft.

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TEL: (714) 671-1050 FAX: (714) 671-1090

REGISTERED PROFESSIONAL ENGINEER
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Exp. 3-31-21
CIVIL
STATE OF CALIFORNIA

PROJECT LOCATION:
8589 GARVEY AVE. AND 3001 WALNUT GOVE AVE.
ROSEMEAD, CA 91770

DRAWN:	A.S.
CHECKED:	
DATE:	08/29/2019
JOB. NO.:	19-221-001
SCALE:	1" = 10'
FILE NAME:	

C-4

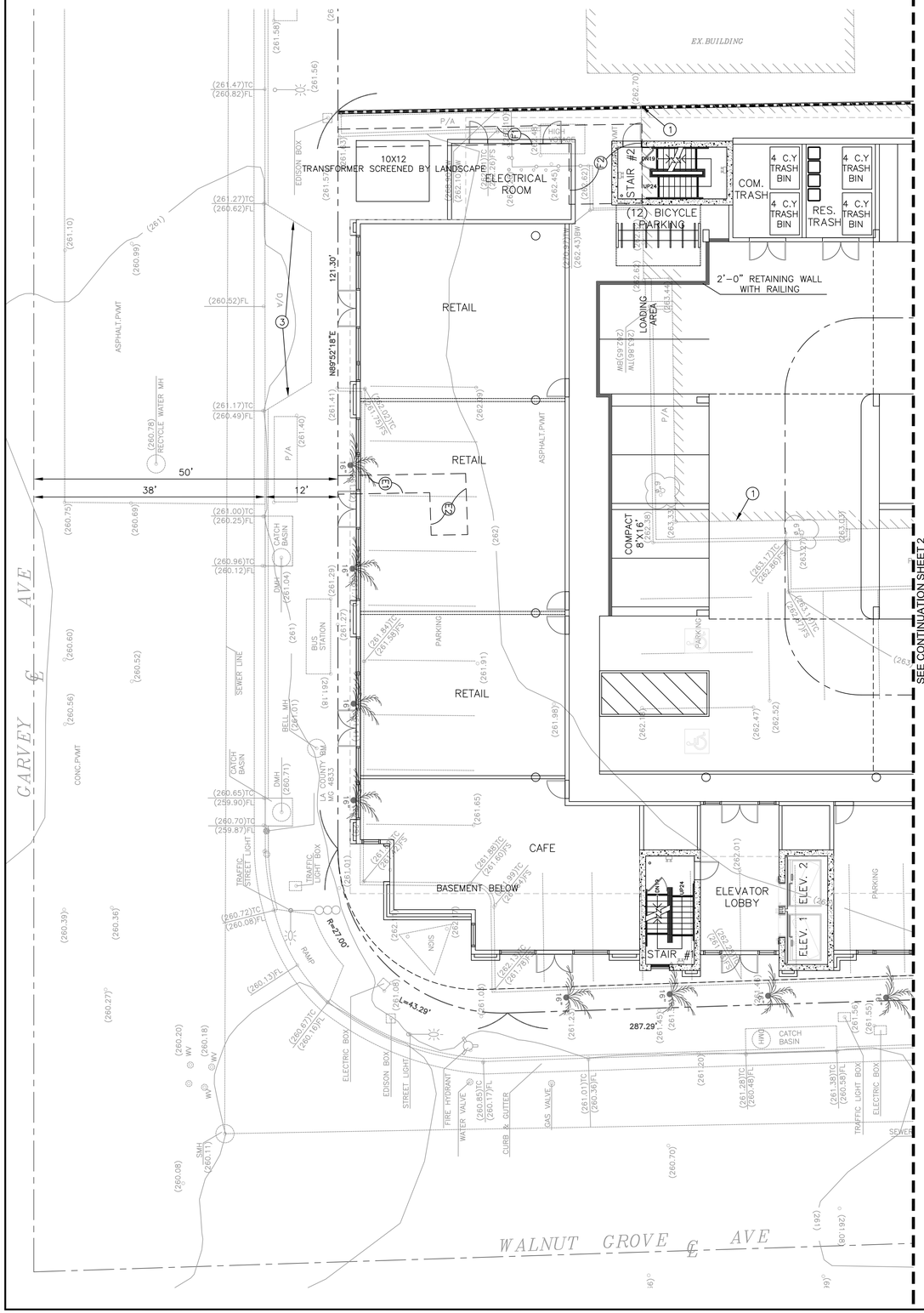
SHEET 4 OF 4

TENTATIVE TRACT MAP NO. 82870

LOCATED IN THE CITY OF ROSEMEAD,
COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

