TRANSPORTATION ASSESSMENT FOR THE 905 BEACON AVENUE RESIDENTIAL PROJECT

LOS ANGELES, CALIFORNIA

NOVEMBER 2020

PREPARED FOR

TRIUMPH PROPERTIES GROUP, LLC

PREPARED BY

Gibson
transportation consulting, inc.

TRANSPORTATION ASSESSMENT
FOR THE
905 BEACON AVENUE
RESIDENTIAL PROJECT

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November 2020

Prepared for:

TRIUMPH PROPERTIES GROUP, LLC

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Chapter 1
Introduction

This study presents the transportation assessment for the proposed residential project (Project) located at 905 Beacon Avenue (Project Site) in the City of Los Angeles, California (City). The methodology and base assumptions used in the analysis were established in consultation with the Los Angeles Department of Transportation (LADOT).

PROJECT DESCRIPTION

The Project is a seven-story mixed-use development consisting of 145 residential units and 2,400 square feet (sf) of ground-floor commercial uses. The existing surface parking lot on the site would be removed with the development of the Project. The Project is anticipated to be complete by Year 2023. Parking for the Project would be provided within one at-grade parking level and two subterranean parking levels. The Project would provide vehicular and bicycle parking on-site. Residential access to the Project Site would be provided via one full-access driveway on Beacon Avenue and commercial access would be provided via one full-access driveway on James M. Wood Boulevard.

The conceptual ground floor Project site plan is shown in Figures 1A and 1B.

PROJECT LOCATION AND TRANSPORTATION ANALYSIS STUDY AREA

As shown in Figure 2A, the Project Site, located on the southwest corner of Beacon Avenue & James M. Wood Boulevard, is bounded by James M. Wood Boulevard to the north, Beacon Avenue to the east, and residential uses to the south and commercial uses to the west. Most nearby uses are commercial or residential. The Los Angeles County Metropolitan Transportation Authority (Metro) Red/Purple Line Westlake/MacArthur Park Station is located less than 0.5 miles northwest of the Project Site. The Project consists of seven parcels contained within three

Assessor's Parcel Number (APN): APN 5137-001-034, APN 5137-001-002, and APN 5137-001-003.

The Project Site is located approximately 0.5 miles west of the Harbor Freeway (SR 110), approximately 0.9 miles north of the Santa Monica Freeway (I-10), and approximately 1.5 miles south of the Hollywood Freeway (US 101), all of which provide regional access to and from downtown Los Angeles.

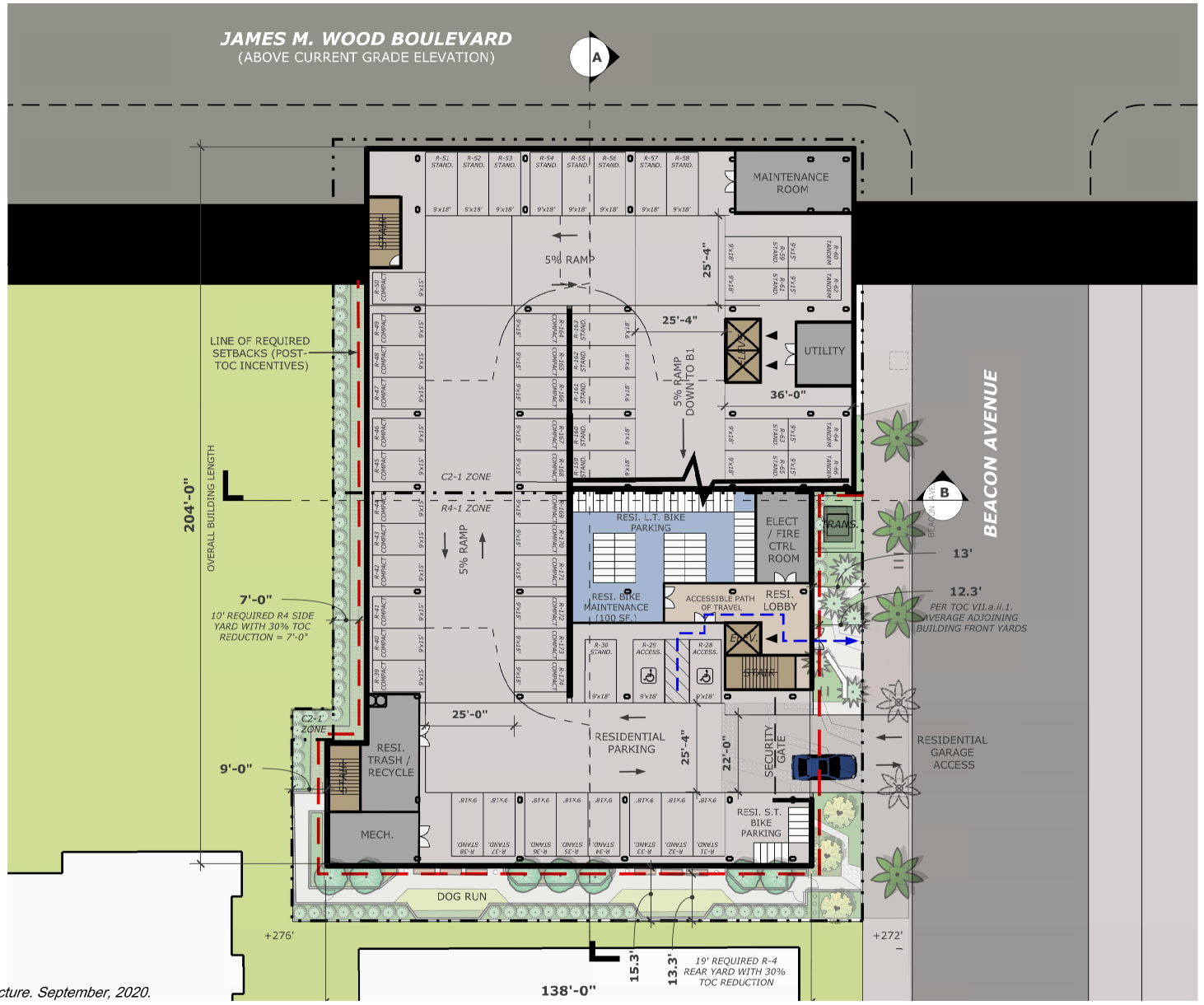
As shown in Figure 2B, this transportation assessment includes the key intersections along Beacon Avenue and James M. Wood Boulevard that provide access to the Project Site.

STUDY SCOPE

The scope of analysis for this study was developed in consultation with LADOT and is consistent with *Transportation Assessment Guidelines* (LADOT, July 2020) (the TAG) and in compliance with the California Environmental Quality Act (CEQA) guidelines. The base assumptions and technical methodologies (i.e., trip generation, study locations, analysis methodology, etc.) were identified as part of the study approach and were outlined in a Memorandum of Understanding (MOU) that was reviewed and approved by LADOT and is provided in Appendix A.

ORGANIZATION OF REPORT

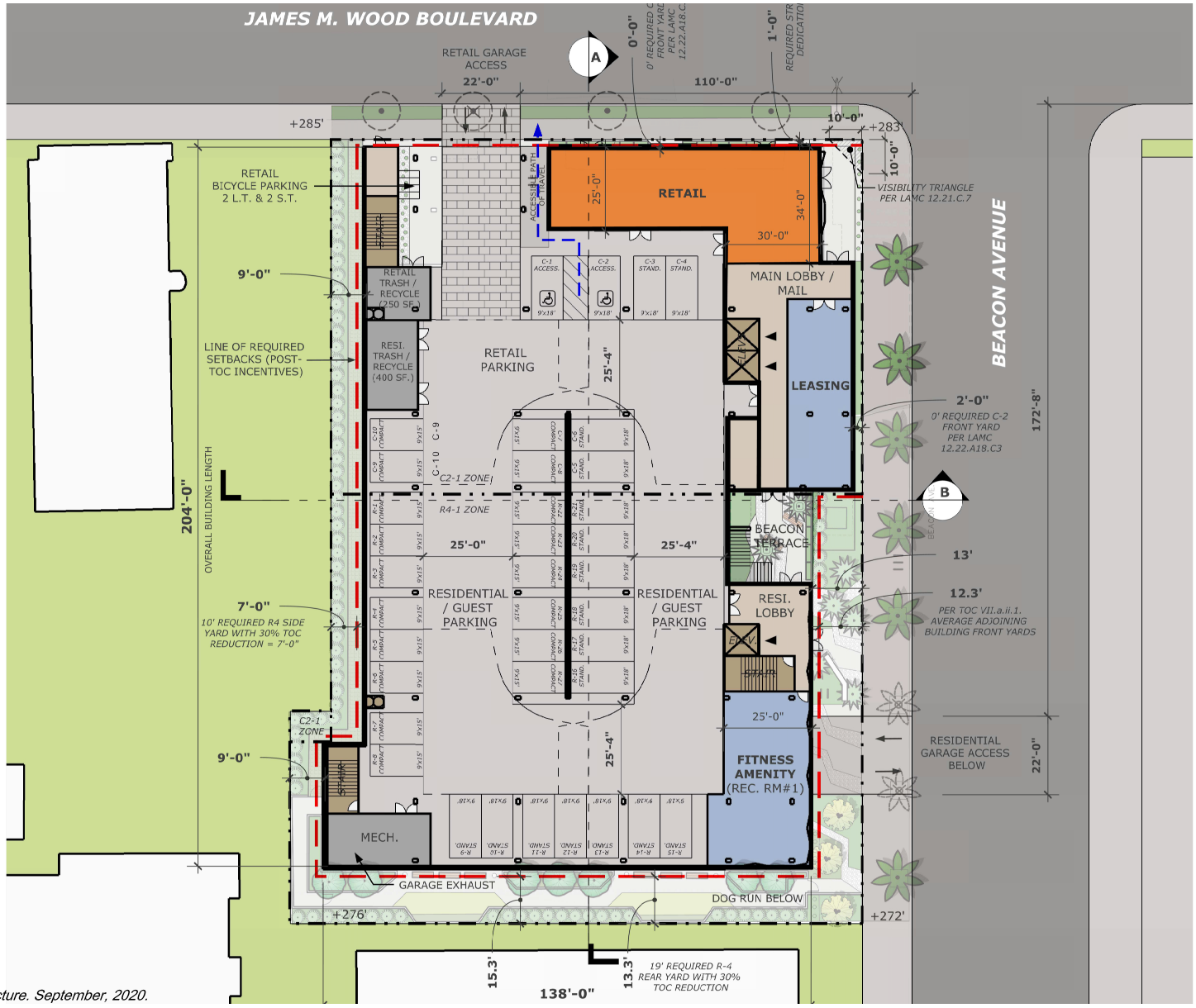
This report is divided into five chapters, including this introduction. Chapter 2 describes the existing and future circulation system, traffic volumes, and traffic conditions in the Study Area. Chapter 3 presents the CEQA analysis of transportation impacts. Chapter 4 details the non-CEQA transportation analyses. Chapter 5 summarizes the analyses and study conclusions. The appendices contain supporting documentation, including the MOU that outlines the study scope and assumptions, and additional details supporting the technical analyses.



Source: NEXT Architecture. September, 2020.

PROJECT SITE PLAN (LEVEL 1)

FIGURE 1A



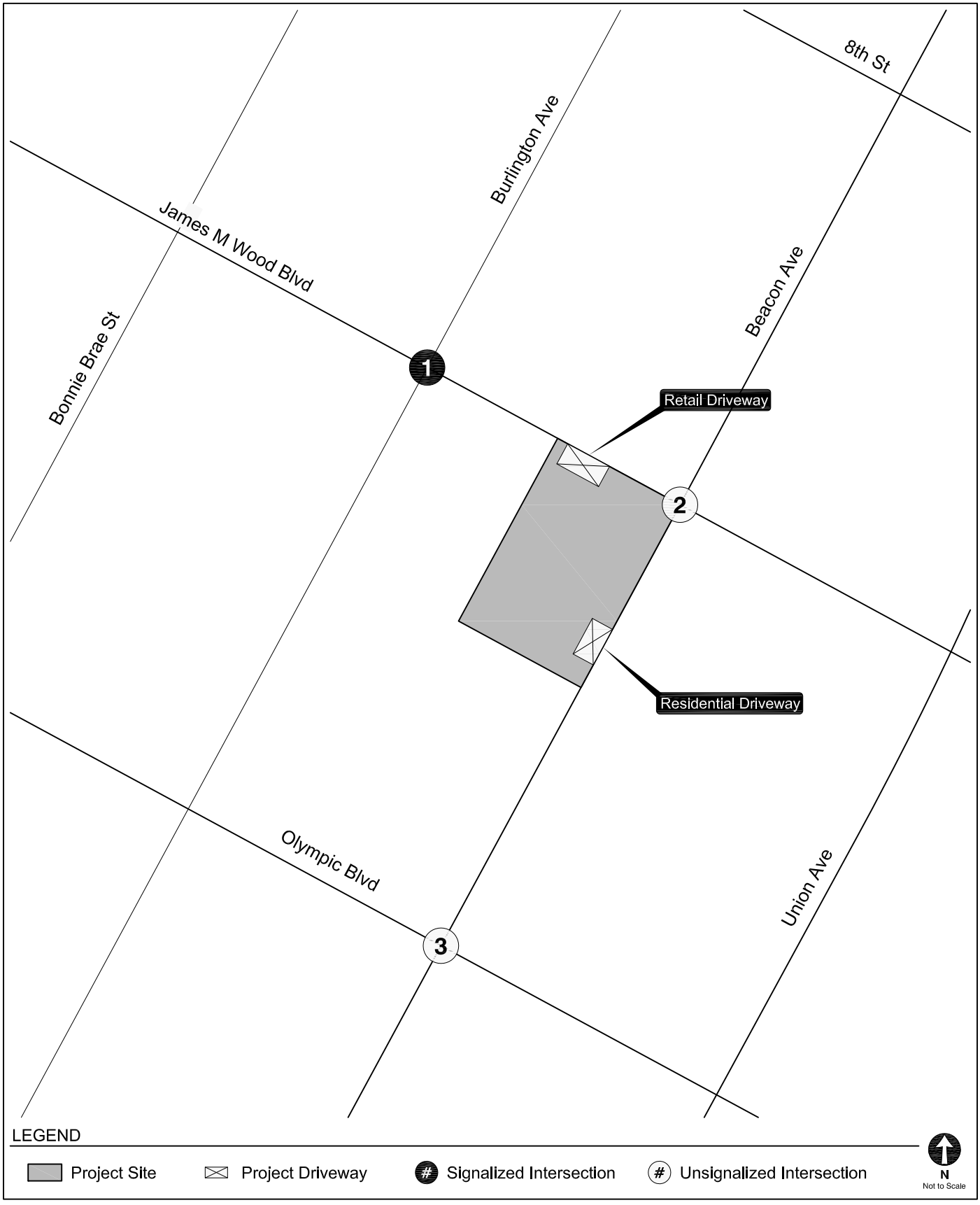
Source: NEXT Architecture. September, 2020.

PROJECT SITE PLAN (LEVEL 2)

FIGURE 1B

PROJECT LOCATION

FIGURE 2A



STUDY AREA & ANALYZED INTERSECTIONS

FIGURE 2B

Chapter 2
Project Context

A comprehensive data collection effort was undertaken to develop a detailed description of existing and future conditions in the Project Study Area.

The Existing Conditions analysis includes an assessment of the existing transportation infrastructure and conditions of the Study Area including freeway and street systems, transit service, and pedestrian and bicycle circulation at the time the MOU was approved in December 2019. Fieldwork (lane configurations, signal phasing, parking restrictions, etc.) for the analyzed intersections was collected in Year 2020. Fieldwork (lane configurations) for the analyzed intersections is provided in Figure 3.

In addition, this chapter contains a discussion of the assumptions used to develop the Future without Project conditions in Year 2023, which corresponds to projected occupancy of the Project.

STUDY AREA

The Study Area includes key intersections along Beacon Avenue and James M. Wood Boulevard and was established in consultation with LADOT based on the following factors identified in the TAG:

1. Primary driveway(s)
2. Intersections at either end of the block on which the Project is located or up to 600 feet from the primary Project driveway(s)
3. Unsignalized intersections adjacent to the Project site that are integral to the Project's site access and circulation plan
4. Signalized intersections in proximity to the Project site where 100 or more Project trips would be added

A total of three intersections, listed in Table 1, were identified for detailed analysis during the MOU process.

EXISTING STREET SYSTEM

The existing street system in the Study Area consists of a regional roadway system including freeways, primary and secondary arterials, and collector and local streets that provide regional, sub-regional, or local access and circulation within the Study Area. These transportation facilities generally provide two to six travel lanes and allow parking on either side of the street. Typically, the speed limits range between 25 and 35 miles per hour (mph) on the streets and between 55 and 65 mph on freeways.

Street classifications are designated in *Mobility Plan 2035, An Element of the General Plan* (Los Angeles Department of City Planning [LADCP], September 2016) (the Mobility Plan). The Mobility Plan has revised street standards in an effort to provide a more enhanced balance between traffic flow and other important street functions including transit routes and stops, pedestrian environments, bicycle routes, building design and site access, etc. The available facilities in the Study Area are defined by the following in the Mobility Plan:

- Freeways are high-volume, high-speed roadways with limited access provided by interchanges that carry regional traffic through and do not provide local access to adjacent land uses.
- Arterial Streets are major streets that serve through traffic, as well as provide access to major commercial activity centers. Arterials are divided into two categories:
    - Boulevards represent the widest streets that typically provide regional access to major destinations and include two categories:
        - Boulevard I provides up to four travel lanes in each direction with a target operating speed of 40 mph
        - Boulevard II provides up to three travel lanes in each direction with a target operating speed of 35 mph
    - Avenues pass through both residential and commercial areas and include three categories:
        - Avenue I provides up to two travel lanes in each direction with a target operating speed of 35 mph

- Avenue II provides up to two travel lanes in each direction with a target operating speed of 30 mph
- Avenue III provides up to two travel lanes in each direction with a target operating speed of 25 mph

- Collector Streets are generally located in residential neighborhoods and provide access to and from Arterial Streets for local traffic and are not intended for cut-through traffic. They provide one travel lane in each direction with operating speed of 25 mph.

- Local Streets are intended to accommodate lower volumes of vehicle traffic and provide parking on both sides of the street. They provide one travel lane in each direction with a target operating speed of 15 to 20 mph. Local Streets include two categories:
  - Continuous Local Streets connect to other streets at both ends
  - Non-continuous Local Streets lead to a dead-end

Primary regional access to the Project Site is provided by SR 110, US 101, and I-10. The major Arterials providing regional and sub-regional access to the Project include James M. Wood Boulevard and Olympic Boulevard. The following is a brief description of the major roadways and their classifications in the Mobility Plan:

Freeways

- SR 110 – SR 110 is a freeway that generally runs in the northeast-southwest direction and is located approximately 0.5 miles east of the Project Site. In the vicinity of the Study Area, SR 110 provides three to four travel lanes in each direction. Access to and from SR 110 is available via interchanges at 8th Street and 11th Street.

Roadways

- Beacon Avenue – Beacon Avenue is a designated Local Street running northeast-southwest along the eastern boundary of the Project Site. It provides two travel lanes, one lane in each direction. Travel lanes are generally 10-11 feet wide and the total paved width is 36 feet. Two-hour metered and unrestricted unmetered on-street parking is generally available on both sides of the street within the Study Area.

- James M. Wood Boulevard – James M. Wood Boulevard is an Avenue III running in the northwest-southeast direction and is located along the northern boundary of the Project Site. It generally provides two travel lanes, one lane in each direction, and a two-way left-turn median. Travel lanes are generally 10-11 feet wide and the total paved width is 46 feet. Two-hour metered on-street parking is generally available on both sides of the street within the Study Area.

- Burlington Avenue – Burlington Avenue is a designated Collector Street north of Olympic Boulevard and a designated Local Street south of Olympic Boulevard running northeast-

southwest approximately 300 feet west of the Project Site. It provides two travel lanes, one lane in each direction. Travel lanes are generally 10-11 feet wide and the total paved width ranges from 36-40 feet. Two-hour metered or unrestricted, unmetered on-street parking is generally available on both sides of the street within the Study Area.

- Olympic Boulevard – Olympic Boulevard is a designated Boulevard II running northwest-southeast approximately 0.10 miles south of the Project Site. It provides six travel lanes, three lanes in each direction, with left-turn lanes at intersections. Travel lanes are generally 10 feet wide and the total paved width is 80 feet. Two-hour metered on-street parking with morning and afternoon peak hour restrictions is generally available on both sides of the street within the Study Area.

The existing intersection mobility facilities are shown in Figure 4 and the transportation facilities and pedestrian destinations are shown in Figure 5.

Existing Transit System

The Project Study Area is served by bus lines operated by Metro and LADOT Downtown Area Shuttle (DASH). Figure 6 illustrates the existing transit service in and around the Study Area.

In addition to the bus lines that provide service within the Project Site vicinity, various light rail and subway transit lines operate in and around the Study Area. The Metro Purple Line runs in the east-west direction between Union Station and Koreatown. The Metro Red Line runs in the northwest-southeast direction between Union Station and North Hollywood. In the Project vicinity, the Metro Red and Purple Lines have a stop at the Westlake/MacArthur Park Station, less than 0.5 miles northwest of the Project Site.

Table 2 summarizes the transit lines operating in and around the Study Area, including the type of service (peak vs. off-peak, express vs. local), frequency of service, service area, and hours of operation. The average frequency of transit service during the peak hour was derived from the number of peak-period stops made at the stop nearest the Project Site.

Transit ridership statistics were provided by Metro. This data was used, along with the frequency of service for each line and maximum seated and standing capacity of each bus, to determine the residual transit capacity of routes serving the Project Site. Table 3 summarizes the total residual capacity of the transit lines within 0.25 miles walking distance of the Project Site during the morning and afternoon peak hours, respectively. As shown, the transit lines serving the Project

Site currently have available capacity for 1,266 additional riders during the morning peak hour and 1,222 additional riders during the afternoon peak hour.

Existing Bicycle System

The Mobility Plan includes the specific goals and policies of *2010 Bicycle Plan, A Component of the City of Los Angeles Transportation Element* (LADCP, 2010) (2010 Bicycle Plan). The Mobility Plan establishes the overall framework for those components of the 2010 Bicycle Plan and builds upon those goals of improving bicycling for all levels of experience. The existing bicycle system consists of a limited network of bicycle lanes (Class II) and bicycle routes (Class III). Bicycle lanes are a component of street design with dedicated striping, separating vehicular traffic from bicycle traffic. These facilities offer a safer environment for both cyclists and motorists. Bicycle routes and bicycle-friendly streets are those where motorists and cyclists share the roadway and there is no dedicated striping of a bicycle lane. Bicycle routes and bicycle-friendly streets are preferably located on Collector and lower volume Arterial Streets. Bicycle routes with shared lane markings, or "sharrows," remind bicyclists to ride farther from parked cars to prevent collisions, makes motorists aware of bicycles potentially in the travel lane, and shows bicyclists the correct direction of travel. There are currently no bicycle facilities located within the Study Area.

Existing Pedestrian Facilities

The walkability of existing facilities is based on the availability of pedestrian routes necessary to accomplish daily tasks without the use of an automobile; these attributes are quantified by WalkScore.com and assigned a score out of 100 points. With the various commercial businesses and cultural facilities adjacent to residential neighborhoods, the walkability of the Study Area is approximately 93 points[1]; this compares to the citywide score of 67 points.

The sidewalks that serve as routes to the Project Site provide proper connectivity and adequate widths for a comfortable and safe pedestrian environment. The sidewalks provide connectivity to pedestrian crossings at study intersections.

[1] Walk Score (www.walkscore.com) rates the Project Site with a score of 93 of 100 possible points (scores accessed on January 6, 2020 for 905 Beacon Avenue). Walk Score calculates the walkability of specific addresses by taking into account the ease of living in the neighborhood with a reduced reliance on automobile travel.

The intersection of Burlington Avenue & James M. Wood Boulevard (Intersection #1) provides marked pedestrian crossings and crosswalk striping on all approaches, including continental crosswalks on the north and south legs. All three study intersections provide Americans with Disabilities Act (ADA) accessible curb ramps as shown in Figure 4.

Vision Zero

As described in *Vision Zero: Eliminating Traffic Deaths in Los Angeles by 2025* (City of Los Angeles, August 2015), Vision Zero is a traffic safety policy that promotes strategies to eliminate collisions that result in severe injury or death. Vision Zero has identified the High Injury Network, a network of streets based on the collision data from the last five years, where strategic investments will have the biggest impact in reducing death and severe injury. Based on LADOT policies, identification of these networks helps to prioritize improvement areas should traffic impacts be identified.

Although no streets within the Study Area have been identified as part of the High Injury Network, the following streets located in proximity to the Study Area have been identified (as shown in Figure 5):

- 8th Street
- Olympic Boulevard
- Union Avenue south of Olympic Boulevard
- James M. Wood Boulevard west of Westlake Avenue

Existing Traffic Volumes

Intersection turning movement counts were collected at the study intersections during the weekday morning (7:00 AM to 10:00 AM) and afternoon (3:00 PM to 6:00 PM) peak periods in January 2020. Local schools were in session when all traffic counts were conducted, and the weather conditions were typical. Thus, the existing volumes utilized in this analysis (i.e., traffic volume figures, LOS calculations, etc.) reflect Existing Year 2020 Conditions. The existing intersection peak hour traffic volumes are illustrated in Figure 7. The traffic count worksheets are provided in Appendix B.

FUTURE CUMULATIVE TRANSPORTATION CONDITIONS

The forecast of Future without Project conditions was prepared in accordance with procedures outlined in the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 and following). Specifically, two options are provided for developing the cumulative traffic volume forecast:

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

As described in detail below, this analysis includes traffic growth both from future projects (option "A" above, the "Related Projects") and from regional growth projections (option "B" above, or ambient growth). The ambient growth factor discussed below likely includes some traffic growth resulting from the Related Projects. Therefore, the traffic analysis provides a highly conservative estimate of Future without Project traffic volumes.

The Future without Project traffic projections reflect growth in traffic over existing conditions from ambient growth, which reflects increase in traffic due to regional growth and development outside the Study Area, and traffic generated by ongoing or entitled projects in, or in the vicinity of, the Study Area.

Ambient Traffic Growth

Existing traffic is expected to increase as a result of regional growth and development outside the Study Area. Based on discussions with LADOT through the MOU process, a conservative ambient growth factor of 1% per year compounded annually was used to adjust the existing traffic volumes to reflect the effects of the regional growth and development by Year 2023. The total adjustment

applied over the three-year period was 3.03%. This growth factor conservatively accounts for increases in traffic due to potential projects not yet proposed or projects outside the Study Area.

Related Projects

In accordance with the CEQA Guidelines, this study also considered the effects of the Project in relation to other developments either proposed, approved, or under construction (collectively, the Related Projects). With this information, the potential impact of the Project was, therefore, evaluated within the context of the cumulative impact of past, present, and probable future developments capable of producing related or cumulative impacts. The list of Related Projects is based on information provided by LADCP and LADOT, as well as recent studies prepared for projects within the area. The Related Projects are detailed in Table 4 and their approximate locations are illustrated in Figure 8.

Though the estimated buildout years of many of these Related Projects are uncertain and may be well beyond the buildout year of the Project, and notwithstanding that some may never be approved or developed, they were all considered as part of this study and conservatively assumed to be completed by the Project buildout Year 2023. Therefore, the traffic growth due to the development of Related Projects considered in this analysis is highly conservative and, by itself, substantially overestimates the actual traffic volume growth in the area that would likely occur in the next three years prior to Project buildout. With the addition of the 1% per year ambient growth factor previously discussed, the Future without Project cumulative condition is even more conservative.

The development of estimated traffic volumes added to the Study Area as a result of Related Projects involves the use of a three-step process: trip generation, trip distribution, and trip assignment.

Trip Generation. Trip generation estimates for the Related Projects were provided by LADOT or were calculated using a combination of previous study findings and the trip generation rates contained in *Trip Generation Manual, 10th Edition* (Institute of Transportation Engineers, 2017). The Related Projects trip generation estimates, shown in Table 4, are conservative in that they do not in every case account for either the existing uses to be removed or the likely use of other travel modes (transit, walk, etc.). Further, they do not account for the internal capture trips within

a multi-use development, nor the interaction of trips between multiple Related Projects within the Study Area in which one Related Project serves as the origin for a trip destined for another Related Project.

Trip Distribution. The geographic distribution of the traffic generated by the Related Projects is dependent on several factors. These include the type and density of the proposed land uses, the geographic distribution of the population from which the employees/residents and potential patrons of the proposed developments are drawn, and the location of these projects in relation to the surrounding street system. These factors are considered along with logical travel routes through the street system to develop a reasonable pattern of trip distribution.

Trip Assignment. The trip generation estimates for the Related Projects were assigned to the local street system using the trip distribution patterns described above. Figure 9 shows the peak hour traffic volumes associated with these Related Projects at the study intersections.

Future without Project Traffic Volumes

The Related Project volumes were then added to the Existing traffic volumes after adjustment for ambient growth through the projected completion year of 2023. As discussed above, this is a conservative approach as many of the Related Projects may be reflected in the ambient growth rate. These volumes represent the Future without Project Conditions (i.e., existing traffic volumes added to ambient traffic growth and Related Project traffic growth) for Year 2023 and are shown in Figure 10 for the three study intersections.

Future Roadway Improvements

The roadway network for the Future without Project Conditions within the Study Area could also be affected by regional improvement plans, local specific plans, and programmed improvements (i.e., mitigations for Related Projects). The potential improvements that were identified are discussed below. Figure 11 illustrates the future transportation facilities improvements, including future transit, bicycle, and pedestrian facilities per the Mobility Plan, within the Study Area.

2010 Bicycle Plan. Within the Study Area, the 2010 Bicycle Plan proposes bicycle routes/bicycle friendly streets on Bonnie Brae Street and Union Avenue. No dedicated bicycle lanes were proposed within the Study Area. Since there is currently no schedule for implementation of the proposed bicycle facilities on Bonnie Brae Street or Union Avenue, they were not included in the analysis.

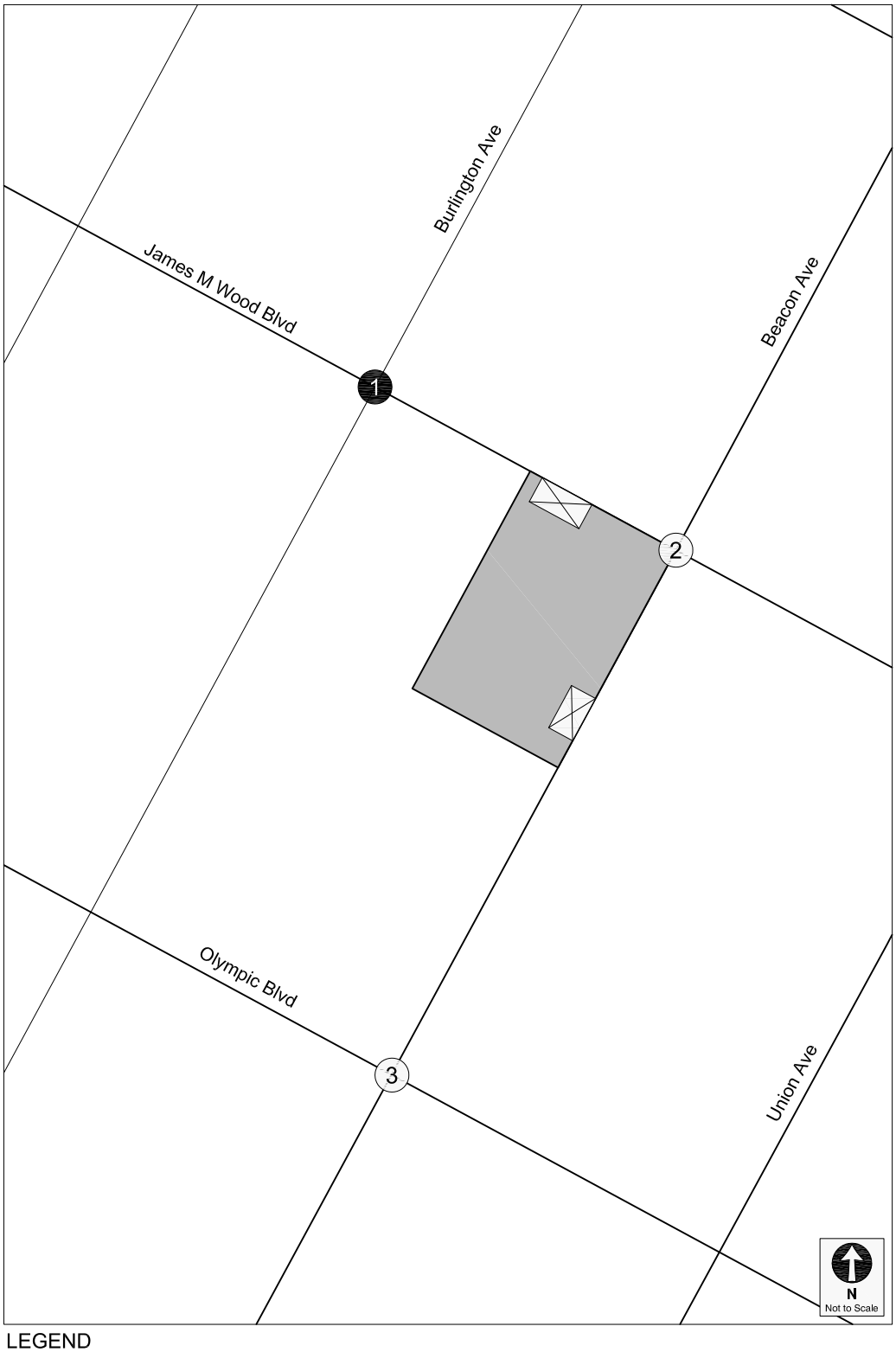
Mobility Plan. In the Mobility Plan, the City identifies key corridors as components of various "mobility-enhanced networks." Each network is intended to focus on improving a particular aspect of urban mobility, including transit, neighborhood connectivity, bicycles, pedestrians, and vehicles. The specific improvements that may be implemented in those networks have not yet been identified and there is no schedule for implementation; therefore, no changes to vehicular lane configurations were made as a result of the Mobility Plan. However, the following mobility-enhanced networks included corridors within or near the Study Area:

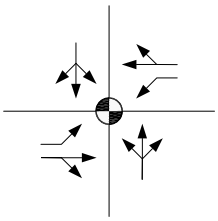
- Transit Enhanced Network: No streets were identified as part of the Transit Enhanced Network.
- Neighborhood Enhanced Network: Beacon Avenue was identified as part of the Neighborhood Enhanced Network.
- Bicycle Enhanced Network / Bicycle Lane Network / Protected Bicycle Facilities Network: No adjacent streets were identified as part of the Bicycle Enhanced Network, Bicycle Lane Network, or Protected Bicycle Facilities Network.
- Pedestrian Enhanced Districts: James M. Wood Boulevard west of Burlington Avenue and east of Beacon Avenue, 8th Street, Union Avenue, and Olympic Boulevard were identified as part of the Pedestrian Enhanced Districts.

Metro Regional Connector. The Metro Regional Connector project is a 1.9-mile underground light rail system that will extend from Little Tokyo to the 7th Street/Metro Center Station, allowing passengers to make direct transfers between the Gold, Blue, and Expo Lines. The Metro Regional Connector will improve access to both local and regional destinations by providing continuous service between these lines and providing connectors to other rail lines via the 7th Street/Metro Center Station. Three new transit stations will be developed with the operation of the Metro Regional Connector. Based on recent information provided on the Metro website[2], the Metro

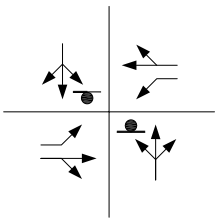
[2] Construction updates for the Metro Regional Connector are based on information provided at www.metro.net (accessed on January 9, 2020).

Regional Connector is anticipated to be complete and in operation by Year 2022. The Metro Regional Connector will be primarily underground and will not affect the intersection or street configurations in the Study Area.

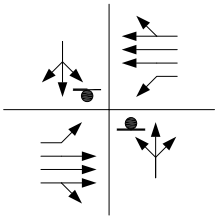




1. Burlington Avenue & James M Wood Boulevard



2. Beacon Avenue & James M Wood Boulevard



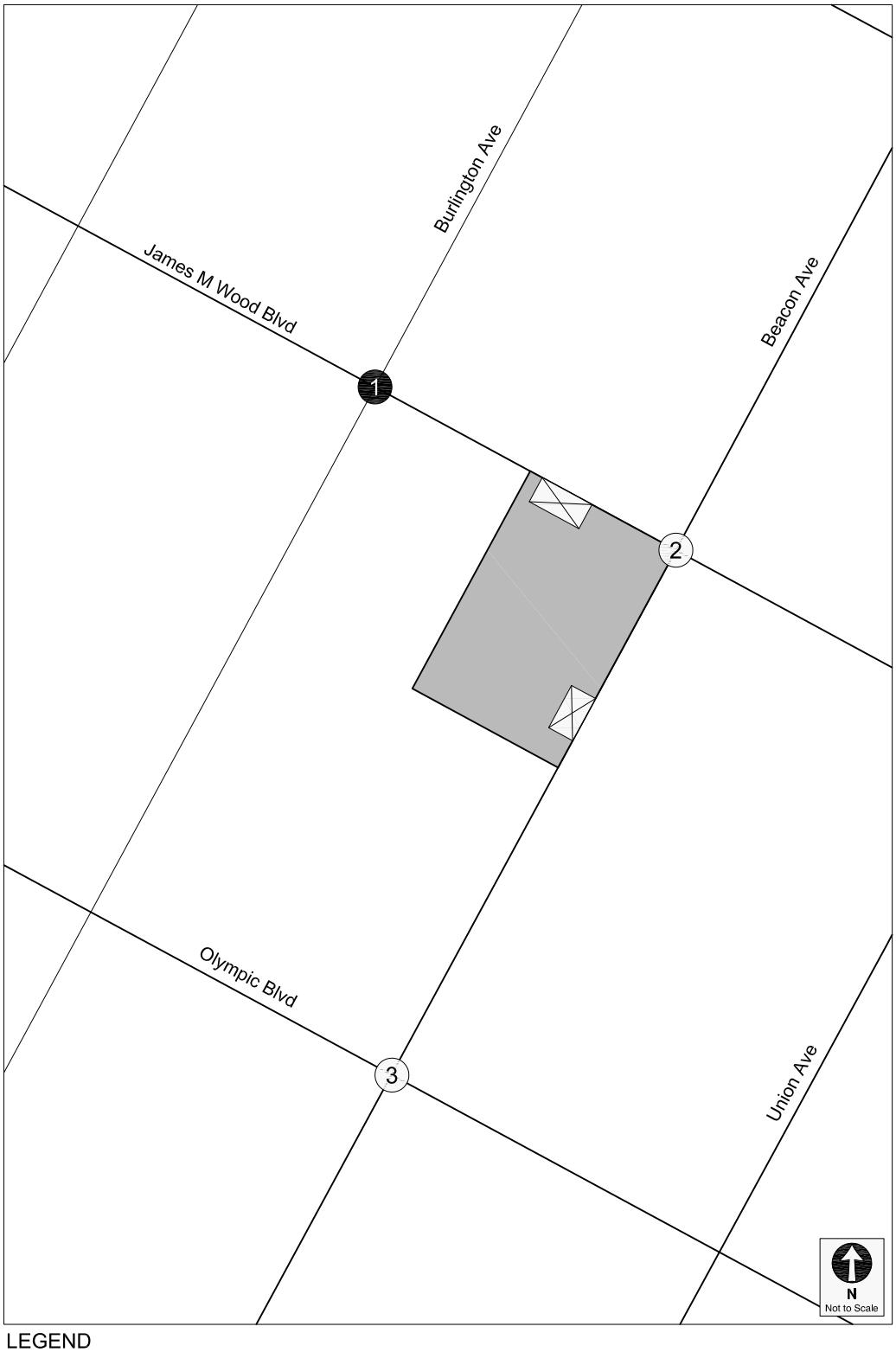
3. Beacon Avenue & Olympic Boulevard

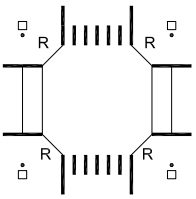
LEGEND

Project Site
Project Driveway
Signalized Intersection
Unsignalized Intersection
Traffic Signal
Stop Sign

INTERSECTION LANE CONFIGURATIONS

FIGURE 3





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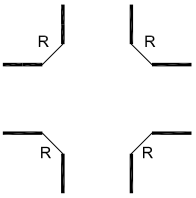