A PORTION OF LOTS 27 AND 28 OF TRACT 3706, IN THE CITY OF ROSEMEAD, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 40, PAGE 39, OF MAPS, IN THE COUNTY RECORDER OFFICE OF SAID COUNTY.
APN: 5390-002-040, 041, 042, & 043

FOR CONDOMINIUM PURPOSES



INFORMATION SUMMARY:

1. PROJECT: GARVEY WALNUT GROVE MIXED-USE
   8589 GARVEY AVE. + 3001 WALNUT GROVE AVE. ROSEMEAD CA 91770
   (ALL EXISTING BUILDINGS WILL BE DEMOLISHED UNDER THE SCOPE OF WORK)

2. OWNER: TAIWAN CENTER / MR. ALAN THIAN, PRESIDENT
   C/O: RICHARD CHEN CELL: 626-536-2268
   EMAIL: richchen@sbcglobal.com

3. LEGAL DESCRIPTION: A.P.N.: 5288-001-040, 041, 042, 043

4. LOT SIZE: 46059.06 SF/1.057 AC

5. ZONING: EXISTING: C-3 MEDIUM COMMERCIAL

   PROPOSED: C-3D (MEDIUM COMMERCIAL WITH A DESIGN OVERLAY) & RC-MUDO (RESIDENTIAL COMMERCIAL MIXED-USE DESIGN OVERLAY)
   MIXED USE: RESIDENTIAL/COMMERCIAL (30 DU/AC; 3 STORIES)

6. RESIDENTIAL DENSITY:

PROPOSED DENSITY:	30 DU/AC	
30 DU/AC X 1.06 AC (LOT SIZE)	= 31.8-U (BASE UNITS)	
31.8-U X 1.35 (DENSITY BONUS)	= 42.9-U (PROPOSED 42-U CONDOS.)	
31.8-U X 0.20 (AFFORDABLE UNITS)	= *6.36-U (7 LOW-INCOME UNITS.)	

*PROPOSED 20% LOW-INCOME UNITS FOR 35% DENSITY BONUS

7. BUILDING HEIGHT/STORY: 63'-2"/ 4-STORY

8. CODE: 2017 LA COUNTY AMENDMENTS TO 2016 CALIFORNIA BUILDING, PLUMBING, MECHANICAL, ELECTRICAL, & GREEN BUILDING CODE

9. OCCUPANCY GROUP: R-2 FOR RESIDENTIAL CONDOMINIUM
   B FOR OFFICES
   M FOR RETAILS / SERVICES
   A-2 FOR FOOD PLACES / COFFEE SHOP
   A-3 FOR COMMUNITY HALL
   S-2 FOR PARKING GARAGE

10. TYPE OF CONSTRUCTION: 3-STORIES TYPE V-A FOR RESIDENTIAL CONDOMINIUMS OVER 1-STORY TYPE I-A FOR GROUND FLOOR COMMERCIAL WITH MEZZANINE LEVEL AND 1-LEVEL BASEMENT PARKING.
    (FULLY FIRE SPRINKLERED SYSTEM)

11. FLOOR AREA:

RESIDENTIAL:	4TH FLOOR	(CONDO UNITS)	17U	17,438 SF.
	3RD FLOOR	(CONDO UNITS)	17U	17,438 SF.
	2ND FLOOR	(CONDO UNITS)	8U	8,056 SF.
		(RECREATION, GYM, LIBRARY)		2,818 SF.
	SUBTOTAL:		42U	45,745 SF. = 72.2%
COMMERCIAL:	2ND FLOOR	(OFFICE UNITS)	5U	5,470 SF.
	1ST FLOOR	(COMMUNITY HALL)		5,520 SF.
		(MANAGER OFFICE)		250 SF.
		(CAFE/FOOD PLACES)		1,130 SF.
		(RETAILS/SALES/SERVICES)		5,274 SF.
	SUBTOTAL:			17,644 SF. = 27.8%
	TOTAL FLOOR AREA:			63,389 SF.

MEZZANINE LEVEL PARKING = 24,392 SF
GROUND FLOOR PARKING = 20,604 SF
BASEMENT LEVEL PARKING = 38,480 SF

12. F.A.R: TOTAL BUILDING AREA 63,389 SF. / 46,075 SF. = 1.38:1 (MAX 1.6:1)

13. RESIDENTIAL TYPES: (CONDOMINIUM)

TYPE A:	2-BDRM/2½-BTHRM	29U X 1,094 SF.	= 31,726 SF.
TYPE B:	1-BDRM/1½-BTHRM	13U X 862 SF.	= 11,206 SF.
TOTAL CONDO. UNITS:		42U	= 42,932 SF.