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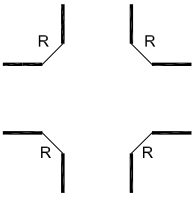


3. Beacon Avenue & Olympic Boulevard

LEGEND

- Project Site
- Project Driveway
- Signalized Intersection
- Unsignalized Intersection
- Continental Crosswalk
- R Ramp
- Ped Signal
- Ped Call Button

EXISTING INTERSECTION MOBILITY FACILITIES

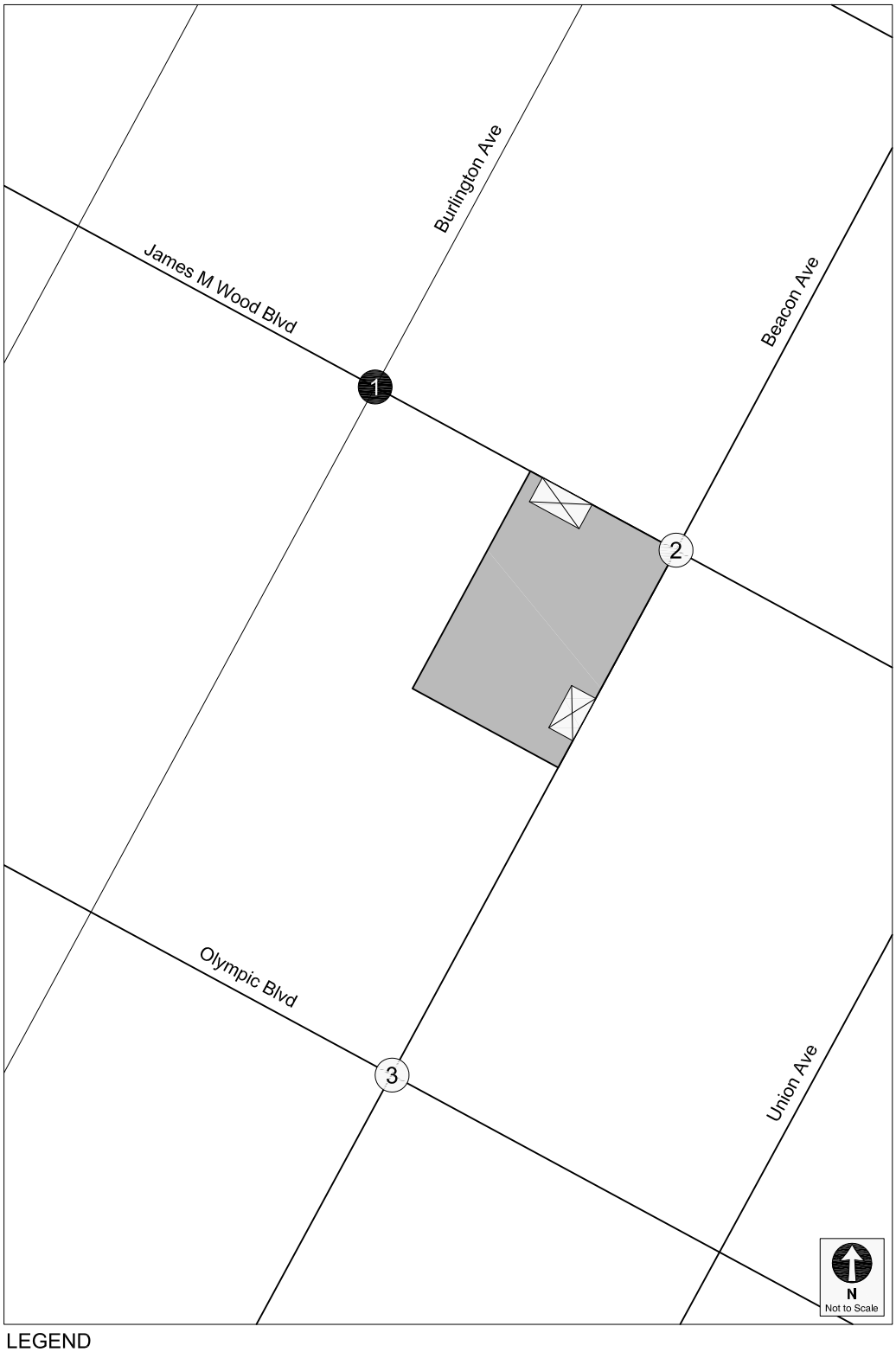
FIGURE 4

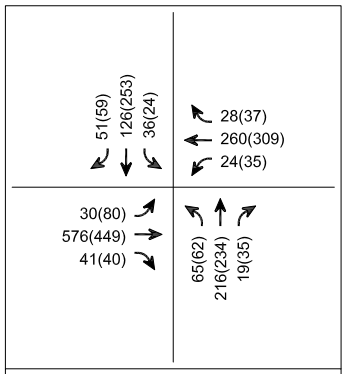
EXISTING TRANSPORTATION FACILITIES & PEDESTRIAN DESTINATIONS

FIGURE 5

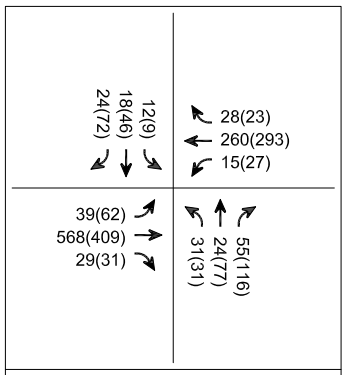
EXISTING TRANSIT SERVICE

FIGURE 6





1. Burlington Avenue & James M Wood Boulevard



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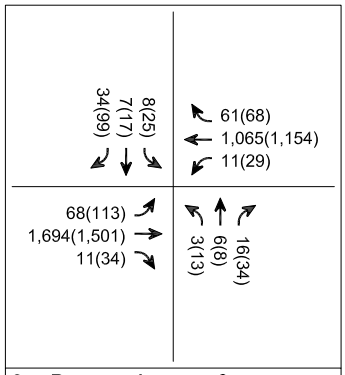


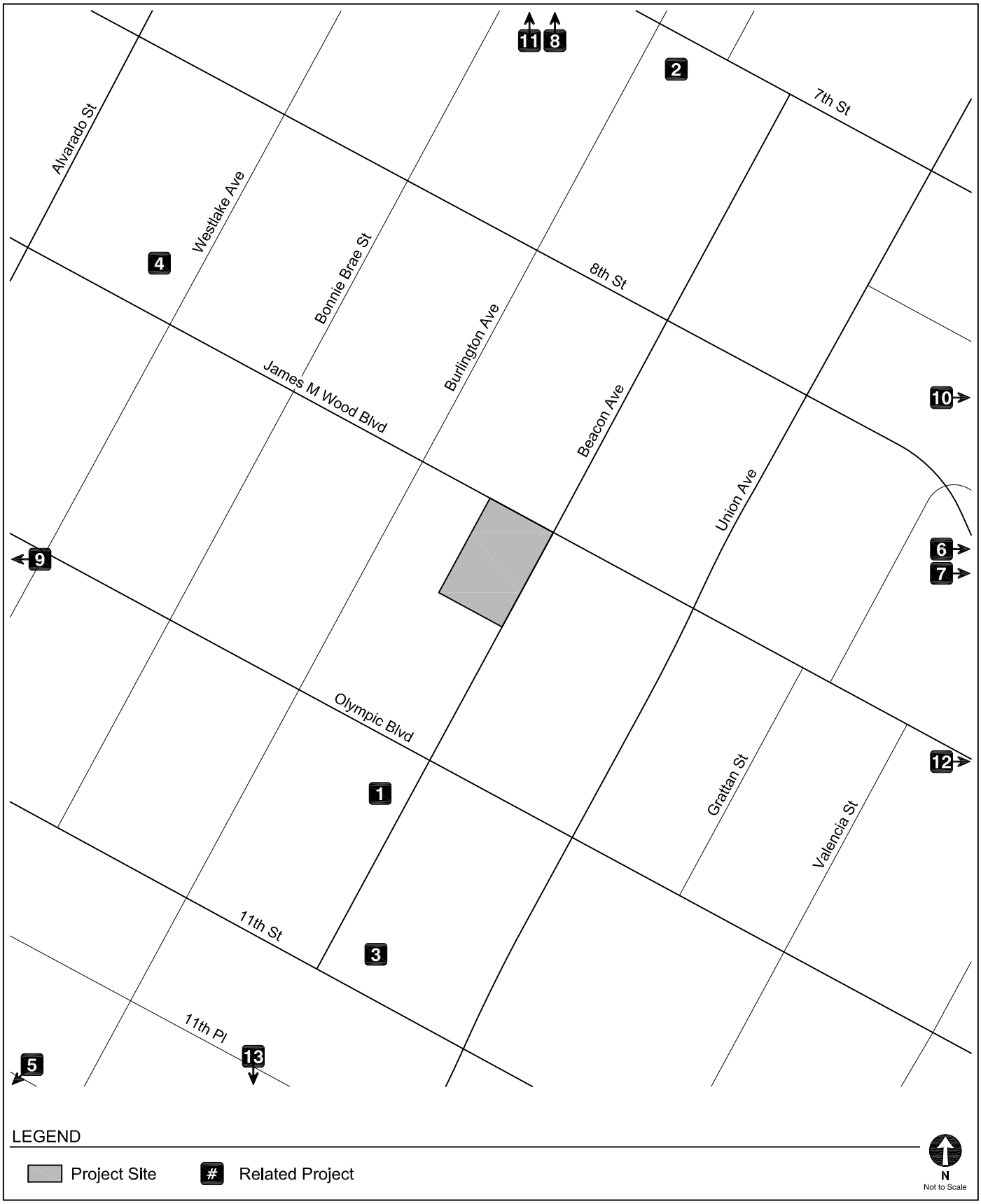
3. Beacon Avenue & Olympic Boulevard

LEGEND

- Project Site
- Project Driveway
- (#) Signalized Intersection
- (#) Unsignalized Intersection
- #(#) AM(PM) Peak Hour Traffic Volume

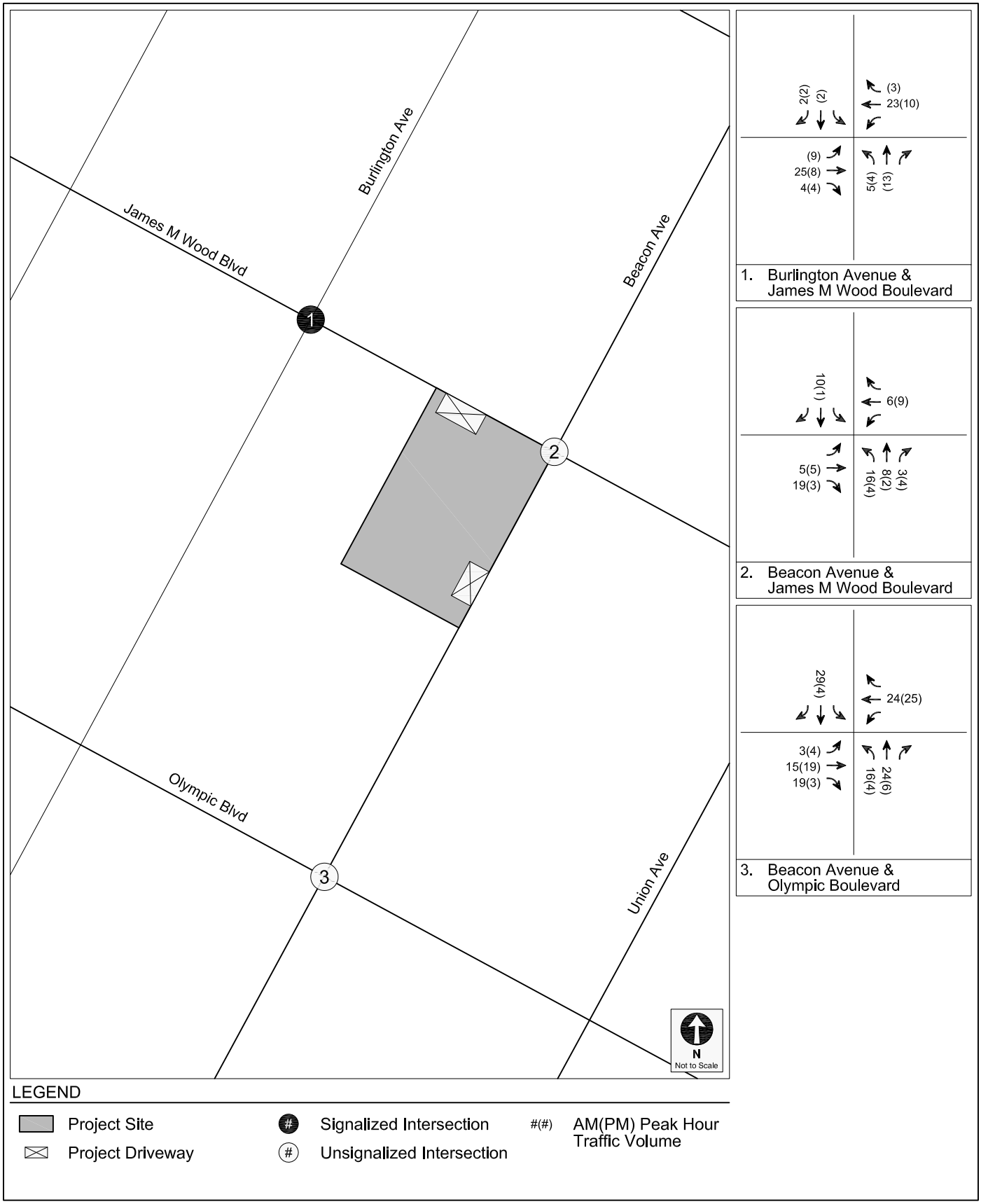
EXISTING CONDITIONS (YEAR 2020)
PEAK HOUR TRAFFIC VOLUMES

FIGURE 7



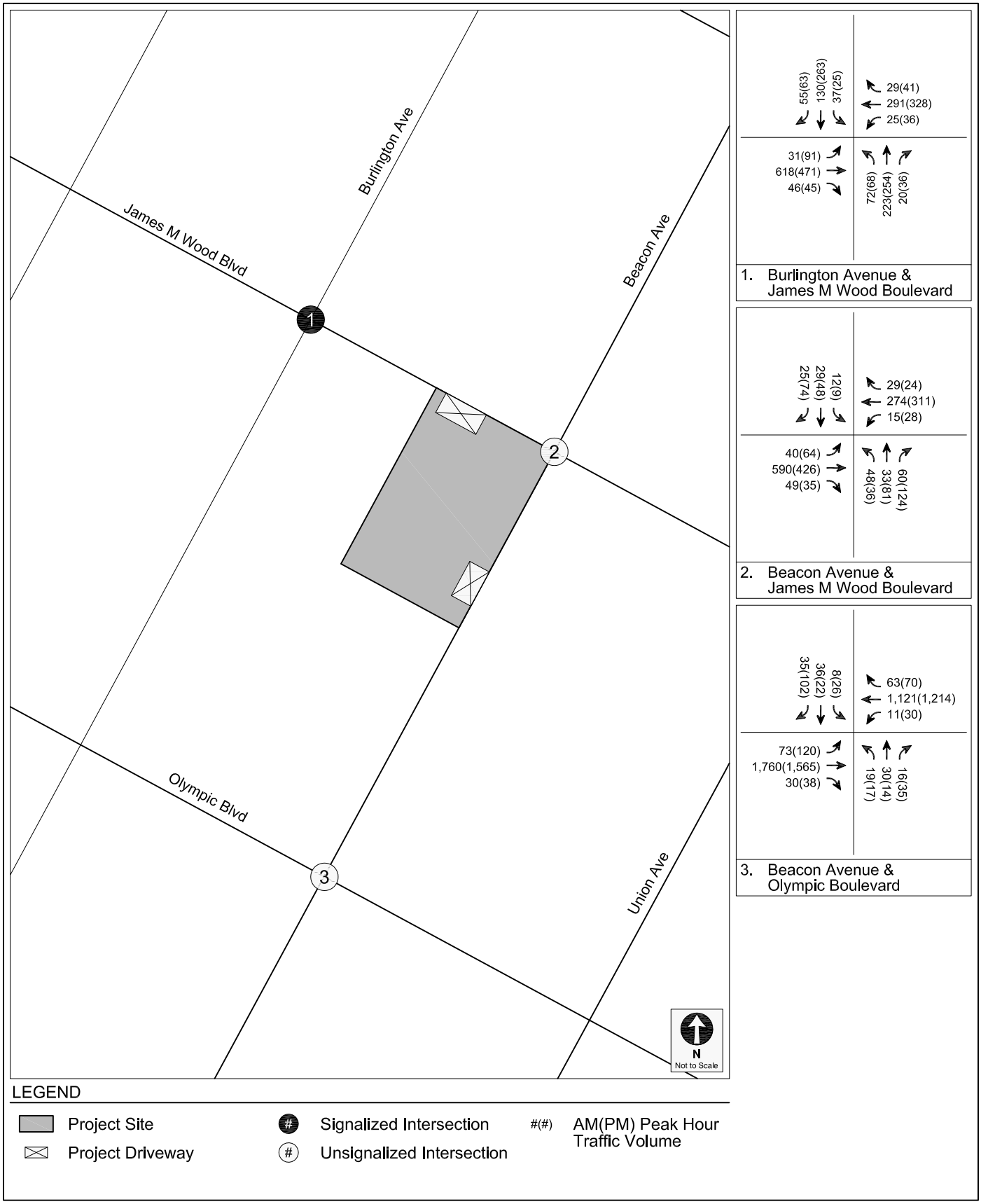
LOCATIONS OF RELATED PROJECTS

FIGURE 8



RELATED PROJECT-ONLY
PEAK HOUR TRAFFIC VOLUMES

FIGURE
9



FUTURE WITHOUT PROJECT CONDITIONS (YEAR 2023)
PEAK HOUR TRAFFIC VOLUMES

FIGURE 10

FUTURE TRANSPORTATION FACILITIES & ROADWAY MODAL PRIORITIES

FIGURE 11

TABLE 1
STUDY INTERSECTIONS

No	N/S Street	E/W Street
1.	Burlington Avenue	James M Wood Boulevard
2. [a]	Beacon Avenue	James M Wood Boulevard
3. [a]	Beacon Avenue	Olympic Boulevard

Notes
[a] Intersection is unsignalized.

TABLE 2
EXISTING TRANSIT SERVICE IN STUDY AREA

Provider, Route, and Service Area		Service Type	Hours of Operation	Average Headway (minutes) [a]			
				Morning Peak Period		Afternoon Peak Period	
Metro Bus Service				**NB/EB**	**SB/WB**	**NB/EB**	**SB/WB**
28	Downtown Los Angeles - Century City via W Olympic Boulevard	Local	4:30 AM - 1:30 AM	16	15	13	17
66	Downtown Los Angeles/Montebello - Wilshire Center via 8th Street & Olympic Boulevard	Local	4:30 A.M. - 1:30 A.M.	8	16	16	11
200	Echo Park - Exposition Park via Alvarado Street & Hoover Street	Local	5:00 AM - 1:30 AM	10	10	9	9
728	Downtown Los Angeles - Century City via West Olympic Boulevard	Rapid	5:00 AM - 9:00 PM	14	13	14	15
LADOT DASH Bus Service				**NB/EB**	**SB/WB**	**NB/EB**	**SB/WB**
PUEP	Pico Union/Echo Park	Local	7:00 A.M. - 7:00 P.M.	14	10	14	10

Notes
Metro: Los Angeles County Metropolitan Transportation Authority; LADOT DASH: Los Angeles Department of Transportation Downtown Area Shuttle.
Morning Peak Period from 6:00 AM to 10:00 AM; Afternoon Peak Period from 3:00 PM to 7:00 PM.
[a] Average headways are based on the total number of trips during the peak period as indicated in Metro ridership data from April, 2019.

TABLE 3
TRANSIT SYSTEM CAPACITY SERVING THE PROJECT SITE

Provider, Route, and Service Area		Capacity per Trip [a]	Peak Hour Ridership [b]				Average Remaining Capacity per Trip		Remaining Peak Hour Capacity	
			Peak Load		Average Load					
			NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
MORNING PEAK HOUR										
Metro Bus Service										
28	Downtown Los Angeles - Century City via W Olympic Boulevard	50	31	17	22	12	28	38	105	152
66	Downtown Los Angeles/Montebello - Wilshire Center via 8th Street & Olympic Boulevard	50	56	21	34	14	16	36	116	135
200	Echo Park - Exposition Park via Alvarado Street & Hoover Street	50	33	33	28	24	22	26	127	163
728	Downtown Los Angeles - Century City via West Olympic Boulevard	50	29	27	19	16	31	34	132	153
LADOT DASH Bus Service										
PUEP	Pico Union/Echo Park	30	n/a	n/a	12	12	18	18	77	108
								Total Transit System Capacity	**1,266**	
AFTERNOON PEAK HOUR										
Provider, Route, and Service Area		**Capacity per Trip** [a]	**Peak Hour Ridership** [b]				**Average Remaining Capacity per Trip**		**Remaining Peak Hour Capacity**	
			Peak Load		**Average Load**					
			NB/EB	**SB/WB**	**NB/EB**	**SB/WB**	**NB/EB**	**SB/WB**	**NB/EB**	**SB/WB**
Metro Bus Service										
28	Downtown Los Angeles - Century City via W Olympic Boulevard	50	27	32	16	23	34	27	153	95
66	Downtown Los Angeles/Montebello - Wilshire Center via 8th Street & Olympic Boulevard	50	29	41	19	31	31	19	116	105
200	Echo Park - Exposition Park via Alvarado Street & Hoover Street	50	41	40	27	31	23	19	161	133
728	Downtown Los Angeles - Century City via West Olympic Boulevard	50	23	34	18	23	32	27	136	108
LADOT DASH Bus Service										
PUEP	Pico Union/Echo Park	30	n/a	n/a	9	9	21	21	89	126
								Total Transit System Capacity	**1,222**	

Notes
Metro: Los Angeles County Metropolitan Transportation Authority.
[a] Capacity assumptions:
Metro Bus - 40 seated / 50 standing.
LADOT DASH - 25 seated / 30 seated and standing.
[b] Ridership information based on data from Metro for April 2019.

TABLE 4
RELATED PROJECT TRIP GENERATION ESTIMATES

No.	Project	Address	Distance from Project Site	Description	Trip Generation Estimates						
					Daily	Morning Peak Hour			Afternoon Peak Hour		
						In	Out	Total	In	Out	Total
1.	Hotel Olympia	1700 W Olympic Bl	0.1 miles	160-room hotel	1,157	44	32	76	45	42	87
2.	Restaurants & Bar	1728 W 7th St	0.2 miles	9,600 sf restaurant and 3,500 sf bar	362	(30)	(40)	(70)	50	17	64
3.	1633 W 11th Street Charter School (K-5)	1633 W 11th St	0.2 miles	460-student K-5 charter school	970	194	158	352	29	37	66
4.	2005 James M Wood Hotel	2005 James M Wood Bl	0.2 miles	100-room hotel	545	24	18	42	20	18	38
5.	Charter High School	1929 W Pico Bl	0.5 miles	480-student high school	821	140	66	206	20	42	62
6.	Apartments	740 S Hartford Ave	0.4 miles	80 apartment units	479	7	30	37	29	15	44
7.	1322 Linwood Apartments	1322 W Linwood Ave	0.3 miles	84 apartment units	449	5	30	35	28	14	42
8.	1930 Wilshire MU	1930 W Wilshire Bl	0.4 miles	478 apartment units, 850-seat theatre, 50-student classroom, and 220-room hotel	1,355	(44)	128	85	103	(41)	61
9.	Assisted Living	1030 S Lake St	0.4 miles	338 assisted living beds and 34 senior housing units	939	39	23	62	49	48	97
10.	Mixed-Use (Lifan Tower)	1235 W 7th St	0.4 miles	306 apartment units and 5,960 sf retail	1,959	30	108	138	114	66	181
11.	Westlake Housing Project	619 S Westlake Ave	0.5 miles	78 apartment units with 60 affordable housing units, 17 permanent supportive housing, and one manager unit	233	11	16	27	11	9	20
12.	Ethos Societe	806 S Garland Ave	0.5 miles	120 apartment units, 33,703 sf office, 6,906 sf retail, and 10,049 sf day care center	1,215	73	61	134	67	87	154
13.	1612 W Pico Charter School (K-4)	1612 W Pico Bl	0.5 miles	1000-student K-4 school	2,182	434	280	714	65	82	147

Notes

[a] Related project information provided by the Los Angeles Department of Transportation in July 2020, Department of City Planning, and recent traffic studies prepared in the area.

Chapter 3
CEQA Analysis of Transportation Impacts

This chapter presents the results of an analysis of CEQA-related transportation impacts. The analysis identifies any potential conflicts the Project may have with adopted City plans and policies and the improvements associated with the potential conflicts, as well as the results of a Project vehicle miles traveled (VMT) analysis that satisfies State requirements under *State of California Senate Bill 743* (Steinberg, 2013) (SB 743).

METHODOLOGY

SB 743, made effective in January 2014, required the Governor's Office of Planning and Research to change the CEQA guidelines regarding the analysis of transportation impacts. Under SB 743, the focus of transportation analysis shifts from driver delay (level of service [LOS]) to VMT, in order to reduce of greenhouse gas emissions (GHG), create multimodal networks, and promote mixed-use developments.

To adapt to SB 743, the Los Angeles City Planning Commission, on February 28, 2019, recommended the approval of revised Los Angeles CEQA guidelines to include new transportation analysis screening procedures and thresholds, subsequently approved by the Los Angeles City Council on July 30, 2019. The TAG defines the methodology of analyzing a project's transportation impacts in accordance with SB 743.

Per the TAG, the CEQA transportation analysis contains the following thresholds for identifying significant impacts:

- Threshold T-1: Conflicting with Plans, Programs, Ordinances, or Policies
- Threshold T-2.1: Causing Substantial Vehicle Miles Traveled (VMT)
- Threshold T-2.2: Substantially Inducing Additional Automobile Travel

- Threshold T-3: Substantially Increasing Hazards Due to a Geometric Design Feature or Incompatible Use

The thresholds were reviewed and analyzed, as detailed in the following Sections 3A-3D. In addition, a CEQA safety analysis of California Department of Transportation (Caltrans) facilities for the Project is provided in Section 3E.

Section 3A: Threshold T-1
Conflicting with Plans, Programs, Ordinances, or Policies Analysis

Threshold T-1 states that a project would result in an impact if it conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle, and pedestrian facilities.

PLANS, PROGRAMS, ORDINANCES, AND POLICIES

Table 2.1-1 of the TAG provides the City plans, policies, programs, ordinances and standards relevant in determining project consistency. Attachment D of the TAG, *Plans, Policies, and Programs Consistency Worksheet,* provides a structured approach to evaluate whether a project conflicts with the City's plans, programs, ordinances, or policies and to streamline the review by highlighting the most relevant plans, policies, and programs when assessing potential impacts on the City's transportation system. The *Plans, Policies, and Programs Consistency Worksheet* was completed for the Project and provided in Appendix C.

As stated in Section 2.1.4 of the TAG, a project that generally conforms with and does not obstruct the City's development policies and standards will generally be considered to be consistent. The Project is consistent with the City documents listed in Table 2.1-1 of the TAG; therefore, the Project would not result in a significant impact under Threshold T-1. Detailed discussion of the plans, programs, ordinances, or policies is provided below.

Mobility Plan

The Mobility Plan combines "complete street" principles with the following five goals and objectives that define the City's mobility priorities:

- Safety First: Design and operate streets in a way that enables safe access for all users, regardless of age, ability, or transportation mode of choice.

- World Class Infrastructure: A well-maintained and connected network of streets, paths, bikeways, trails, and more provides Angelenos with the optimum variety of mode choices.

- Access for All Angelenos: A fair and equitable system must be accessible to all and must pay particularly close attention to the most vulnerable users.

- Collaboration, Communication, and Informed Choices: The impact of new technologies on our day-to-day mobility demands will continue to become increasingly important to the future. The amount of information made available by new technologies must be managed responsibly in the future.

- Clean Environments and Healthy Communities: Active transportation modes such as bicycling and walking can significantly improve personal fitness and create new opportunities for social interaction, while lessening impacts on the environment.

Adjacent to the Project Site, James M. Wood Street provides two travel lanes, one westbound and one eastbound lane, as well as a two-way left-turn median. Thus, the driveway along James M. Wood Boulevard would safely accommodate both left-turn and right-turn ingress and egress maneuvers, as the median allows for full access to the driveway. Adjacent to the Project Site, Beacon Avenue provides two travel lanes, one northbound and one southbound lane. The driveway along Beacon Avenue would allow for full access as well. With the development of the Project, James M. Wood Boulevard and Beacon Avenue along the Project frontage would be improved to provide sidewalks in order to meet the long-term mobility goals of the Mobility Plan. Additionally, Beacon Avenue will feature a five-foot side yard setback, providing more landscaped space for pedestrians. The Project would provide safe access for all mode users. Thus, the Project would be consistent with the Safety First goal.

The Project proposes new driveways along Beacon Avenue and James M. Wood Boulevard, a designated Local Street and Avenue III, respectively, in the Mobility Plan. Beacon Avenue requires a 60-foot right-of-way width and 36-foot roadway width, and James M. Wood Boulevard requires a 72-foot right-of-way width and 46-foot roadway width. The Project would dedicate one foot along the James M. Wood Boulevard frontage to meet the right-of-way standards of the Mobility Plan. Truck loading access would also be provided via the new driveway on James M. Wood Boulevard. Neither James M. Wood Boulevard nor Beacon Avenue have been identified as part of the Mobility Plan's Transit Enhanced Network or Bicycle Enhanced Network. Beacon Avenue has been identified as part of the Mobility Plan's Neighborhood Enhancement Network. The Project frontage along Beacon Avenue would be lined with street trees as visual cues to the neighborhood character of the streets. Thus, the Project would provide for a well-maintained and

connected network of transportation mode choices, and the Project would be consistent with the World Class Infrastructure goal.

The Project does not propose repurposing existing curb space and does not propose narrowing or shifting existing sidewalk placement or paving, narrowing, shifting, or removing an existing parkway. Further, the Project does not propose modifying, removing, or otherwise affecting existing bicycle infrastructure, and the Project driveways are not proposed along a street with a bicycle facility. Thus, the Project would be consistent with the Access for All Angelenos goal.

The Project would provide marketing materials on-site to make residents and visitors aware of alternative transportation options to promote the benefits of transportation demand management (TDM). Thus, the Project would be consistent with the Collaboration, Communication, and Informed Choices goal.

As part of the Project, secured bicycle parking facilities would be provided. This would promote active transportation modes such as biking and walking. Thus, the Project would be consistent with the Clean Environments and Healthy Communities goal.

Based on these elements of design and infrastructure, the Project would be consistent with the Mobility Plan.

Plan for a Healthy Los Angeles

Plan for a Healthy Los Angeles: A Health and Wellness Element of the General Plan (LADCP, March 2015) introduces guidelines for the City to follow to enhance the City's position as a regional leader in health and equity, encourage healthy design and equitable access, and increase awareness of equity and environmental issues.

The Project prioritizes safety and access for all individuals utilizing the site by providing direct pedestrian entrances connected to public pedestrian facilities and ADA accessible. Further, the Project supports healthy lifestyles by locating housing and jobs adjacent to transit (Metro Local and Rapid bus lines), providing bicycle amenities, and enhancing the pedestrian environment by

providing canopy trees and other landscape elements to provide adequate shade and habitat to for a more comfortable environment for pedestrians.

Thus, the Project would be consistent with the goals of *Plan for a Healthy Los Angeles*.

Land Use Element of the General Plan

The City General Plan's Land Use Element contains 35 Community Plans that establish specific goals and strategies for the various neighborhoods across the City. The Project is located within the *Westlake Community Plan* (Community Redevelopment Agency of the City of Los Angeles (CRA/LA), September 1997) (the Community Plan) area.

The Project design would be consistent with the goals of the Community Plan, as the Project would expand both housing and commercial retail opportunities, provide employment opportunities, provide connections between public open spaces and pedestrian facilities, and create a mobility-friendly environment through active ground floor uses and pedestrian-oriented design.

Because the Project would be consistent with the goals of the Community Plan, it would also be consistent with the goals of the General Plan.

Redevelopment Plan

The Project Site is located within the *Redevelopment Plan for the Westlake Recovery Redevelopment Project* (CRA/LA, Adopted May 1999) (Redevelopment Plan) area. The Redevelopment Plan's purpose is to further improve the Westlake neighborhood, as related to transportation and traffic, by "encouraging the expansion and improvement of public transportation in coordination with other public improvement projects" and by "supporting a circulation system which will improve the quality of life in Westlake, including pedestrian, automobile, bus connections, parking and mass transit systems with an emphasis on serving existing facilities and meeting future needs."

The Project proposes to develop new residential and commercial uses in Westlake less than 0.5 miles from the Metro Red/Purple Line Westlake/MacArthur Park Station and encourages the use of alternative modes of transportation by providing bicycle facilities.

Thus, the Project would be consistent with the Redevelopment Plan goals.

Los Angeles Municipal Code (LAMC) Section 12.21.A.16 (Bicycle Parking)

LAMC Section 12.21.A.16 details the bicycle parking requirements for new developments. As further detailed in Section 4G, the proposed short-term and long-term bicycle parking supply would satisfy the LAMC requirement for the Project to provide 12 short-term bicycle parking spaces and 99 long-term bicycle parking spaces within the Project's on-site parking facility.

LAMC Section 12.26J (TDM Ordinance)

LAMC Section 12.26J, the TDM Ordinance (1993) establishes TDM requirements for non-residential projects, in addition to non-residential components of the mixed-use projects, in excess of 25,000 sf. The commercial component of the Project is 2,400 sf. Therefore, the requirements of LAMC Section 12.26J do not apply to the Project.

LAMC Section 12.37 (Waivers of Dedications and Improvement)

LAMC Section 12.37 states that a project must dedicate and improve adjacent highway and Collector Streets to half-right-of-way standards consistent with street designations from the Mobility Plan. Beacon Avenue currently meets the Mobility Plan standards for a Local Street and, therefore, the Project would not be required to provide any street dedications or improvements on Beacon Avenue. The Project would be required to dedicate one foot along the James M. Wood Boulevard frontage to meet the designated half-right-of-way standards for an Avenue III. Therefore, the Project would be in compliance with the requirements of LAMC Section 12.37.

Vision Zero

Vision Zero implements projects that are designed to increase safety on the most vulnerable City streets. Several Vision Zero Safety Improvements are planned near the Project Site, including continental crosswalks at Beacon Avenue & James M. Wood Boulevard (Intersection #2) and Beacon Avenue & Olympic Boulevard (Intersection #3). The Project improvements to the pedestrian environment would not preclude future Vision Zero Safety Improvements by the City. Thus, the Project does not conflict with Vision Zero.

Streetscape Plans

The Project is not located within the boundaries of any streetscape plan and, therefore, streetscape plans do not apply to the Project.

Citywide Design Guidelines for Residential, Commercial, and Industrial Development

Citywide Design Guidelines (Los Angeles City Planning Urban Design Studio, October 2019) incorporates urban design principles pertaining to pedestrian-first design that serves to reduce VMT. *City of Los Angeles Urban Design Principles* (LADCP, 2011) aims to improve mobility in the City through transportation mode choices. The Project design includes pedestrian enhancements along the perimeter of the Project Site. In addition, sidewalks along Beacon Avenue and James M. Wood Boulevard would be maintained. Thus, open space and landscaping elements would be incorporated to provide a more comfortable mobility environment for pedestrians. Therefore, the Project would align with *Citywide Design Guidelines* and *City of Los Angeles Urban Design Principles* to provide a safe, comfortable, and accessible experience for all transportation modes.

Walkability Checklist

City of Los Angeles Walkability Checklist – Guidance for Entitlement Review (LADCP, November 2008) serves as a guide for creating improved conditions for pedestrians to travel and contribute to the overall walkability of the City and includes the following topics:

- Sidewalks
- Crosswalks/Street Crossings
- On-Street Parking
- Utilities
- Building Orientation
- Off-Street Parking and Driveways
- On-Site Landscaping
- Building Façade
- Building Signage and Lighting

The Project incorporates many of the recommended strategies applicable to residential and commercial developments, including but not limited to providing continuous and adequate sidewalks along the Project Site, enhancing pedestrian amenities by providing canopy trees and other landscape elements to provide adequate shade for a more comfortable mobility environment for pedestrians, designing direct primary entrances for pedestrians to be visible and ADA accessible, and locating parking beneath the building rather than exposed to the adjacent major streets.

LADOT Transportation Technology Strategy – Urban Mobility in a Digital Age

The LADOT transportation technology strategy, based on *Urban Mobility in a Digital Age: A Transportation Technology Strategy for Los Angeles* (Ashley Z. Hand, August 2016), is designed to ensure the City stays on top of emerging transportation technologies as both a regulator and a transportation service provider. This strategy document includes the following goals:

- Data as a Service: Providing and receiving real-time data to improve the City's ability to serve transportation needs
- Mobility as a Service: Improving the experience of mobility consumers by encouraging partnerships across different modes and fostering clear communication between transportation service providers
- Infrastructure as a Service: Re-thinking how the City pays for, maintains, and operates public, physical infrastructure to provide more transparency

The Project does not interfere with any of the general policy recommendations and/or pilot proposals set forth by this strategy document.

LADOT Manual of Policies and Procedures (Design Standards)

Manual of Policies and Procedures (LADOT, December 2008) provides plans and requirements for traffic infrastructure features in the City, including driveway design and placement guidelines. The Project driveways would be designed, per Section 321, to minimize conflicts between Project vehicles and the adjacent street traffic. Consistent with the maximum allowable width and number of driveways along arterial frontages (Avenue or Boulevard) of less than 200 feet, the Project would provide a 30-foot driveway along James M. Wood Boulevard, a designated Avenue III. In addition, the two-way left-turn median along James M. Wood Boulevard would allow for safer left-turn ingress and egress maneuvers. Adequate reservoir space between the back of sidewalk and the first parking stall and/or security gate would be provided at both the commercial and residential driveways.

The Project does not interfere with any of the policies and procedures contained in *Manual of Policies and Procedures*. Additionally, the Project complies with all applicable LADOT design standards.

CUMULATIVE ANALYSIS

In addition to potential Project-specific impacts, the TAG requires that the Project be reviewed in combination with nearby Related Projects to determine if there may be a cumulatively significant impact resulting from inconsistency with a particular program, plan, policy, or ordinance. In accordance with the TAG, the cumulative analysis must include consideration of any Related Projects within 0.50 miles of the Project Site and any transportation system improvements in the vicinity. Related Projects located within 0.50 miles of the Project Site are identified in Table 4.

Similar to the Project, the Related Projects would be individually responsible for complying with relevant plans, programs, ordinances, or policies addressing the circulation system. Thus, the Project, together with the Related Projects, would not result in cumulative impacts with respect to

consistency with each of the plans, ordinances, or policies reviewed. The Project and the Related Projects do not interfere with any of the general policy recommendations and/or pilot proposals and, therefore, there would be no significant Project impact or cumulative impact.

Section 3B: Threshold T-2.1
Causing Substantial VMT Analysis

The Mobility Plan sets forth objectives to decrease VMT. There are associated policies related to land use objectives aimed at shortening the distance between housing, jobs, and services, and increasing the availability of housing near transit, which offers more attractive non-vehicle alternatives and reduces vehicular trip making and congestion.

Threshold T-2.1 of the TAG analyzes whether a project causes substantial VMT and is generally applied to land use projects. Specifically, Threshold T-2.1 inquires whether the project would conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)(1). This subdivision states that (for land use projects) “vehicle miles travelled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact.” Public Resources Code Section 21064.3 defines a major transit stop as a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon commute periods. The Project Site is located within 0.5 miles of a major transit stop, the Metro B and D Line Westlake/MacArthur Park Station. This subdivision also states that a lead agency has discretion to choose the most appropriate method to evaluate a project’s VMT.

As the Lead Agency for this project, the City uses the analytical methods established by LADOT to determine impacts. Section 2.2.3 of the TAG states that a residential project would result in a significant VMT impact if it would generate household VMT per capita exceeding 15% below the existing average household VMT per capita for the Area Planning Commission (APC) area in which a project is located. Similarly, a commercial project would result in a significant VMT impact if it would generate work VMT per employee exceeding 15% below the existing average work VMT per employee for the APC area in which the project is located.