14. PARKING SPACE:

REQUIRED COMMERCIAL:			
COMMUNITY HALL	5,520 SF. / 75	=	74 P
MANAGER OFFICE	250 SF. / 250	=	1 P
CAFE/FOOD PLACES	1,130 SF. / 100	=	11 P
RETAILS/SALES/SERVICES	5,274 SF. / 250	=	21 P
OFFICE SUITES (@2ND FLR)	5,470 SF. / 250	=	22 P
COMMERCIAL SUBTOTAL:	17,644 SF.	=	129 P
REQUIRED RESIDENTIAL:			
TYPE A 2-BEDRM UNIT	29 U X 2P	=	58 P
TYPE B 1-BEDRM UNIT	13 U X 1P	=	13 P
(PER DENSITY BONUS: GUEST PARKING INCLUDED)			71 P
TOTAL REQUIRED:		=	200 P

PROVIDED:

AREA	STANDARD	COMPACT	H.C.	LOADING	TOTAL	REQ'D	SURPLUS
COMM.	95	29	5	–	129	129	0
RESIDENTIAL	73	0	2	–	75	71	4
TOTAL	168	29	7	–	204	200	4

COMPACT PARKING 29/136 = 21.3% < 25% MAX.

BIKE PARKING PROVIDED: 24 TOTAL; 12 BIKE RACKS ON MEZZANINE LEVEL AND 12 BIKE RACKS ON GROUND LEVEL (10% OF 210 PARKING SPACES = 21 REQ'D)

15. OPEN SPACE FOR RESIDENTIAL:

COMMON OPEN SPACE REQ'D: 42 RES. UNITS X 150 SF. = 6,300 SF.
PROVIDED:

4TH FLOOR:	OUTDOOR DECK	=	633 SF.
3RD FLOOR:	OUTDOOR DECK	=	633 SF.
2ND FLOOR:	OUTDOOR DECK	=	633 SF.
	COURTYARD	=	6,708 SF.
	RECREATION+GYM+LIBRARY	=	2,818 SF.
TOTAL PROVIDED:		=	11,425 SF. > 6,300 SF.

PRIVATE OPEN SPACE REQ'D: 42 RES. UNITS X 60 SF. = 2,520 SF.
PROVIDED:

4TH FLOOR:	(17) BALCONYS	=	1,173 SF.
3RD FLOOR:	(17) BALCONYS	=	1,173 SF.
2ND FLOOR:	(8) DECKS	=	5,100 SF.
TOTAL PROVIDED:		=	7,446 SF. > 2,520 SF.

16. CONCESSIONS:

1. BUILDING HEIGHT/STORY:
   RC-MUDO HEIGHT LIMITATION MAX. ALLOWABLE HEIGHT OF 45 FEET WITH THREE STORIES.
   PROJECT PROPOSED 4-STORY MIXED-USED COMMERCIAL AND RESIDENTIAL OF 59'-2" FEET HEIGHT UP TO FLAT ROOF, 63'-2" FEET HEIGHT UP TO TOP OF PARAPET.

2. BUILDING MASS:
   RCMUDO BUILDING MASS REQUIRES 33% COMMERCIAL AND 67% RESIDENTIAL LAND USE MIX. PROJECT PROPOSED 27.8% COMMERCIAL AND 72.2% RESIDENTIAL MIXED-USED.

UTILITY SERVICES:

CABLE - CHARTER COMMUNICATIONS
WATER - AMARILLO M WATER COMPANY
SEWER - LINE OWNER CITY AND MAINTAIN BY COUNTY
GAS - THE GAS COMPANY
ELECTRICAL - SOUTHERN CALIFORNIA EDISON
TELEPHONE - AT&T
SCHOOL - GARVEY ELEMENTARY
FIRE - L.A. COUNTY FIRE DEPARTMENT
SHERIFF - TEMPLE SHERIFF DEPARTMENT
TRASH - REPUBLIC SERVICES

CIVIL ENGINEER:

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OWNER:

TAIWAN CENTER / MR. ALAN THIAN,
C/O: RICHARD CHEN
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BASIS OF BEARING:

CENTERLINE OF WALNUT GROVE AVE N 01°05'50" W PER TRACT NO.40720 M.B.994/80-81

BENCHMARK:

BENCHMARK NO. MG 4833

DPW BM TAG IN N CB 3 FT W/O BCR @ NW COR GARVEY AVE & WALNUT GROVE.

ELEVATION: 260.711'

NOTE:

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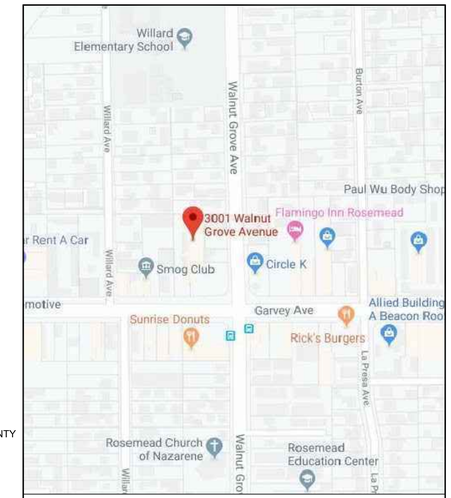
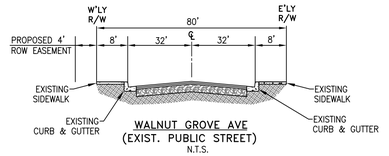
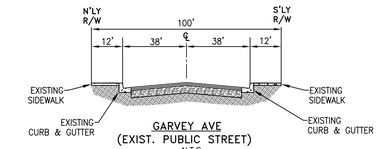
PROP. UNIT:	42 UNIT RESIDENTIAL AND 12 COMMERCIAL UNITS
LOT SIZE:	46059.06 SF/1.057 AC
SEWERAGE DISPOSAL:	BY GRAVITY SEWER PIPES TO STREET MAIN.



VICINITY MAP





EX. EASEMENT:

PIPE LINE EASEMENT AS RECORDED IN BOOK 1531, PAGE 48 OF DEEDS IS INDETERMINATE IN NATURE.
PIPE LINE EASEMENT AS RECORDED IN BOOK 10146, PAGE 263 OF OFFICIAL RECORDS IS INDETERMINATE IN NATURE.
PIPE LINE EASEMENT AS RECORDED IN BOOK 12242, PAGE 224 OF OFFICIAL RECORDS IS INDETERMINATE IN NATURE.
A 20' OF STREET AND HIGHWAY EASEMENT PER DEED RECORDED IN BOOK 13194, PAGE 194, O.R.
PIPE LINE EASEMENT AS DOC. NO. 210 IN BOOK 8001, PAGE 293 OF OFFICIAL RECORDS IS INDETERMINATE IN NATURE.
B 20' OF STREET AND HIGHWAY EASEMENT PER DEED RECORDED IN BOOK 13110, PAGE 227, O.R.
C VARIABLE WIDTH OF THE ROAD EASEMENT PER DEED RECORDED DOC. NO. 2414, O.R.
D VARIABLE WIDTH OF THE ROAD EASEMENT PER DEED RECORDED DOC. NO. 2305, O.R.
E1 3' WIDE SCE EASEMENT PER DEED RECORDED AS DOC. NO. 90-67606, O.R. (WILL BE VACATED)
E2 6' WIDE SCE EASEMENT PER DEED RECORDED AS DOC. NO. 90-67606, O.R. (WILL BE VACATED)
F1 6' WIDE SCE EASEMENT PER DEED RECORDED AS DOC. NO. 90-67606, O.R. (WILL BE VACATED)
F2 12' WIDE SCE EASEMENT PER DEED RECORDED AS DOC. NO. 90-67606, O.R.
PIPE LINE EASEMENT AS RECORDED IN BOOK 1531, PAGE 48 OF DEEDS IS INDETERMINATE IN NATURE.
PIPE LINE EASEMENT AS RECORDED IN BOOK 12927, PAGE 220 O.R. IS BLANKET IN NATURE.
G VARIABLE WIDTH OF THE ROAD EASEMENT PER DEED RECORDED DOC. NO. 2278, O.R.
H VARIABLE WIDTH OF THE ROAD EASEMENT PER DEED RECORDED DOC. NO. 2304, O.R.