VMT METHODOLOGY

The following details the methodology that vehicle trips and VMT are calculated in *City of Los Angeles VMT Calculator Version 1.3* (July 2020) (VMT Calculator), as detailed in *City of Los Angeles VMT Calculator Documentation* (LADOT and LADCP, May 2020). LADOT developed the VMT Calculator to estimate project-specific daily household VMT per capita and daily work VMT per employee for developments within City limits, which are based on the following types of one-way trips:

- Home-Based Work Production: trips to a workplace destination originating from a residential use
- Home-Based Other Production: trips to a non-workplace destination (e.g., retail, restaurant, etc.) originating from a residential use
- Home-Based Work Attraction: trips to a workplace destination at the Project Site originating from a residential use

As detailed in *City of Los Angeles VMT Calculator Documentation*, the household VMT per capita threshold applies to Home-Based Work Production and Home-Based Other Production trips, and the work VMT per employee threshold applies to Home-Based Work Attraction trips, as the location and characteristics of residences and workplaces are often the main drivers of VMT, as detailed in Appendix 1 of *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Governor's Office of Planning and Research, December 2018). As noted in the TAG, small-scale retail/restaurant components less than 50,000 sf of larger mixed-use development projects are not considered for the purposes of identifying significant work VMT per employee impacts, as those trips are assumed to be local serving and would have a negligible effect on VMT.

Table 2.2-1 of the TAG details the following daily household VMT per capita and daily work VMT per employee impact criteria for the APC areas:

APC	Daily Household VMT per Capita	Daily Work VMT per Employee
Central	6.0	7.6
East LA	7.2	12.7
Harbor	9.2	12.3
North Valley	9.2	15.0
South LA	6.0	11.6
South Valley	9.4	11.6
West LA	7.4	11.1

The Project is located in the Central APC.

Other types of trips generated by the Project include Non-Home-Based Other Production (trips to a non-residential destination originating from a non-residential use at the Project Site), Home-Based Other Attraction (trips to a non-workplace destination at the Project Site originating from a residential use), and Non-Home-Based Other Attraction (trips to a non-residential destination at the Project Site originating from a non-residential use). These trip types are not factored into the VMT per capita and VMT per employee thresholds as those trips are typically localized and are assumed to have a negligible effect on the VMT impact assessment. However, those trips were factored into the calculation of total Project VMT for screening purposes when determining that VMT analysis for the Project would be required.

Travel Behavior Zone (TBZ)

The City developed TBZ categories to determine the magnitude of VMT and vehicle trip reductions that could be achieved through TDM strategies. As detailed in *City of Los Angeles VMT Calculator Documentation*, the development of the TBZs considered the population density, land use density, intersection density, and proximity to transit of each Census tract in the City and are categorized as follows:

1. *Suburban (Zone 1): Very low-density primarily centered around single-family homes and minimally connected street network.*

2. *Suburban Center (Zone 2): Low-density developments with a mix of residential and commercial uses with larger blocks and lower intersection density.*

3. *Compact Infill (Zone 3): Higher density neighborhoods that include multi-story buildings and well-connected streets.*

4. *Urban (Zone 4): High-density neighborhoods characterized by multi-story buildings with a dense road network.*

The VMT Calculator determines a Project's TBZ based on the latitude and longitude of the project address. The Project is located in an Urban (Zone 4) TBZ.

Mixed-Use Development Methodology

As detailed in *City of Los Angeles VMT Calculator Documentation*, the VMT Calculator accounts for the interaction of land uses within a mixed-use development and considers the following sociodemographic, land use, and built environment factors for a project area:

- The project's jobs/housing balance
- Land use density of the project
- Transportation network connectivity
- Availability of and proximity to transit
- Proximity to retail and other destinations
- Vehicle ownership rates
- Household size

Trip Lengths

The VMT Calculator estimates trip lengths based on information from the City's Travel Demand Forecasting (TDF) Model. The TDF Model considers the traffic analysis zones within 0.125 miles of the project to determine the average trip length and trip type, which factor into the calculation of the project's VMT.

Population and Employment Assumptions

As previously stated, the VMT thresholds identified in the TAG are based on household VMT per capita and work VMT per employee. Thus, the VMT Calculator contains population assumptions developed based on Census data for the City and employment assumptions derived from multiple data sources, including *2012 Developer Fee Justification Study* (Los Angeles Unified School District, 2012), the San Diego Association of Governments Activity Based Model, *Trip Generation Manual, 9th Edition* (Institute of Transportation Engineers, 2012), the US Department of Energy, and other modeling resources. A summary of population and employment assumptions for various land uses is provided in Table 1 of *City of Los Angeles VMT Calculator Documentation.*

TDM Measures

Additionally, the VMT Calculator measures the reduction in VMT resulting from a project's incorporation of TDM strategies as project design features or mitigation measures. The following seven categories of TDM strategies are included in the VMT Calculator:

1. Parking
2. Transit
3. Education and Encouragement
4. Commute Trip Reductions
5. Shared Mobility
6. Bicycle Infrastructure
7. Neighborhood Enhancement

TDM strategies within each of these categories have been empirically demonstrated to reduce trip-making or mode choice in such a way as to reduce VMT, as documented in *Quantifying Greenhouse Gas Mitigation Measures* (California Air Pollution Control Officers Association, 2010).

PROJECT VMT ANALYSIS

The VMT Calculator was used to evaluate Project VMT for comparison to the VMT impact criteria. The provide a conservative analysis, the VMT Calculator was modeled for 145 multi-family residential units and 2,400 sf of restaurant use at 905 S. Beacon Avenue.

Per *City of Los Angeles VMT Calculator User Guide* (LADOT and LADCP, May 2020), work VMT per employee is not reported for projects in which the commercial use is local-serving (i.e., less than 50,000 sf) and is considered to be less than significant. Therefore, the Project's 2,400 sf of commercial use would not result in a significant work VMT impact.

The VMT Calculator was set up with the Project's land use program and the respective sizes as the primary input. Based on the Project's proposed land uses and location, the following assumptions were identified in the VMT Calculator:

- Total Population: 327
- Total Employees: 10
- APC: Central
    - Household VMT Impact Threshold: 6.0 VMT per capita
    - Work VMT Impact Threshold: N/A
- TBZ: Urban
    - Maximum VMT Reduction: 75%

As previously discussed, the methodology inherent in the VMT Calculator accounts for the interaction of land uses within a mixed-use development and considers the sociodemographic, land use, and built environment factors for the Project Site and surrounding area. The VMT Calculator considers the interaction between different land uses within the Project. The Project location also considers the proximity to the Metro station, connectivity of walking or driving among different activities, and convenient trip destinations in the area. The Project land use and location information factors are key features that materially reduce single occupancy vehicle trips.

The VMT analysis results based on the VMT Calculator are summarized in Table 5. Detailed output from the VMT Calculator is provided in Appendix D.

Project VMT

The Project includes several design features, which include measures to reduce the number of single occupancy vehicle trips to the Project Site. For the purposes of this analysis, the Project's bicycle parking supply, which is in accordance with LAMC requirements, was accounted for in the VMT evaluation as a project design feature.

As shown in Table 5, the VMT Calculator estimates that the Project would generate 1,314 total household VMT. Thus, based on the population assumptions above, the Project would generate an average household VMT per Capita of 4.0, which falls below the significance thresholds for the Central APC (6.0 VMT per capita). Therefore, the Project would not result in a significant VMT impact, and no mitigation measures would be required.

CUMULATIVE ANALYSIS

Cumulative effects of development projects are determined based on the consistency with the air quality and GHG reduction goals of *Connect SoCal – The 2020--2045 Regional Transportation Plan / Sustainable Communities Strategy* (Southern California Association of Governments [SCAG], Adopted September 2020) (RTP/SCS) in terms of development location, density, and intensity. The RTP/SCS presents a long-term vision for the region's transportation system through Year 2045 and balances the region's future mobility and housing needs with economic, environmental, and public health goals. In addition, as detailed stated in the TAG, projects that do not demonstrate a project impact by applying an efficiency-based impact threshold (i.e., household VMT per capita, work VMT per employee) in the impact analysis, a less than significant impact conclusion is sufficient in demonstrating there is no cumulative VMT impact, as those projects are already shown to align with the long-term VMT and GHG goals of the RTP/SCS.

The Project would not result in a significant household VMT impact, as detailed above. Therefore, the Project is not anticipated to result in a cumulative VMT impact under Threshold T-2.1, and no further evaluation or mitigation measures would be required.

Furthermore, the Project is served by various local bus lines. In addition, the Project would be designed to further reduce single occupancy trips to the Project Site through TDM strategies including bicycle amenities and facilities.

Thus, the Project encourages a variety of transportation options and is consistent with the RTP/SCS goal of maximizing mobility and accessibility in the region. The Project would also contribute to the productivity and use of the regional transportation system by providing housing near transit and encourage active transportation by providing new bicycle parking and active street frontages, consistent with RTP/SCS goals.

TABLE 5
VMT ANALYSIS SUMMARY

Project Information	
Project Address	905 S Beacon St.
Project Land Uses	**Size**
Multi-Family Housing	145 units
Restaurant	2,400 sf
Project Analysis [a]	
Resident Population	327
Employee Population	10
Project Area Planning Commission	Central
Travel Behavior Zone [b]	Urban
Maximum VMT Reduction [c]	*75%*
VMT Analysis [d][e]	
Daily Vehicle Trips	650
Daily VMT	4,251
Household VMT	1,314
Household VMT per Capita	4.0
Impact Threshold	6.0
Significant Impact	NO

Notes

[a] Project Analysis is from VMT Calculator output reports provided in Appendix E.

[b] An "Urban" TBZ is characterized in *City of Los Angeles VMT Calculator Documentation* (LADOT and DCP, July 2020) as higher density neighborhoods that include multi-story buildings with a dense road network.

[c] The maximum allowable VMT reduction is based on the Project's designated TBZ.

[d] The Project design features include bicycle parking per LAMC requirements.

[e] The Project includes a small-scale/local-serving restaurant component (i.e., less than 50,000 sf), and therefore, is assumed to result in a less than significant work VMT impact

Section 3C: Threshold T-2.2
Substantially Inducing Additional Automobile Travel Analysis

Threshold T-2.2 applies to transportation projects. The TAG explains that transportation projects that increase vehicular capacity can lead to additional travel on the roadway network, which can include induced vehicle travel due to factors such as increased speeds and induced growth. The TAG also provides screening criteria and states that:

> "[i]f the answer is no to the following question, further analysis will not be required for Threshold T-2.2, and a no impact determination can be made for that threshold:
>
> > "T-2.2: Would the project include the addition of through traffic lanes on existing or new highways, including general purpose lanes, high-occupancy vehicle (HOV) lanes, peak period lanes, auxiliary lanes, and lanes through grade-separated interchanges (except managed lanes, transit lanes, and auxiliary lanes of less than one mile in length designed to improve roadway safety)?"

The Project does not include additional through traffic lanes on existing or new highways, general purpose lanes, high-occupancy vehicle lanes, peak period lanes, auxiliary lanes, or lanes through grade-separated interchanges. Accordingly, neither the Project nor any improvements associated with it are considered a transportation project. Therefore, Threshold T-2.2 does not apply to the Project and no further evaluation is required.

Section 3D: Threshold T-3

Substantially Increasing Hazards Due to a Geometric Design Feature or Incompatible Use Analysis

Further evaluation is required for projects that propose new access points or modifications along the public right-of-way (i.e., street dedications) under Threshold T-3. A review of Project access points, internal circulation, and parking access would determine if the Project would substantially increase hazards due to geometric design features, including safety, operational, or capacity impacts. Vehicular access to the Project Site would be provided via driveways on Beacon Avenue and James M. Wood Boulevard.

The proposed retail driveway along James M. Wood Boulevard would require a new curb cut along the public right-of-way. The Project would utilize the existing driveway located along Beacon Avenue to provide access to the residential parking levels. The existing driveway would be improved to meet City standards. Any unused curb cuts and driveways would be removed and replaced with sidewalks to maintain pedestrian walkway continuity. All driveways would be designed, placed, and configured to limit vehicle queues and bicycle/pedestrian-vehicle conflicts. Up to three on-street metered parking spaces along James M. Wood Boulevard and up to three on-street unmetered parking spaces on Beacon Avenue would be removed to accommodate the Project driveways. Thus, sight distance from the Project driveways would be further enhanced.

No unusual or new obstacles that would be considered hazardous to motorized vehicles, non-motorized vehicles, or pedestrians are presented in the design.

Based on the site plan review and design assumptions, the Project does not present any geometric design hazards related to traffic movement, mobility, or pedestrian accessibility, and is considered less than significant.

CUMULATIVE ANALYSIS

In addition to potential Project-specific impacts, the TAG requires that the Project be reviewed in combination with Related Projects with access points along the same block as the proposed project to determine if there may be a cumulatively significant impact. None of the Related Projects identified in Table 4 would provide access along the same block as the Project. Thus, the Project and Related Projects would not result in a cumulative impact under Threshold T-3.

Section 3E
Caltrans Analysis

Recently, LADOT issued *Interim Guidance for Freeway Safety Analysis* (LADOT, May 2020) (City Freeway Guidance) identifying City requirements for a CEQA safety analysis of Caltrans facilities as part of a transportation assessment.

ANALYSIS METHODOLOGY

The City Freeway Guidance relates to the identification of potential safety impacts at freeway off-ramps as a result of increased traffic from development projects. It provides a methodology and significance criteria for assessing whether additional vehicle queueing at off-ramps could result in a safety impact due to speed differentials between the mainline freeway lanes and the queued vehicles at the off-ramp.

Based on the City Freeway Guidance, a transportation assessment for a development project must include analysis of any freeway off-ramp where the project adds 25 or more peak hour trips. A project would result in a significant impact at such a ramp if each of the following three criteria were met:

1. Under a scenario analyzing future conditions upon project buildout, with project traffic included, the off-ramp queue would extend to the mainline freeway lanes[3].
2. A project would contribute at least two vehicle lengths (50 feet, assuming 25 feet per vehicle) to the queue.
3. The average speed of mainline freeway traffic adjacent to the off-ramp during the analyzed peak hour(s) is greater than 30 mph.

Should a significant impact be identified, mitigation measures to be considered include TDM measures to reduce a project's trip generation, investments in active transportation or transit

[3] If an auxiliary lane is provided on the freeway, then half the length of the auxiliary lane is added to the ramp storage length.

system infrastructure to reduce a project's trip generation, changes to the traffic signal timing or lane assignments at the ramp intersection, or physical changes to the off-ramp. Any physical change to the ramp would have to improve safety, not induce greater VMT, and not result in secondary environmental impacts.

ANALYSIS RESULTS

Based on the Project's trip generation estimate and traffic distribution pattern detailed in Section 4A, which were reviewed and approved by LADOT as part of the Project's MOU, the Project would not add 25 or more peak hour trips any Caltrans off-ramps. The Project consists of 145 residential units, where most residents are assumed to work in and commute locally to Downtown Los Angeles (approximately 0.75 miles east of the Project Site) via James M. Wood Boulevard and Olympic Boulevard.

Based on the Project's trip generation estimates described further in Chapter 4, even if all inbound Project traffic coming from the east on James M. Wood Boulevard and Olympic Boulevard utilized the nearest Caltrans off-ramp at Olympic Boulevard and SR 110, approximately 0.40 miles east of the Project, the maximum number of Project trips during the peak hours would be approximately 22 trips during the afternoon peak hour and would not meet the 25 peak hour trip threshold. Therefore, the Project would not add 25 or more peak hour trips to any Caltrans off-ramps and would not result in any significant safety impacts.

Chapter 4
Non-CEQA Transportation Analysis

This chapter summarizes the non-CEQA transportation analysis of the Project. It includes Project traffic, the expected access, safety, and circulation operations of the Project, and the nearby pedestrian, bicycle, and transit facilities. This chapter also summarizes the evaluation of the Project's operational conditions and effects due to Project construction.

Per Section 3.1 of the TAG, any deficiencies identified based on the non-CEQA transportation analysis is "not intended to be interpreted as thresholds of significance, or significance criteria for purposes of CEQA review unless otherwise specifically identified in Section 2." Section 3 of the TAG identifies the following four non-CEQA transportation analyses for reviewing potential transportation deficiencies that may result from a development project:

- Pedestrian, Bicycle, and Transit Access Assessment
- Project Access, Safety, and Circulation Evaluation
- Residential Street Cut-Through Analysis
- Project Construction

The four non-CEQA transportation analyses were reviewed in detail in Sections 4B-4E. In addition, a review of the proposed parking and the City's parking requirement for the Project is provided in Section 4G.

OPERATIONAL ANALYSIS METHODOLOGY

Intersection operations were evaluated for typical weekday morning (7:00 AM to 10:00 AM) and afternoon (3:00 PM to 6:00 PM) peak periods. A total of three intersections, one signalized and two unsignalized, were selected for detailed transportation analysis, as shown in Figure 2B.

The following traffic conditions were developed and analyzed as part of this study:

- Existing with Project Conditions: This analysis condition projects the potential intersection operating conditions that could be expected if the Project were built under existing conditions. In this scenario, the Project-generated traffic is added to the Existing Conditions.

- Future with Project Conditions (Year 2023): This analysis condition projects the potential intersection operating conditions that could be expected if the Project were built in the projected buildout year. In this analysis, the Project-generated traffic is added to Future without Project Conditions.

Operational Evaluation

In accordance with the TAG, the intersection delay and queue analyses for the operational evaluation were conducted using the *Highway Capacity Manual, 6th Edition* (Transportation Research Board, 2016) (HCM) methodology, which was implemented using Synchro software and signal timing worksheets from the City to analyze intersection operating conditions. The HCM signalized methodology calculates the average delay, in seconds, for each vehicle passing through the intersections, while the HCM unsignalized methodology calculates the control delay, in seconds, for individual approaches of an intersection. Table 6 presents a description of the LOS categories, which range from excellent, nearly free-flow traffic at LOS A to stop-and-go conditions at LOS F, for signalized and unsignalized intersections. The queue lengths were estimated using Synchro, which reports the 85th percentile queue length, in feet, for each approach lane. The reported queues are calculated using the HCM signalized and unsignalized intersection methodology.

LOS and queuing worksheets for each scenario are provided in Appendix E.

TABLE 6
INTERSECTION LEVEL OF SERVICE DEFINITIONS

Level of Service	Description	Delay [a]	
		Signalized Intersections	Unsignalized Intersections
A	EXCELLENT. No vehicle waits longer than one red light and no approach phase is fully used.	≤ 10	≤ 10
B	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.	> 10 and ≤ 20	> 10 and ≤ 15
C	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.	> 20 and ≤ 35	> 15 and ≤ 25
D	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.	> 35 and ≤ 55	> 25 and ≤ 35
E	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.	> 55 and ≤ 80	> 35 and ≤ 50
F	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.	> 80	> 50

Notes

Source: *Highway Capacity Manual, 6th Edition* (Transportation Research Board, 2016).

[a] Measured in seconds.

Section 4A
Project Traffic

Trip generation estimates, trip distribution patterns and trip assignments were prepared for the Project. These components form the basis of the Project's traffic analysis.

PROJECT TRIP GENERATION

The number of trips expected to be generated by the Project was estimated using rates published in *Trip Generation Manual, 10th Edition*. These rates are based on surveys of similar land uses at sites around the country and are provided as both daily rates and morning and afternoon peak hour rates. They relate the number of vehicle trips traveling to and from the Project Site to the size of development of each land use.

Allowable trip generation reductions to account for public transit usage and trips shared between the residential and commercial uses were made in consultation with LADOT. The trip generation estimates include a 15% transit/walk-in reduction, in accordance with the TAG, for a development within 0.25 miles of a Metro Rapid Bus stop (e.g., Metro Rapid Line 728 stop at Union Avenue & Olympic Boulevard). An internal capture adjustment of 5% was applied to the commercial component of the Project to account for person trips made between distinct land uses within a mixed-use development (e.g., residents visiting the commercial use) without requiring an additional vehicle trip. Additionally, a 20% pass-by reduction was applied to the commercial component to account for Project trips made as an intermediate stop on the way from an origin to a primary trip destination without route diversion.

As shown in Table 7, after accounting for the adjustments above, the Project is expected to generate 60 new morning peak hour trips (20 inbound, 40 outbound) and 69 new afternoon peak hour trips (42 inbound, 27 outbound).

PROJECT TRIP DISTRIBUTION

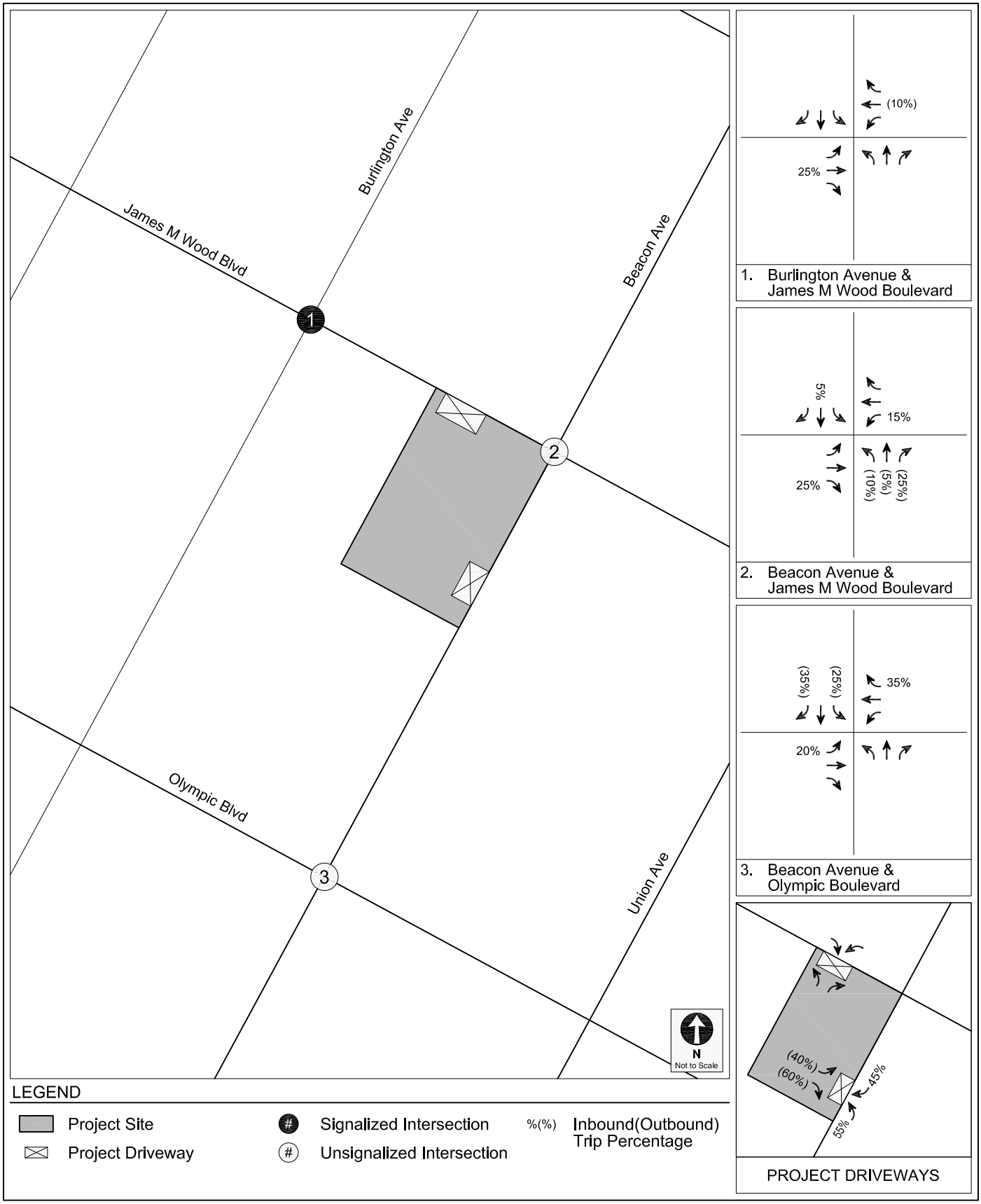
Similar to the trip distribution of traffic for the Related Projects described in Chapter 2, the geographic distribution of trips generated by the Project is dependent on the location of commercial and office centers from which residents and patrons of the Project would be drawn, the characteristics of the street system serving the Project Site, the level of accessibility of the routes to and from the Project Site, existing intersection traffic volumes, the Project ingress/egress availability based on the proposed site access and circulation scheme, and the location of the proposed driveways, as well as input from LADOT staff.

Access to the Project Site would be provided via two full-access driveways, one driveway for residential access on Beacon Avenue and one driveway for commercial access on James M. Wood Boulevard. Based on these considerations, traffic entering and exiting the Project was assigned to the surrounding street system. The intersection-level trip distribution patterns for the Project are shown in Figures 12A and 12B. Regionally, the pattern for both residential and commercial trip distribution is as follows:

- 15% to/from the north
- 40% to/from the east
- 25% to/from the south
- 20% to/from the west

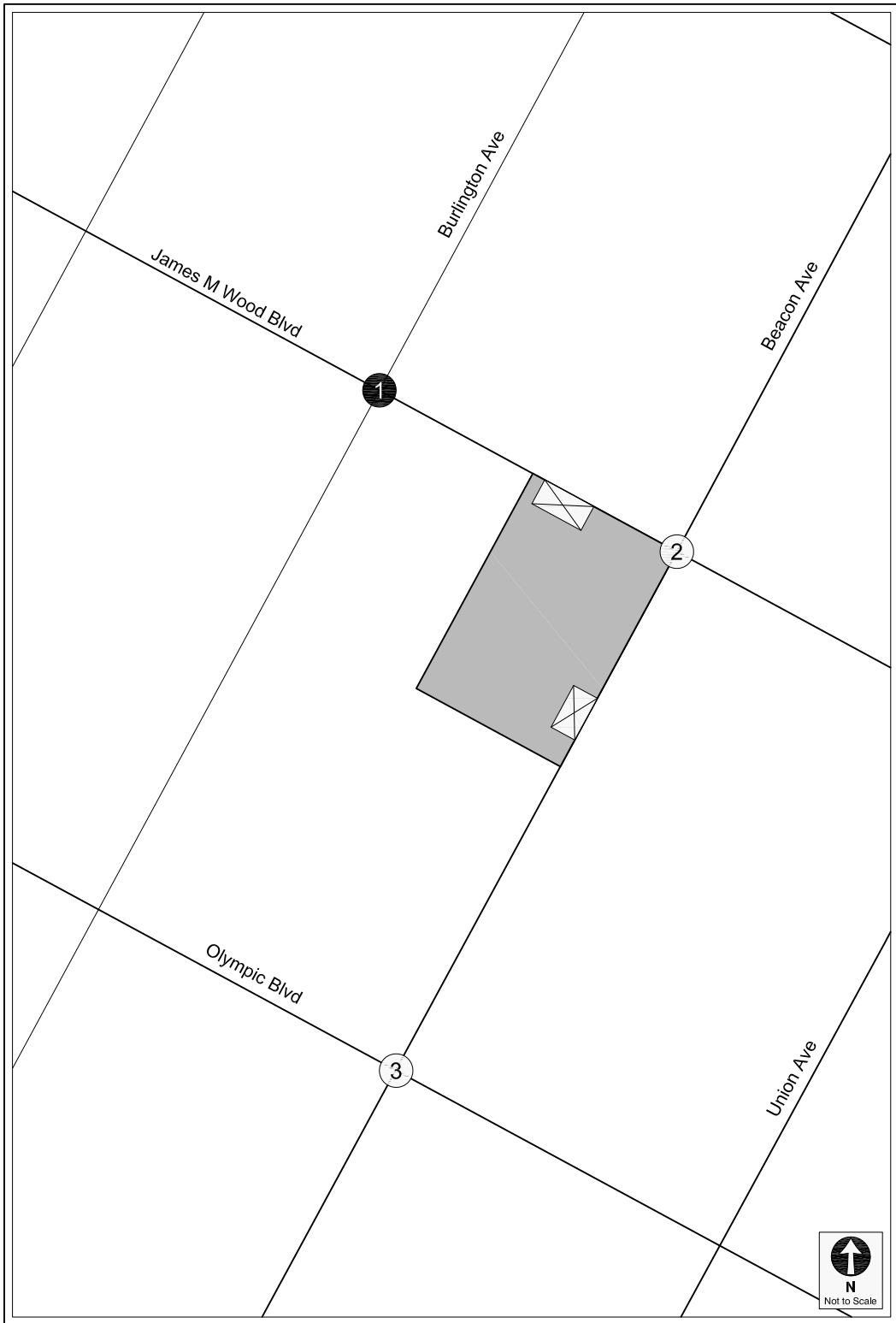
PROJECT TRIP ASSIGNMENT

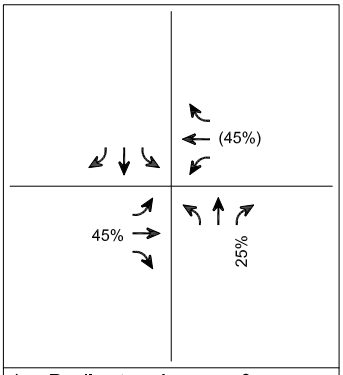
The Project trip generation estimates summarized in Table 7 and the trip distribution patterns shown in Figures 12A and 12B were used to assign the Project-generated traffic through the study intersections. Figure 13 illustrates Project-only traffic volumes at the study intersections during typical weekday morning and afternoon peak hours.



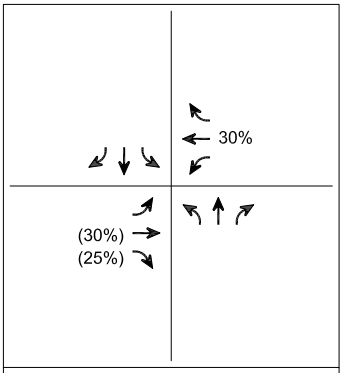
PROJECT TRIP DISTRIBUTION
RESIDENTIAL

FIGURE
12A

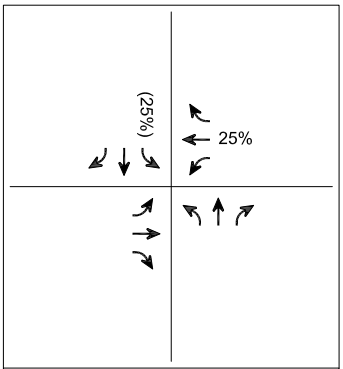




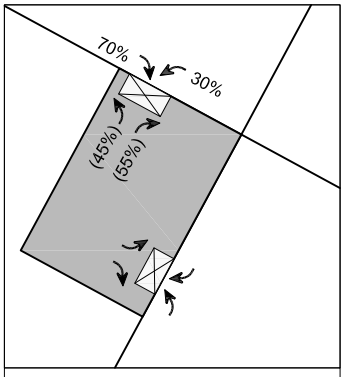
1. Burlington Avenue & James M Wood Boulevard



2. Beacon Avenue & James M Wood Boulevard



3. Beacon Avenue & Olympic Boulevard

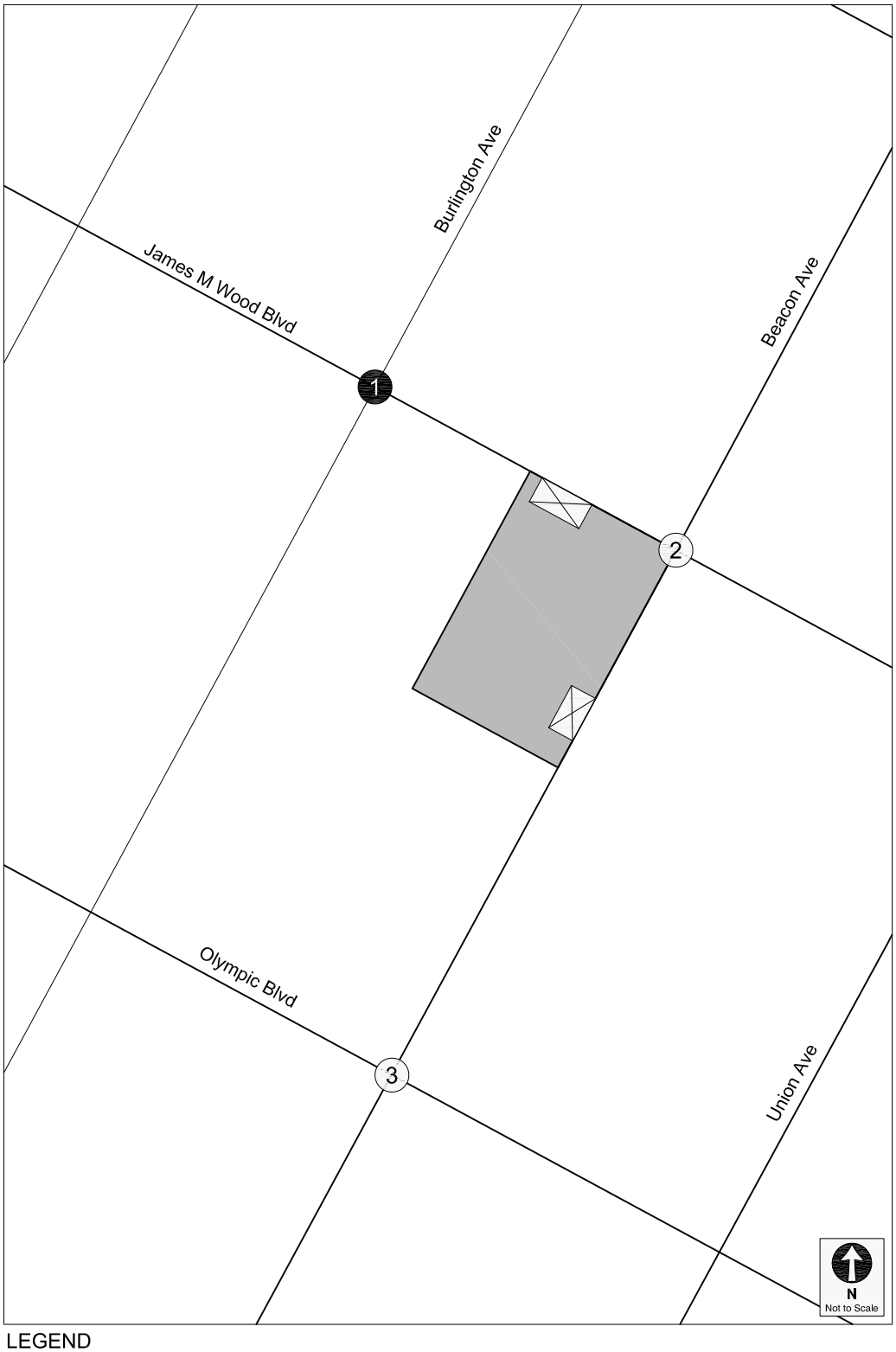


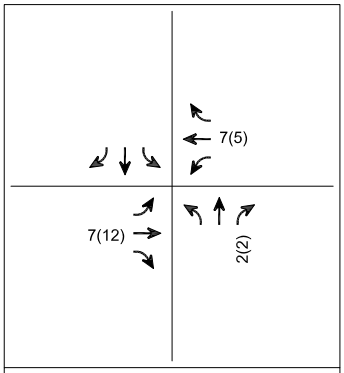
PROJECT DRIVEWAYS

LEGEND

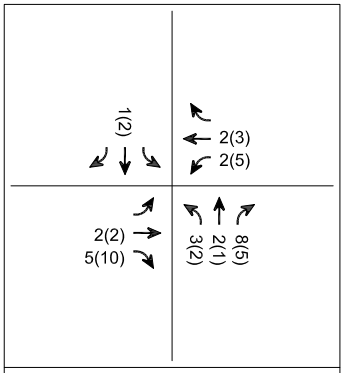
- Project Site
- Project Driveway
- (#) Signalized Intersection
- (#) Unsignalized Intersection
- %(%) Inbound(Outbound) Trip Percentage

PROJECT TRIP DISTRIBUTION COMMERCIAL	FIGURE 12B

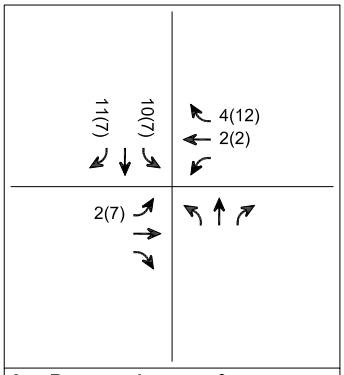




1. Burlington Avenue & James M Wood Boulevard



2. Beacon Avenue & James M Wood Boulevard



3. Beacon Avenue & Olympic Boulevard

LEGEND

Project Site	Signalized Intersection	#(#)	AM(PM) Peak Hour Traffic Volume
Project Driveway	Unsignalized Intersection		

PROJECT-ONLY
PEAK HOUR TRAFFIC VOLUMES

FIGURE
13

TABLE 7
PROJECT TRIP GENERATION ESTIMATES

Land Use	ITE Land Use	Rate or Size	Morning Peak Hour			Afternoon Peak Hour		
			In	Out	Total	In	Out	Total
Trip Generation Rates [a]								
Multi-Family Housing (Mid-Rise)	221	per du	26%	74%	0.36	61%	39%	0.44
High-Turnover (Sit-Down) Restaurant	932	per 1,000 sf	55%	45%	9.94	62%	38%	9.77
Trip Generation Estimates								
Multi-Family Housing (Mid-Rise)	221	145 du	14	38	52	39	25	64
Transit/Walk Adjustment - 15% [b]			*(2)*	*(6)*	*(8)*	*(6)*	*(4)*	*(10)*
Commercial	932	2,400 sf	13	11	24	14	9	23
Internal Capture - 5% [c]			*(1)*	*0*	*(1)*	*(1)*	*0*	*(1)*
Transit/Walk Adjustment - 15% [b]			*(2)*	*(1)*	*(3)*	*(2)*	*(1)*	*(3)*
Pass-By Adjustment - 20% [d]			*(2)*	*(2)*	*(4)*	*(2)*	*(2)*	*(4)*
TOTAL PROJECT TRIPS			**20**	**40**	**60**	**42**	**27**	**69**

Notes

du = dwelling unit; sf = square feet.

[a] Trip generation rates are from *Trip Generation, 10th Edition* (Institute of Transportation Engineers, 2017).

[b] Per LADOT's *Transportation Assessment Guidelines,* the Project Site is located within a 1/4 mile walking distance from the Metro Route 728 RapidBus stop at Olympic Boulevard and Union Avenue, therefore a transit reduction is applied to accountfor transit usage and walking visitor arrivals from the surrounding neighborhoods and adjacent commercial developments.

[c] Internal capture adjustments account for person trips made between distinct land uses within a mixed-use development without using an off-site road system (e.g., residents visiting commercial uses).

[e] Per LADOT's *Transportation Assessment Guidelines* , pass-by adjustment of 20% is applied to account for Project trips made as an intermediate stop on the way from an origin to a primary trip destination without route diversion.

Section 4B
Project Access and Circulation Assessment

This section summarizes the site access, safety, and circulation of the Project Site. It includes an evaluation of the expected access and circulation operations of the Project.

VEHICLES

This proposed circulation plan for the Project, as described, includes one full access driveway on Beacon Avenue for residential access and one on James M. Wood Boulevard for commercial access, along the eastern and northern Project boundaries, respectively. The driveway widths would conform to LADOT minimum standards for a driveway and includes a single inbound and single outbound travel lane. The circulation aisle widths of the parking areas would be designed to allow adequate and safe circulation of vehicles without significant conflicts and would conform to LADOT parking aisle width standards.

The vehicular access system is adequate to serve the site and no points of congestion that would affect traffic flow on the adjacent public streets are anticipated.

PEDESTRIANS AND BICYCLES

Pedestrian access to the Project Site would be provided via commercial and residential lobby entrances accessed from the sidewalks along Beacon Avenue and James M. Wood Boulevard. The Project access locations would be designed to provide adequate sight distance, sidewalks, crosswalks, and pedestrian movement controls that meet the City's requirements to protect pedestrian safety. All roadways and driveways intersect at right angles and street trees and other potential impediments to adequate driver and pedestrian visibility would be minimal.

Residents and patrons arriving by bicycle would have the same access opportunities as pedestrian visitors. As part of the Project, bicycle parking spaces and storage would be provided

within the parking areas. In order to facilitate bicycle use, short-term and long-term bicycle parking spaces would be provided, consistent with LAMC Section 12.21 A16.

Section 4C

Pedestrian, Bicycle, and Transit Assessment

Factors to consider when assessing a project's potential effect on pedestrian, bicycle, and transit facilities include the following:

- Would the project directly or indirectly result in a permanent removal or modification that would lead to the degradation of pedestrian, bicycle, or transit facilities?
- Would a project intensify use of existing pedestrian, bicycle, or transit facilities?