PRO. EASEMENT:

4' ROW EASEMENT

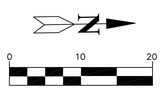
CONSTRUCTION NOTES:

1. EXISTING STRUCTURE TO BE REMOVED
2. EXISTING FENCE TO BE REMOVED
3. EXISTING DRIVEWAY APPROACH TO BE REMOVED
4. PROPOSED DRIVEWAY APPROACH

LEGEND:

(527.63).....EXISTING ELEVATION
520.00.....PROPOSED ELEVATION
--(530)--.....EXISTING COUNTOUR
.....DRAINAGE PATTERN
.....PROPOSED STRUCTURE
.....PROPOSED 6' BLOCK WALL
SW.....SIDE WALK
.....LIGHT
.....CENTER LINE
.....PROPERTY LINE
(9).....CONSTRUCTION NOTES
.....SANDBAG LINE

T.C.....TOP OF CURB
F.L.....FLOW LINE
F.G.....FINISH GRADE
F.S.....FINISH SURFACE
F.F.....FLOOR FINISH
H.P.....HIGH POINT
P.P.....POWER POLE
D/W.....DRIVEWAY
W.M.....WATER METER
INV.....INVERT ELEVATION
T.G.....TOP OF GRATE
D.S.....DOWNSPOUT
.....LANDCAPE AREA



(IN FEET)
1 inch = 10 ft.

REGISTERED PROFESSIONAL ENGINEER
JACK C. S. LEE
40870
Exp. 3-31-21
CIVIL
STATE OF CALIFORNIA

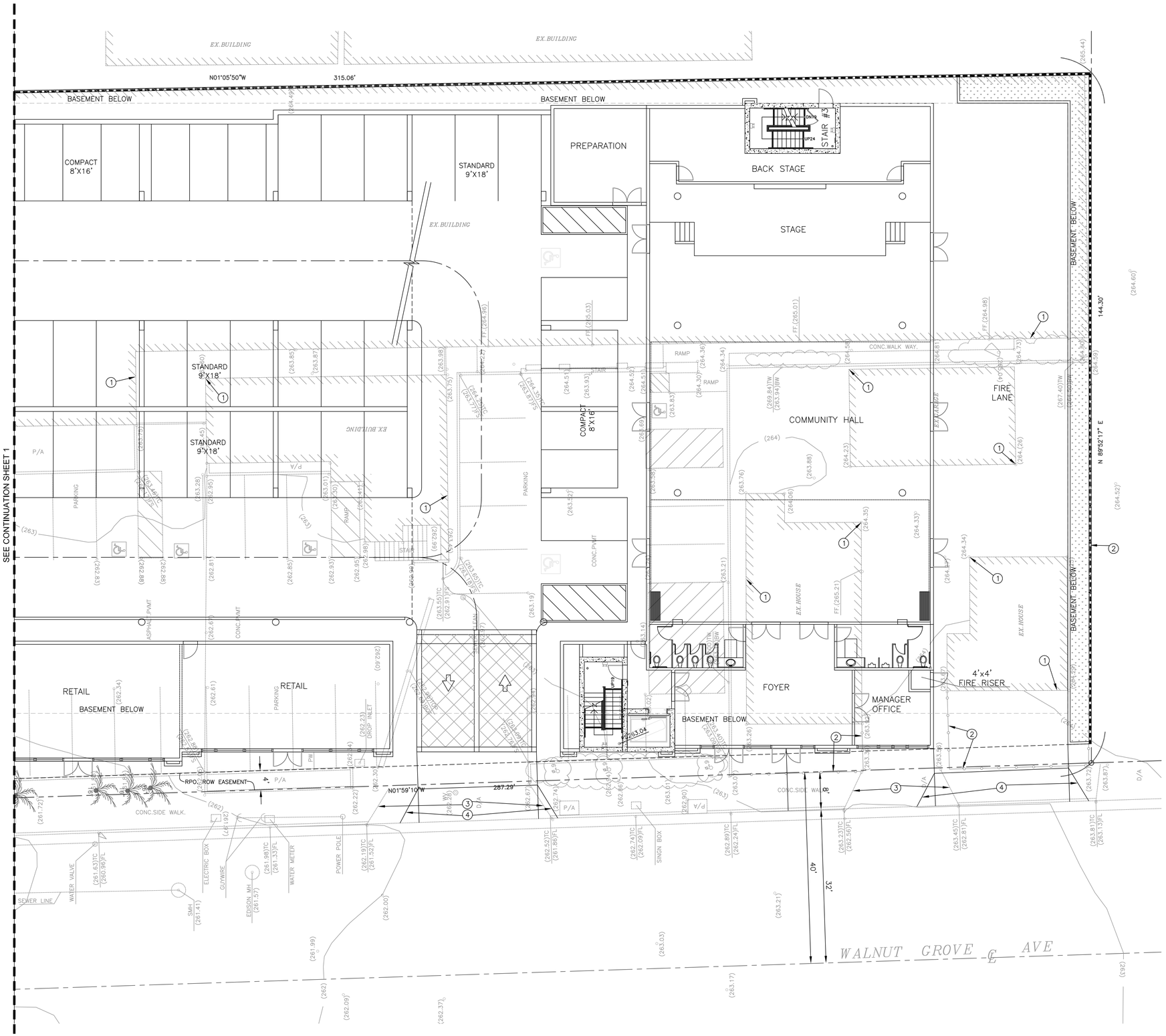
CAL LAND ENGINEERING, INC.
dba QUARTECH CONSULTANTS
576 E. LAMBERT ROAD, BREA, CA 92821
TEL: (714) 671-1050 FAX: (714) 671-1090