PEDESTRIANS AND BICYCLES

The Project would not directly or indirectly result in a permanent removal or modification that would lead to the degradation of pedestrian or bicycle facilities or preclude the installation of future facilities. Although the Project may intensify use of existing pedestrian and bicycle facilities, the Project access would be designed in accordance with City standards to ensure the safety of those accessing the site and utilizing the street system surrounding it. The driveways would be designed according to City design standards to reduce conflicts between vehicles and pedestrians/bicycles.

TRANSIT

As detailed in Chapter 2, the Study Area is served by numerous established transit routes. Bus transit service operated by Metro and LADOT DASH is available as part of the public transit system in the vicinity of the Project Site.

Although the Project (and other Related Projects) will cumulatively add transit ridership, the Project Site and the Study Area are served by transit lines with residual capacity, as detailed in Tables 2 and 3. As shown in Table 3, the total residual capacity of the bus lines within the Study Area during the morning and afternoon peak hours is approximately 1,266 and 1,222 transit trips, respectively. As shown in Table 7, transit usage accounts for the reduction of approximately 11

morning peak hour vehicle trips and 13 afternoon peak hour vehicle trips. If it is conservatively assumed each vehicle has an average vehicle occupancy (AVO) of 1.55, in accordance with the AVO for all trip purposes identified for Los Angeles County in *SCAG Regional Travel Demand Model and 2012 Model Validation* (SCAG, March 2016), this transit/walk-in reduction equates to approximately 17 person trips in the morning and 20 person trips in the evening. Compared to the total residual capacity of the transit lines within the Study Area during morning and afternoon peak, these person trips represent less than 2%. Overall, the transit systems in the Project vicinity can accommodate the Project's person trips without significantly reducing capacity.

Section 4D
Operational Evaluation

This section provides a quantitative evaluation of the Project's access and circulation operations, including the anticipated LOS at the study intersections and anticipated traffic queues.

LOS ANALYSIS

The intersection analysis was conducted based on the HCM methodologies to identify delay and LOS at each of the study intersections with development of the Project. Detailed LOS calculation worksheets are provided in Appendix E.

Existing with Project Conditions

Traffic Volumes. The Project-only morning and afternoon peak hour traffic volumes described in Section 4A and shown in Figure 13 were added to the existing morning and afternoon peak hour traffic volumes shown in Figure 7. The resulting volumes are illustrated in Figure 14 and represent Existing with Project Conditions, assuming Project operation under Existing Conditions.

Intersection LOS. Table 8 summarizes the weekday morning and afternoon peak hour LOS results for each of the signalized study intersections under Existing and Existing with Project Conditions. As shown in Table 8, two of the three study intersections currently operate at LOS D or better during both the morning and afternoon peak hours under both Existing and Existing with Project Conditions. The remaining intersection of Beacon Avenue & James M. Wood Boulevard (Intersection #2), an unsignalized intersection, operates at LOS D during the morning peak hour and at LOS F in the afternoon peak hour. It should be noted that the HCM Two-Way Stop Control Unsignalized methodology calculates the control delay, in seconds, for each individual approach of an intersection. The reported control delay represents the worst-case approach and does not account for traffic gaps created by adjacent traffic signals.

Future with Project Conditions

All future cumulative traffic growth (i.e., ambient and Cumulative Project traffic growth) and transportation infrastructure improvements described in Chapter 2 were incorporated into this analysis.

Traffic Volumes. The Project-only morning and afternoon peak hour traffic volumes described in Section 4A and shown in Figure 13 were added to the Future without Project (Year 2023) morning and afternoon peak hour traffic volumes shown in Figure 10. The resulting volumes are illustrated in Figure 15 and represent Future with Project Conditions in Year 2023.

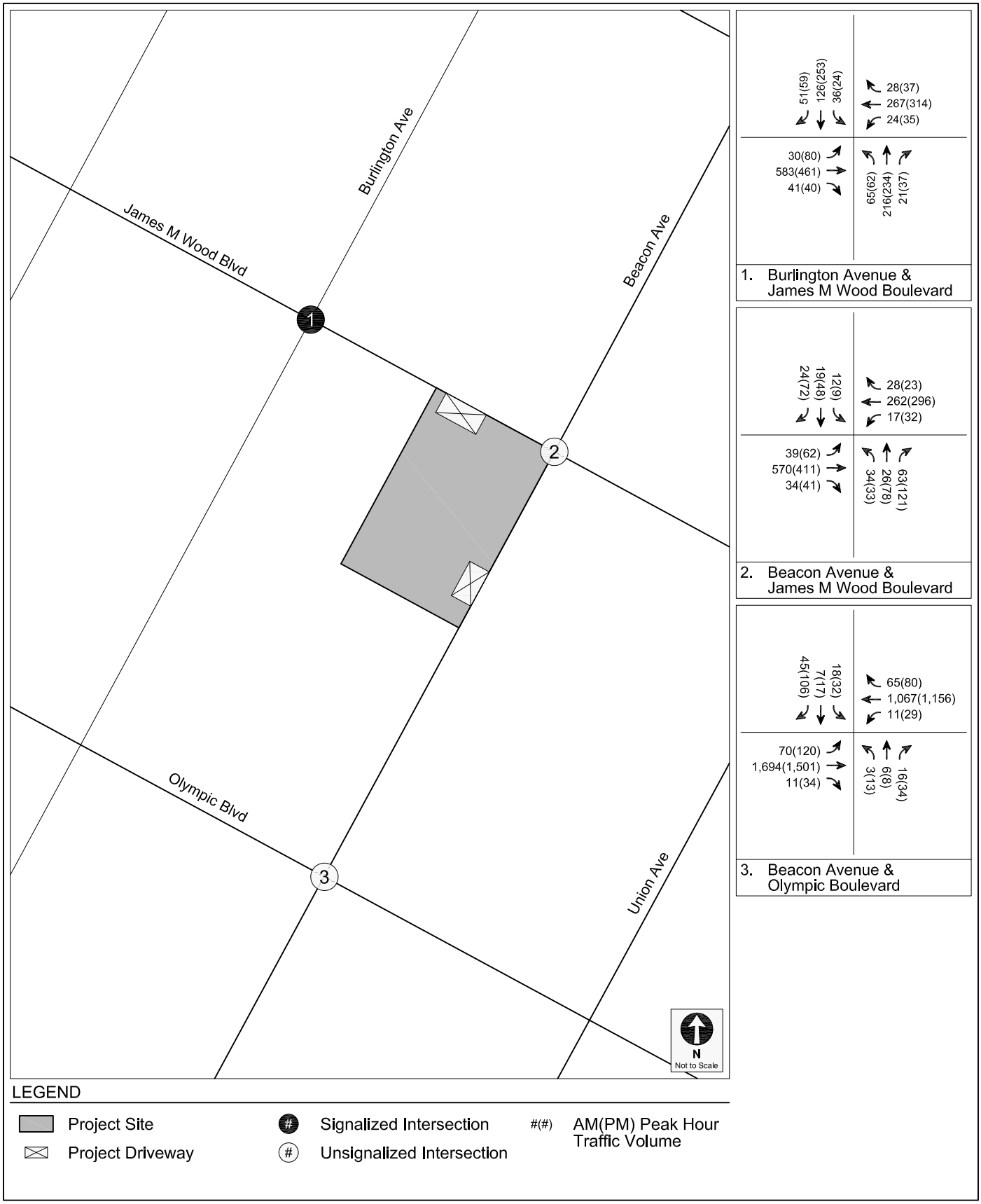
Intersection LOS. Table 9 summarizes the results of the Future without Project (Year 2023) and Future with Project Conditions during the weekday morning and afternoon peak hours for each of the study intersections. As shown in Table 9, one of the three study intersections is anticipated to operate at LOS D or better during both the morning and afternoon peak hours under both Future without Project (Year 2023) and Future with Project (Year 2023) Conditions. The remaining two unsignalized intersections are projected to operate at LOS E or F during either of the analyzed peak hours. It should be noted that the HCM Two-Way Stop Control Unsignalized methodology calculates the control delay, in seconds, for each individual approach of an intersection. The reported control delay represents the worst-case approach and does not account for traffic gaps created by adjacent traffic signals.

INTERSECTION QUEUING ANALYSIS

The study intersections were analyzed to determine whether the storage lengths of intersection turning lanes were enough to accommodate vehicle queue lengths. In addition, a queuing evaluation was conducted at the Project driveways to review the access and circulation operations.

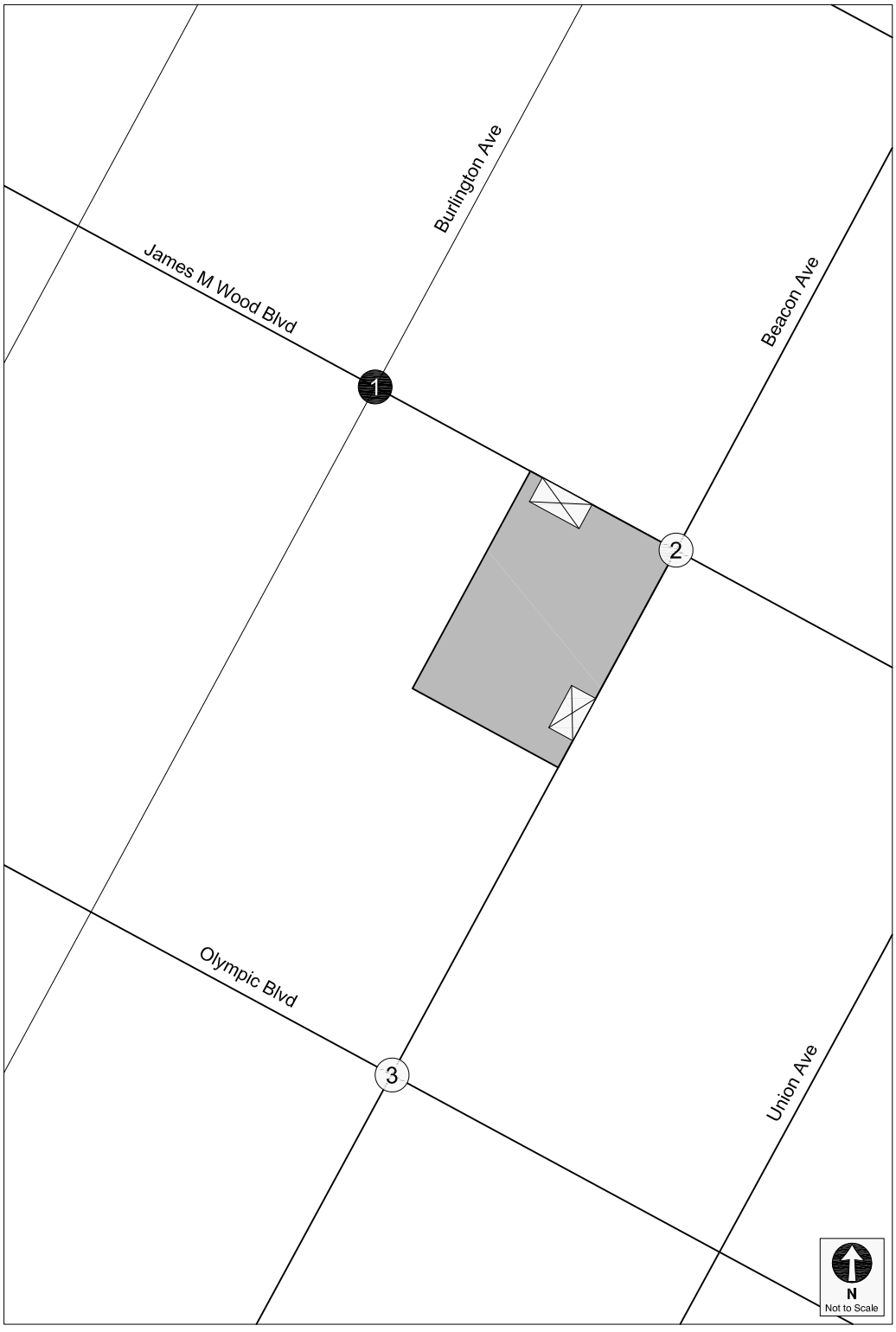
The queue lengths were estimated using Synchro software, which reports the 85th percentile queue length, in feet, for each approach lane. The reported queues are calculated using the HCM signalized and unsignalized intersection methodology.

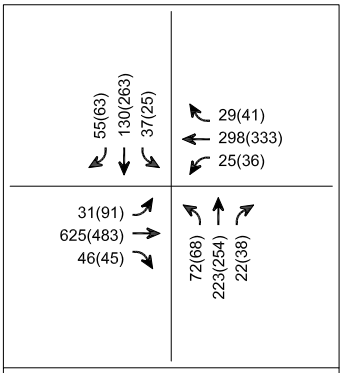
Detailed queuing analysis worksheets are provided in Appendix E.



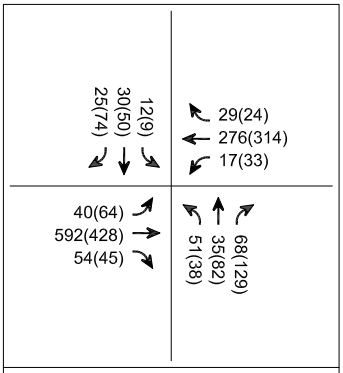
EXISTING WITH PROJECT CONDITIONS (YEAR 2020)
PEAK HOUR TRAFFIC VOLUMES

FIGURE 14

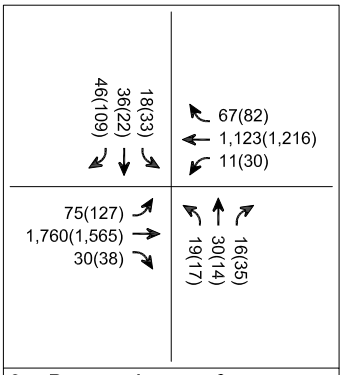




1. Burlington Avenue & James M Wood Boulevard



2. Beacon Avenue & James M Wood Boulevard



3. Beacon Avenue & Olympic Boulevard

LEGEND

Project Site
Project Driveway
Signalized Intersection
Unsignalized Intersection
#(#) AM(PM) Peak Hour Traffic Volume

FUTURE WITH PROJECT CONDITIONS (YEAR 2023)
PEAK HOUR TRAFFIC VOLUMES

FIGURE 15

TABLE 8
EXISTING WITH PROJECT CONDITIONS (YEAR 2020)
INTERSECTION LEVELS OF SERVICE

No	Intersection	Peak Hour	Exisiting		Existing with Project	
			Delay	LOS	Delay	LOS
1.	Burlington Avenue &	AM	13.3	B	13.3	B
	James M. Wood Boulevard	PM	14.2	B	14.2	B
2.	Beacon Avenue &	AM	28.5	D	31.3	D
[a]	James M. Wood Boulevard	PM	54.8	F	66.5	F
3.	Beacon Avenue &	AM	31.5	D	31.5	D
[a]	Olympic Boulevard	PM	28.8	D	30.9	D

Notes

Delay is measured in seconds per vehicle

LOS = Level of service

Results per Synchro 10 (HCM methodology)

[a] Unsignalized intersection analysis based on the HCM Unsignalized Two-Way Stop-Control methodology, which calculates the control delay, in seconds, for each individual approach of an intersection. The reported control delay represents the worst-case approach, and does not account for traffic gaps created by adjacent traffic signals.

TABLE 9
FUTURE WITH PROJECT CONDITIONS (YEAR 2023)
INTERSECTION LEVELS OF SERVICE

No	Intersection	Peak Hour	Future without Project		Future with Project	
			Delay	LOS	Delay	LOS
1.	Burlington Avenue &	AM	13.9	B	13.9	B
	James M. Wood Boulevard	PM	14.9	B	14.9	B
2.	Beacon Avenue &	AM	49.0	E	57.1	F
[a]	James M. Wood Boulevard	PM	85.1	F	106.4	F
3.	Beacon Avenue &	AM	34.7	D	34.7	D
[a]	Olympic Boulevard	PM	33.9	D	36.6	E

Notes

Delay is measured in seconds per vehicle

LOS = Level of service

Results per Synchro 10 (HCM methodology)

[a] Unsignalized intersection analysis based on the HCM Unsignalized Two-Way Stop-Control methodology, which calculates the control delay, in seconds, for each individual approach of an intersection. The reported control delay represents the worst-case approach, and does not account for traffic gaps created by adjacent traffic signals.

Section 4E
Residential Street Cut-Through Analysis

This section summarizes the residential street cut-through analysis for the Project. The residential street cut-through analysis determines potential increases in average daily traffic volumes on designated Local Streets, as classified in the Mobility Plan, that can be identified as cut-through trips generated by the Project and that can adversely affect the character and function of those streets.

Section 3.5.2 of the TAG provides a list of questions to assess whether the Project would negatively affect residential streets. Based on the Project's anticipated trip distribution patterns and driveway placement, Project trips would likely utilize the major thoroughfares such as James M. Wood Boulevard or Olympic Boulevard to access the Project Site. Further, the Project is not projected to lead to trip diversion along other residential Local Streets, nor is the Project projected to add a substantial amount of automobile traffic to congested Arterial Streets that could potentially cause a shift to residential Local Streets. As described in the TAG, it is the City's policy to locate new driveways on lower-volume side streets. Therefore, Project trips utilizing Beacon Avenue would not be considered "cut-through" traffic.

Therefore, residential Local Streets would not be affected by Project traffic and a residential street cut-through analysis would not be required.

Section 4F
Construction Impact Analysis

This section summarizes the construction schedule and construction impact analysis for the Project. The construction impact analysis relates to the temporary impacts that may result from the construction activities associated with the Project and was performed in accordance with Section 3.4, Project Construction, of the TAG.

CONSTRUCTION EVALUATION CRITERIA

Section 3.4.3 of the TAG identifies three types of in-street construction impacts that require further analysis to assess the effects of Project construction on the existing pedestrian, bicycle, transit, or vehicle circulation. The three types of impacts and related populations are:

1. Temporary transportation constraints – potential impacts on the transportation system
2. Temporary loss of access – potential impacts on visitors entering and leaving sites
3. Temporary loss of bus stops or rerouting of bus lines – potential impacts on bus travelers

The factors used to determine the significance of a project's impacts involve the likelihood and extent to which an impact might occur, the potential inconvenience caused to users of the transportation system, and consideration for public safety. Construction activities could potentially interfere with pedestrian, bicycle, transit, or vehicle circulation and accessibility to adjoining areas. As detailed in Section 3.4.4 of the TAG, the proposed construction plans should be reviewed to determine whether construction activities would result in any of the following:

- Street, sidewalk, or lane closures
- Block existing vehicle, bicycle, or pedestrian access along a street or to parcels fronting the street
- Modification of access to transit stations, stops, or facilities during revenue hours

- Closure or movement of an existing bus stop or rerouting of an existing bus line
- Creation of transportation hazards

PROPOSED CONSTRUCTION SCHEDULE

The Project is anticipated to be constructed over a period of approximately 24 months anticipated to be complete in Year 2023. The construction period would include sub-phases of site demolition, excavation and grading, foundations, and building construction. Peak haul truck activity occurs during excavation and grading, and peak worker activity occurs during building construction. These two sub-phases of construction were studied in greater detail.

With the implementation of the Construction Management Plan, which is described in more detail below, it is anticipated that almost all haul truck activity to and from the Project Site would occur outside of the morning and afternoon peak hours. In addition, as discussed in more detail in the following section, worker trips to and from the Project Site would also occur outside of the peak hours. Therefore, no peak hour construction traffic impacts are expected during the excavation and grading phase of construction.

EXCAVATION AND GRADING PHASE

The peak period of truck activity during construction would occur during excavation and grading of the Project Site.

Haul trucks would travel on approved truck routes designated within the City or on State facilities. Given the Project Site's proximity to SR 110 and I-10, haul truck traffic would take the most direct route to the appropriate freeway ramps. The haul route will be reviewed and approved by the City.

Based on projections compiled for the Project, approximately 31,500 cubic yards (CY) of material would be excavated and removed from the Project Site over a 32-workday period. Based on estimates from the Applicant, this period would require up to 62 haul trucks per day. Thus, up to 124 daily haul truck trips (62 inbound, 62 outbound) are forecast to occur during the excavation

and grading period, with approximately 22 trips per hour (11 inbound, 11 outbound) uniformly over a typical six-hour workday.

Transportation Research Circular No. 212, Interim Materials on Highway Capacity (Transportation Research Board, 1980) defines passenger car equivalency (PCE) for a vehicle as the number of through moving passenger cars to which it is equivalent based on the vehicle's headway and delay-creating effects. Table 8 of *Transportation Research Circular No. 212* and Exhibit 12-25 of the HCM suggest a PCE of 2.0 for trucks. Assuming a PCE factor of 2.0, the 124 truck trips would be equivalent to 248 daily PCE trips. The 22 hourly truck trips would be equivalent to 44 PCE trips (22 inbound, 22 outbound) per hour.