PROJECT LOCATION:
9349 Guess Street,
Rosemead CA 91770

DRAWN: A.S.
CHECKED:
DATE: 07/15/2019
JOB. NO.: 19-019-006
SCALE: 1" = 10'
FILE NAME:

T-1

SHEET 1 OF 2



SEE CONTINUATION SHEET 1

LEGEND:

(527.63)	EXISTING ELEVATION
520.00	PROPOSED ELEVATION
--(530)--	EXISTING COUNTOUR
	DRAINAGE PATTERN
	PROPOSED STRUCTURE
	PROPOSED 6' BLOCK WALL
SW	SIDE WALK
	LIGHT
℄	CENTER LINE
℗	PROPERTY LINE
(9)	CONSTRUCTION NOTES
	SANDBAG LINE

T.C.	TOP OF CURB
F.L.	FLOW LINE
F.G.	FINISH GRADE
F.S.	FINISH SURFACE
F.F.	FLOOR FINISH
H.P.	HIGH POINT
P.P.	POWER POLE
D/W	DRIVEWAY
W.M.	WATER METER
INV.	INVERT ELEVATION
T.G.	TOP OF GRATE
D.S.	DOWNSPOUT
	LANDCAPE AREA

CONSTRUCTION NOTES:

1. EXISTING STRUCTURE TO BE REMOVED
2. EXISTING FENCE TO BE REMOVED
3. EXISTING DRIVEWAY APPROACH TO BE REMOVED
4. PROPOSED DRIVEWAY APPROACH

0 10 20

(IN FEET)
1 inch = 10 ft.

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Exp. 3-31-21
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dba QUARTECH CONSULTANTS
576 E. LAMBERT ROAD, BREA, CA 92821
TEL: (714) 671-1050 FAX: (714) 671-1090

PROJECT LOCATION:
8589 GARVEY AVE. AND 3001 WALNUT GOVE AVE.
ROSEMEAD, CA 91770

DRAWN:	A.S.
CHECKED:	
DATE:	08/29/2019
JOB. NO.:	19-221-001
SCALE:	1" = 10'
FILE NAME:	

T-2

SHEET 2 OF 2

APPENDIX H

VMT WORKSHEETS

SGVCOG VMT Evaluation Tool Report

Project Details

Timestamp of Analysis: October 08, 2020, 10:06:45 AM

Project Name: Walnut Grove Mixed Use Housing Community Development

Project Description: NW corner of Walnut Grove and Garvey42 Condos, 5,470 sqf Office, 1,130 Cafe, 5,274 Retail/Gym/Library and 5,520 Community Center

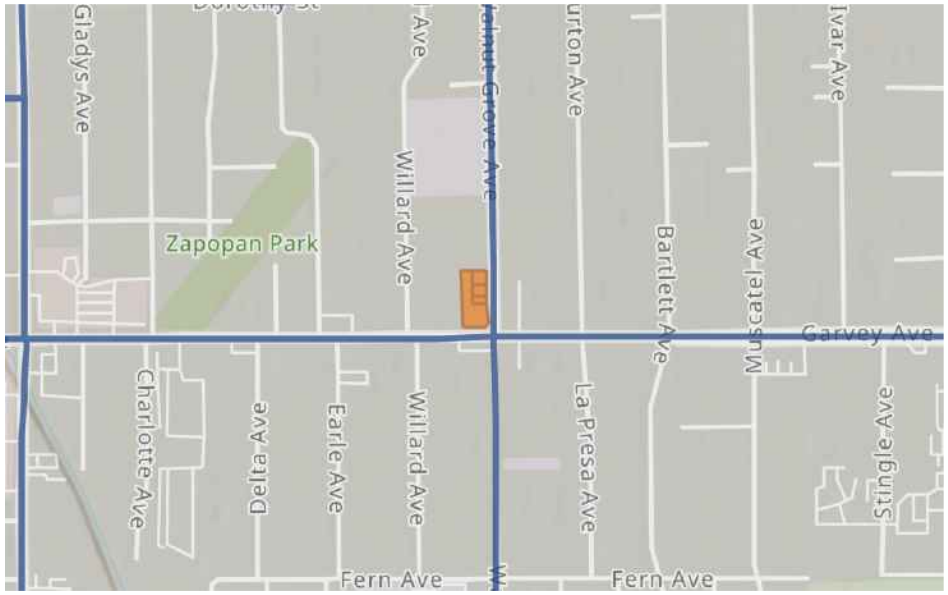
Project Location

Jurisdiction: Rosemead

APN	TAZ	APN	TAZ	APN	TAZ
5288-001-042	22176200	5288-001-040	22176200	5288-001-041	22176200
		5288-001-043	22176200		

Inside a TPA?

No (Fail)



Analysis Details

Data Version: SCAG Regional Travel Demand Model 2016 RTP Base Year 2012

Analysis Methodology: TAZ

Baseline Year: 2020

Project Land Use

Residential:

Single Family DU:	
Multifamily DU:	42
Total DUs:	42

Non-Residential:

Office KSF:	5
Local Serving Retail KSF:	11
Industrial KSF:	

Residential Affordability (percent of all units):

Extremely Low Income:	0 %
Very Low Income:	0 %
Low Income:	0 %

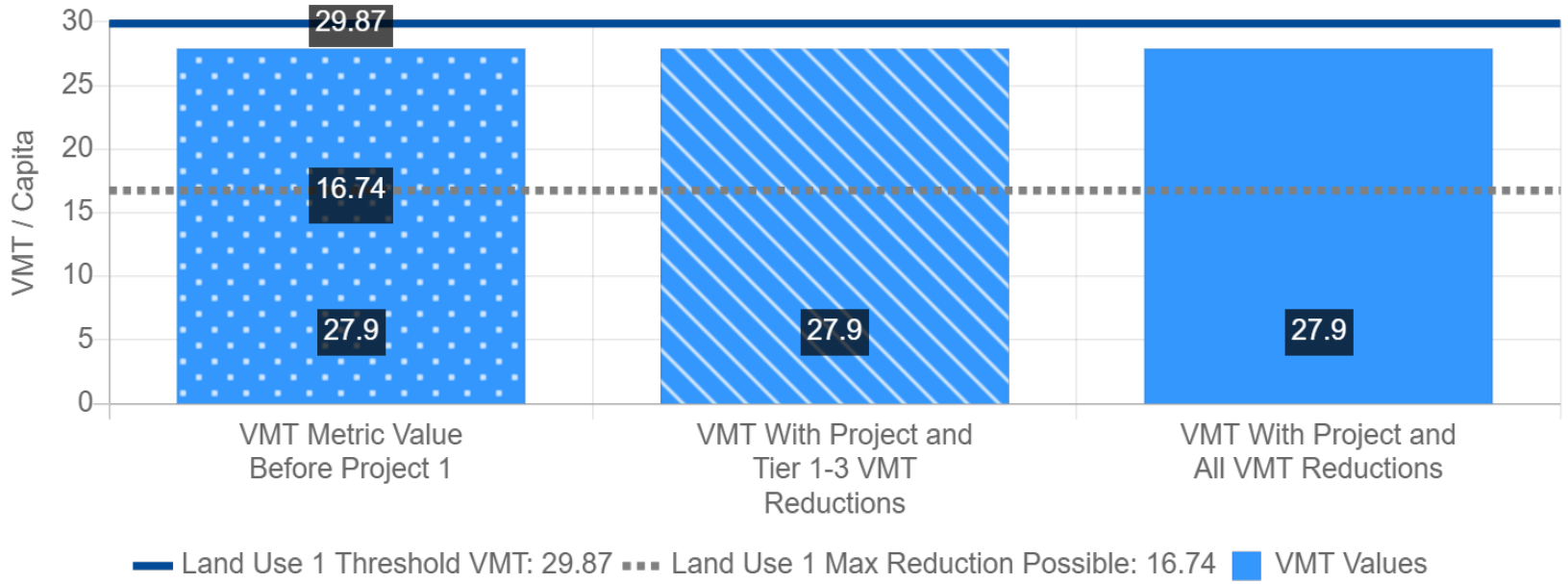
Parking:

Motor Vehicle Parking:	204
Bicycle Parking:	31

Residential Vehicle Miles Traveled (VMT) Screening Results

Land Use Type 1:	Residential
VMT Without Project 1:	Total VMT per Service Population
VMT Baseline Description 1:	SGVCOG Average
VMT Baseline Value 1:	35.14
VMT Threshold Description 1:	-15%
Land Use 1 has been Pre-Screened by the Local Jurisdiction:	N/A

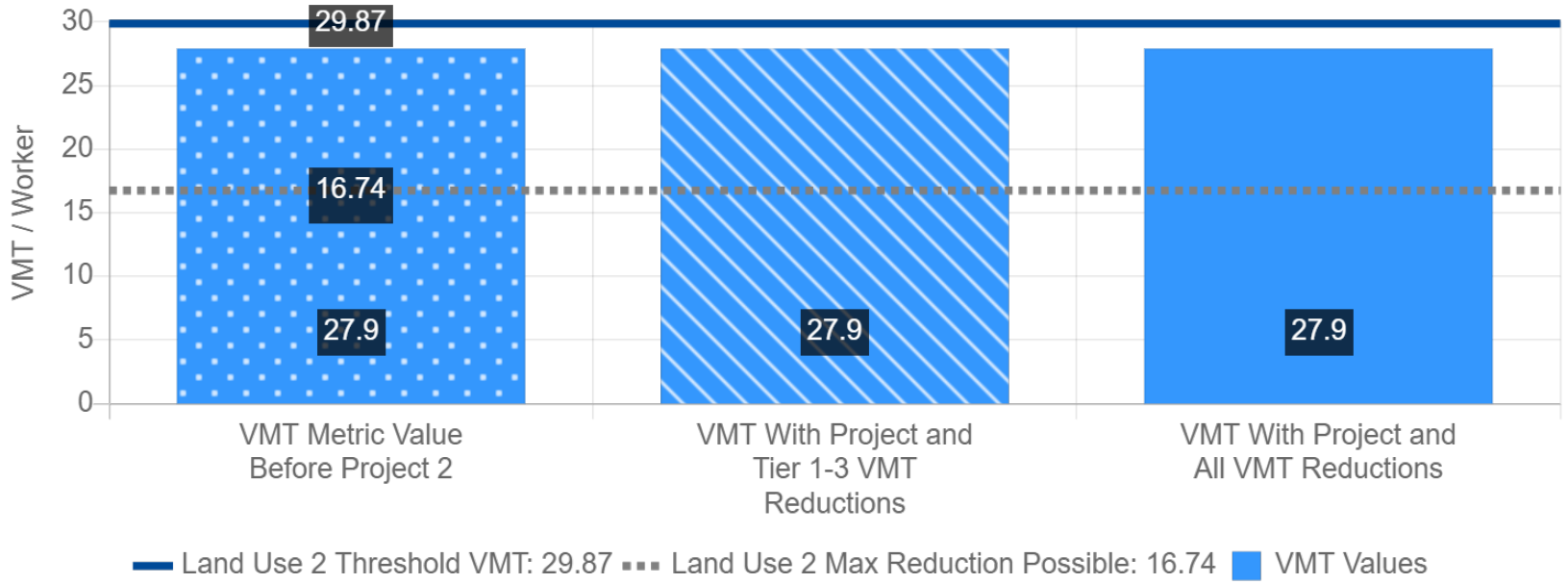
	Without Project	With Project & Tier 1-3 VMT Reductions	With Project & All VMT Reductions
Project Generated Vehicle Miles Traveled (VMT) Rate	27.9	27.9	27.9
Low VMT Screening Analysis	Yes (Pass)	Yes (Pass)	Yes (Pass)



Commercial Vehicle Miles Traveled (VMT) Screening Results

Land Use Type 2:	Commercial
VMT Without Project 2:	Total VMT per Service Population
VMT Baseline Description 2:	SGVCOG Average
VMT Baseline Value 2:	35.14
VMT Threshold Description 2:	-15%
Land Use 2 has been Pre-Screened by the Local Jurisdiction:	N/A

	Without Project	With Project & Tier 1-3 VMT Reductions	With Project & All VMT Reductions
Project Generated Vehicle Miles Traveled (VMT) Rate	27.9	27.9	27.9
Low VMT Screening Analysis	Yes (Pass)	Yes (Pass)	Yes (Pass)



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