In addition, a maximum of 20 construction workers would work at the Project Site during this phase. Assuming minimal carpooling amongst those workers, an AVO of 1.135 persons per vehicle was applied, as provided in *CEQA Air Quality Handbook* (South Coast Air Quality Management District, 1993). Therefore, 20 workers would result in a total of 18 vehicle trips to and 18 vehicle trips from the Project Site on a daily basis.

BUILDING CONSTRUCTION PHASE

The estimated number of construction workers each day depends on the phase of construction. According to construction projections prepared for the Project, the building subphase of construction would employ the most construction workers, with a maximum of approximately 50 workers per day for all components of the building (i.e., framing, plumbing, elevators, inspections, finishing). However, since the different building components would not be constructed or installed simultaneously, this cumulative estimate likely overstates the number of workers that would be expected on the peak construction day. Furthermore, on most of the estimated workdays to complete the Project, there would be far fewer workers than on the peak day. Therefore, the estimate of 50 workers per day used for the purposes of this analysis represents a very conservative estimate.

Assuming an AVO of 1.135 persons per vehicle, 50 workers would result in a total of 44 vehicles that would arrive and depart from the Project Site each day. The estimated number of daily trips associated with the construction workers is approximately 88 (44 inbound and 44 outbound trips),

but all of those trips would occur outside of the peak hours, as described above. As such, the building phase of Project construction is not expected to cause a significant traffic impact at any of the study intersections.

During construction, adequate parking for construction workers would be secured in local public parking facilities or, if needed, a remote site with shuttle service provided. Restrictions against workers parking in the public right-of-way in the vicinity of (or adjacent to) the Project Site will be identified as part of the Construction Management Plan. All construction materials storage and truck staging would be contained on-site.

POTENTIAL IMPACTS ON ACCESS, TRANSIT, AND PARKING

Project construction is not expected to create hazards for roadway travelers, bus riders, or parkers, so long as commonly practiced safety procedures for construction are followed. Such procedures and other measures (e.g., to address temporary traffic control, lane closures, sidewalk closures, etc.) have been incorporated into the Construction Management Plan. The construction-related impacts associated with access and transit are anticipated to be less than significant, and the implementation of the Construction Management Plan described below would further reduce those impacts.

Access

Construction activities are expected to be primarily contained within the Project Site boundaries. However, it is expected that construction fences may encroach into the public right-of-way (e.g., sidewalks and roadways) adjacent to the Project Site. Adjacent to the Project Site, the parking lanes on Beacon Avenue and James M. Wood Boulevard would be used throughout the construction period for equipment staging, concrete pumping, deliveries, etc. Temporary traffic controls would be provided to direct traffic around any closures as required in the Construction Management Plan. Travel lanes would be maintained on Beacon Avenue and James M. Wood Boulevard throughout the construction period and emergency access would not be impeded.

The use of the public right-of-way along Beacon Avenue and James M. Wood Boulevard would require temporary re-routing of pedestrian and bicycle traffic as the sidewalks fronting the Project Site would be closed. The Construction Management Plan would include measures to ensure pedestrian and bicycle safety along the affected sidewalks, bicycle facilities, and temporary walkways (e.g., use of directional signage, maintaining continuous and unobstructed pedestrian paths, and/or providing overhead covering).

Transit

There are currently no bus stop locations along the Project frontages on Beacon Avenue and James M. Wood Boulevard. Bus stop relocation or bus rerouting is not required; therefore, no temporary impacts to transit are expected.

Parking

Parking is allowed on Beacon Avenue and James M. Wood Boulevard, adjacent to Project Site, so construction would result in a temporary loss of seven unmetered on-street parking spaces on the west side of Beacon Avenue and six metered on-street parking spaces on the south side of James M. Wood Boulevard. Coordination with the LADOT Parking Meters Division should be included in the Construction Management Plan as a result of the temporary loss of the metered parking spaces on James M. Wood Boulevard.

CONSTRUCTION MANAGEMENT PLAN

A detailed Construction Management Plan, including street closure information, a detour plan, haul routes, and a staging plan, would be prepared and submitted to the City for review and approval, prior to commencing construction. The Construction Management Plan would formalize how construction would be carried out and identify specific actions that would be required to reduce effects on the surrounding community. The Construction Management Plan shall be based on the nature and timing of the specific construction activities and other projects in the vicinity of the Project Site, and shall include, but not be limited to, the following elements, as appropriate:

- Advance, bilingual notification of adjacent property owners and occupants of upcoming construction activities, including durations and daily hours of operation
- Prohibition of construction worker or equipment parking on adjacent streets
- Temporary pedestrian, bicycle, and vehicular traffic controls during all construction activities adjacent to Beacon Avenue and James M. Wood Boulevard, to ensure traffic safety on public rights-of-way
- Temporary traffic control during all construction activities adjacent to public rights-of-way to improve traffic flow on public roadways (e.g., flag men)
- Scheduling of construction activities to reduce the effect on traffic flow on surrounding Arterial Streets
- Containment of construction activity within the Project Site boundaries
- Construction-related vehicles/equipment shall not park on surrounding public streets
- Coordination with the LADOT Parking Meter Division to address loss of metered parking spaces
- Safety precautions for pedestrians and bicyclists through such measures as alternate routing and protection barriers shall be implemented as appropriate

Section 4G
Parking

This section provides an analysis of the proposed parking and the potential parking impacts of the Project.

PARKING SUPPLY

All Project parking would be provided on-site. The Project would provide a total of 177 automobile spaces and 111 bicycle spaces, including 12 short-term and 99 long-term bicycle spaces, in one at-grade parking level and two subterranean parking levels.

VEHICLE PARKING CODE REQUIREMENTS

The LAMC details City parking requirements for new developments. Per LAMC Section 12.22A31, the Transit Oriented Communities (TOC) Affordable Housing Incentive Program, the Project qualifies as a Tier 3 Housing Development because it is located within 0.5 miles of a rail transit station. The required parking for residential units in a Tier 3 Eligible Housing Development is 0.5 spaces per unit. TOC Tier 3 mixed-use projects with ground-floor commercial uses can also apply up to a 30% reduction to non-residential parking requirements. In addition, the Project Site is located within a State Enterprise Zone. Therefore, per Section 12.21A4(x)(3), the Project may utilize a lower parking ratio for the proposed commercial uses. The following LAMC parking rates were applied:

- Residential
    - 0.5 space per dwelling unit
- Commercial
    - 2.0 space per 1,000 sf of gross floor area

Per the LAMC, the Project's proposed 145 apartments units would require 73 parking spaces, and the 2,400 sf of commercial space require three spaces. In total, the LAMC parking requirement for the Project is 76 spaces as summarized in Table 10. Thus, the Project's proposed parking supply would meet the LAMC requirements.

BICYCLE PARKING CODE REQUIREMENTS

LAMC Section 12.21.A.16 details the parking requirements for new developments. The LAMC bicycle parking requirement of the Project is based on the following rates:

- Residential
  - Short-Term: Dwelling units 1-25 — 1.0 space per 10.0 dwelling units
    Dwelling units 26-100 — 1.0 space per 15.0 dwelling units
    Dwelling units 101-200 — 1.0 space per 20.0 dwelling units
    Dwelling units 201+ — 1.0 space per 40.0 dwelling units
  - Long-Term: Dwelling units 1-25 — 1.0 space per 1.0 dwelling units
    Dwelling units 26-100 — 1.0 space per 1.5 dwelling units
    Dwelling units 101-200 — 1.0 space per 2.0 dwelling units
    Dwelling units 201+ — 1.0 space per 4.0 dwelling units

- Restaurant
  - Short-Term:1.0 space per 2,000 sf of retail space
  - Long-Term:1.0 space per 2,000 sf of retail space

Per the LAMC, the Project's proposed 145 dwelling units would require a total of 10 short-term and 97 long-term bicycle parking spaces and the commercial space would require two additional short-term and two additional long-term spaces.

As summarized in Table 11, the total LAMC requirement for the Project is 12 short-term and 99 long-term bicycle parking spaces. The Project's proposed 12 short-term and 99 long-term bicycle spaces meet the LAMC requirements for on-site bicycle parking supply.

TABLE 10
VEHICLE PARKING CODE REQUIREMENTS

Land Use	Size	Code Requirement [a]	Parking Required
Residential [a]	145 du	0.5 space / 1 du	73 spaces
Commercial (Restaurant) [b]	2,400 sf	2 space / 1,000 sf	5 spaces
TOC Tier 3 Reduction [c]		30%	*(2)* spaces
Sub-Total - Commercial			3 spaces
		Total Code Required Parking	**76 spaces**

Notes
sf: square feet
[a] Pursuant to LAMC Section 12.22.A.31, Transit Oriented Communites (TOC) Affordable Housing Incentive Program, required residential parking in a Tier 3 Eligible Housing Development (projects within 0.5 miles of a Metro rail station) shall not exceed 0.5 spaces per unit.
[b] The Project Site is located wtihin a State Enterprise Zone. Therefore, per Section 12.21A4(x)(3), a lower parking ratio of 2 spaces per 1,000 sf may be utilized for commercial uses.
[c] Per LAMC Section 12.22.A.31, TOC Tier 3 mixed-use projects with ground-floor commercial uses can apply up to a 30% reduction to the non-residential parking requirement.

TABLE 11
BICYCLE PARKING CODE REQUIREMENTS

Land Use	Size	Short-Term				Long-Term			
		Rate [a]			Requirement	Rate [a]			Requirement
Residential	25 du	1.0 sp	/	10 du	3 sp	1.0 sp	/	1 du	25 sp
	75 du	1.0 sp	/	15.0 du	5 sp	1.0 sp	/	1.5 du	50 sp
	45 du	1.0 sp	/	20 du	2 sp	1.0 sp	/	2 du	22 sp
Commercial [b]	2,400 sf	1.0 sp	/	2,000 sf	2 sp	1.0 sp	/	2,000 sf	2 sp [c]
Bicycle Parking Requirements				**Short-Term:**	**12 sp**			**Long-Term:**	**99 sp**
Total Bicycle Parking Requirement									**111 sp**

Notes

sp - space

[a] Bicycle requirements as calculated by Section 12.21.A.16 of *Los Angeles Municipal Code*.

[b] Minimum bicycle requirement for restaurant space is two spaces for both short and long-term.

[c] Per Section 12.21.A16(b), any requirement of a fractional bicycle space up to and including 0.5 may be disregarded.

Chapter 5
Summary and Conclusions

This study was undertaken to analyze the potential transportation impacts of the Project on the local street system. The following summarizes the results of this analysis:

- The Project is located at 905 Beacon Avenue in the City.
- The Project proposes a mixed-use development consisting of 145 apartments and 2,400 sf of ground-floor commercial space. Completion of the Project is anticipated in Year 2023. Two driveways for vehicular access to the Project Site would be provided, one on Beacon Avenue and one on James M. Wood Boulevard.
- The Project is consistent with the City's plans, programs, ordinances, and polices and does not create geometric design hazard impacts.
- The Project does not have significant VMT impacts and is not required to provide mitigation.
- After application of the appropriate trip reduction credits as allowed by LADOT, the Project is anticipated to generate 60 new trips during the morning peak hour and 69 new trips during the afternoon peak hour.
- The Project provides adequate internal circulation to accommodate vehicular, pedestrian, and bicycle traffic without impeding through traffic movements on City streets.
- The Project will incorporate pedestrian and bicycle-friendly designs, such as bicycle parking and open space.
- All construction activities will occur outside of the commuter morning and afternoon peak hours and will not result in significant transportation impacts. A Construction Management Plan will ensure that construction impacts would be less than significant.
- The Project meets the LAMC vehicle and bicycle parking requirements.

References

2010 Bicycle Plan, A Component of the City of Los Angeles Transportation Element, Los Angeles Department of City Planning, 2010.

2012 Developer Fee Justification Study, Los Angeles Unified School District, 2012.

CEQA Air Quality Handbook, South Coast Air Quality Management District, 1993.

City of Los Angeles VMT Calculator Documentation, Los Angeles Department of Transportation and Los Angeles Department of City Planning, May 2020.

City of Los Angeles VMT Calculator Version 1.3, Los Angeles Department of Transportation, July 2020.

City of Los Angeles VMT Calculator User Guide, Los Angeles Department of Transportation and Los Angeles Department of City Planning, May 2020.

City of Los Angeles Urban Design Principles, Los Angeles Department of City Planning, 2011.

City of Los Angeles Walkability Checklist – Guidance for Entitlement Review, Los Angeles Department of City Planning, November 2008.

Citywide Design Guidelines, Los Angeles City Planning Urban Design Studio, October 2019.

Connect SoCal – The 2020--2045 Regional Transportation Plan / Sustainable Communities Strategy, Southern California Association of Governments, Adopted September 2020.

Highway Capacity Manual, 6th Edition, Transportation Research Board, 2016.

Interim Guidance for Freeway Safety Analysis, Los Angeles Department of Transportation, May 2020.

Los Angeles Municipal Code, City of Los Angeles.

Manual of Policies and Procedures, Los Angeles Department of Transportation, 2008.

Mobility Plan 2035, An Element of the General Plan, Los Angeles Department of City Planning, September 2016.

Plan for a Healthy Los Angeles: A Health and Wellness Element of the General Plan, Los Angeles Department of City Planning, March 2015.

Quantifying Greenhouse Gas Mitigation Measures, California Air Pollution Control Officers Association, 2010.

References, cont.

Redevelopment Plan for the Westlake Recovery Redevelopment Project, Community Redevelopment Agency of the City of Los Angeles, Adopted May 1999.

SCAG Regional Travel Demand Model and 2012 Model Validation, Southern California Association of Governments, March 2016.

State of California Senate Bill 743, Steinberg, 2013.

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

Transportation Assessment Guidelines, Los Angeles Department of Transportation, July 2020.

Trip Generation Manual, 9th Edition, Institute of Transportation Engineers, 2012.

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

Urban Mobility in a Digital Age: A Transportation Technology Strategy for Los Angeles (Ashley Z. Hand, August 2016.

Vision Zero: Eliminating Traffic Deaths in Los Angeles by 2025, City of Los Angeles, August 2015.

Westlake Community Plan, Community Redevelopment Agency of the City of Los Angeles, September 1997.

Appendix A

Memorandum of Understanding

LADOT

Transportation Assessment Memorandum of Understanding (MOU)

This MOU acknowledges that the Transportation Assessment for the following Project will be prepared in accordance with the latest version of LADOT's Transportation Assessment Guidelines:

I. PROJECT INFORMATION

Project Name: 905 Beacon Avenue Residential Project

Project Address: 905-919 Beacon Avenue, Los Angeles, CA 90015

Project Description: The Project proposes to construct 145 residential units with 2,400 square feet (sf) of ground-floor commercial uses. The existing surface parking lot on-site would be replaced with the development of the Project.

LADOT Project Case Number: _____ Project Site Plan attached? *(Required)* ■ Yes ☐ No

II. TRIP GENERATION

Geographic Distribution: N 15 % S 25 % E 40 % W 20 %

Illustration of Project trip distribution percentages at Study intersections attached? *(Required)* ■ Yes ☐ No

Trip Generation Rate(s): ITE 10th Edition / Other ITE 10th Edition

Trip Generation Adjustment *(Exact amount of credit subject to approval by LADOT)*	Yes	No
Transit Usage	☒	☐
Transportation Demand Management	☐	☒
Existing Active Land Use	☐	☒
Previous Land Use	☐	☒
Internal Trip	☒	☐
Pass-By Trip	☒	☐

Trip generation table including a description of the proposed land uses, ITE rates, estimated morning and afternoon peak hour volumes (ins/outs/totals), proposed trip credits, etc. attached? *(Required)* ■ Yes ☐ No

	IN	OUT	TOTAL
AM Trips	20	40	60
PM Trips	42	27	69

Daily Trips 589 (From VMT Calculator)

III. STUDY AREA AND ASSUMPTIONS

Project Buildout Year: 2023 Ambient Growth Rate: 1 % Per Yr.

Related Projects List, researched by the consultant and approved by LADOT, attached? *(Required)* ■ Yes ☐ No

Map of Study Intersections/Segments attached? ■ Yes ☐ No

STUDY INTERSECTIONS *(May be subject to LADOT revision after access, safety and circulation analysis)*

1 Burlington Avenue & James M. Wood Boulevard
2 Beacon Avenue & James M. Wood Boulevard
3 Beacon Avenue & Olympic Boulevard
4 _____
5 _____
6 _____

Is this Project located on a street within the High Injury Network? ☐ Yes ■ No

IV. ACCESS ASSESSMENT

Is the project on a lot that is 0.5-acre or more in total gross area? ■ Yes ☐ No

Is the project's frontage 250 linear feet or more along an Avenue or Boulevard as classified by the City's General Plan? ☐ Yes ■ No

Is the project's building frontage encompassing an entire block along an Avenue or Boulevard as classified by the City's General Plan? ☐ Yes ■ No

V. CONTACT INFORMATION

	CONSULTANT	DEVELOPER
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Phone Number:	(213) 683-0088	
E-Mail:	sdrobis@gibsontrans.com	dpage@triumphmgmt.com

Approved by:	x				x		
	Janet Ge	11/19/19				12/3/19	
	Consultant's Representative	Date			LADOT Representative	*Date	

*MOUs are generally valid for two years after signing. If after two years a transportation assessment has not been submitted to LADOT, the developer's representative shall check with the appropriate LADOT office to determine if the terms of this MOU are still valid or if a new MOU is needed.

TABLE 1
PROJECT TRIP GENERATION ESTIMATES

Land Use	ITE Land Use	Rate or Size	Morning Peak Hour			Afternoon Peak Hour		
			In	Out	Total	In	Out	Total
Trip Generation Rates [a]								
Multi-Family Housing (Mid-Rise)	221	per du	26%	74%	0.36	61%	39%	0.44
High-Turnover (Sit-Down) Restaurant	932	per 1,000 sf	55%	45%	9.94	62%	38%	9.77
Trip Generation Estimates								
Multi-Family Housing (Mid-Rise)	221	145 du	14	38	52	39	25	64
Transit/Walk Adjustment - 15% [b]			*(2)*	*(6)*	*(8)*	*(6)*	*(4)*	*(10)*
Commercial	932	2,400 sf	13	11	24	14	9	23
Internal Capture - 5% [c]			*(1)*	*0*	*(1)*	*(1)*	*0*	*(1)*
Transit/Walk Adjustment - 15% [b]			*(2)*	*(1)*	*(3)*	*(2)*	*(1)*	*(3)*
Pass-By Adjustment - 20% [d]			*(2)*	*(2)*	*(4)*	*(2)*	*(2)*	*(4)*
TOTAL PROJECT TRIPS			**20**	**40**	**60**	**42**	**27**	**69**

Notes:

du = dwelling unit; sf = square feet.

[a] Trip generation rates are from *Trip Generation, 10th Edition* (Institute of Transportation Engineers, 2017).

[b] Per LADOT's *Transportation Assessment Guidelines,* the Project Site is located within a 1/4 mile walking distance from the Metro Route 728 RapidBus stop at Olympic Boulevard and Union Avenue, therefore a transit reduction is applied to accountfor transit usage and walking visitor arrivals from the surrounding neighborhoods and adjacent commercial developments.

[c] Internal capture adjustments account for person trips made between distinct land uses within a mixed-use development without using an off-site road system (e.g., residents visiting commercial uses).

[e] Per LADOT's *Transportation Assessment Guidelines* , pass-by adjustment of 20% is applied to account for Project trips made as an intermediate stop on the way from an origin to a primary trip destination without route diversion.

TABLE 2
RELATED PROJECT TRIP GENERATION ESTIMATES

No.	Project	Address	Description	Trip Generation Estimates						
				Daily	Morning Peak Hour			Afternoon Peak Hour		
					In	Out	Total	In	Out	Total
1.	Hotel Olympia	1700 W Olympic Bl	160-room hotel	1,157	44	32	76	45	42	87
2.	Restaurants & Bar	1728 W 7th St	9,600 sf restaurant and 3,500 sf bar	362	-30	-40	-70	50	17	64
3.	1633 W 11th Street Charter School (K-5)	1633 W 11th St	460-student K-5 charter school	970	194	158	352	29	37	66
4.	2005 James M Wood Hotel	2005 James M Wood Bl	100-room hotel	545	24	18	42	20	18	38

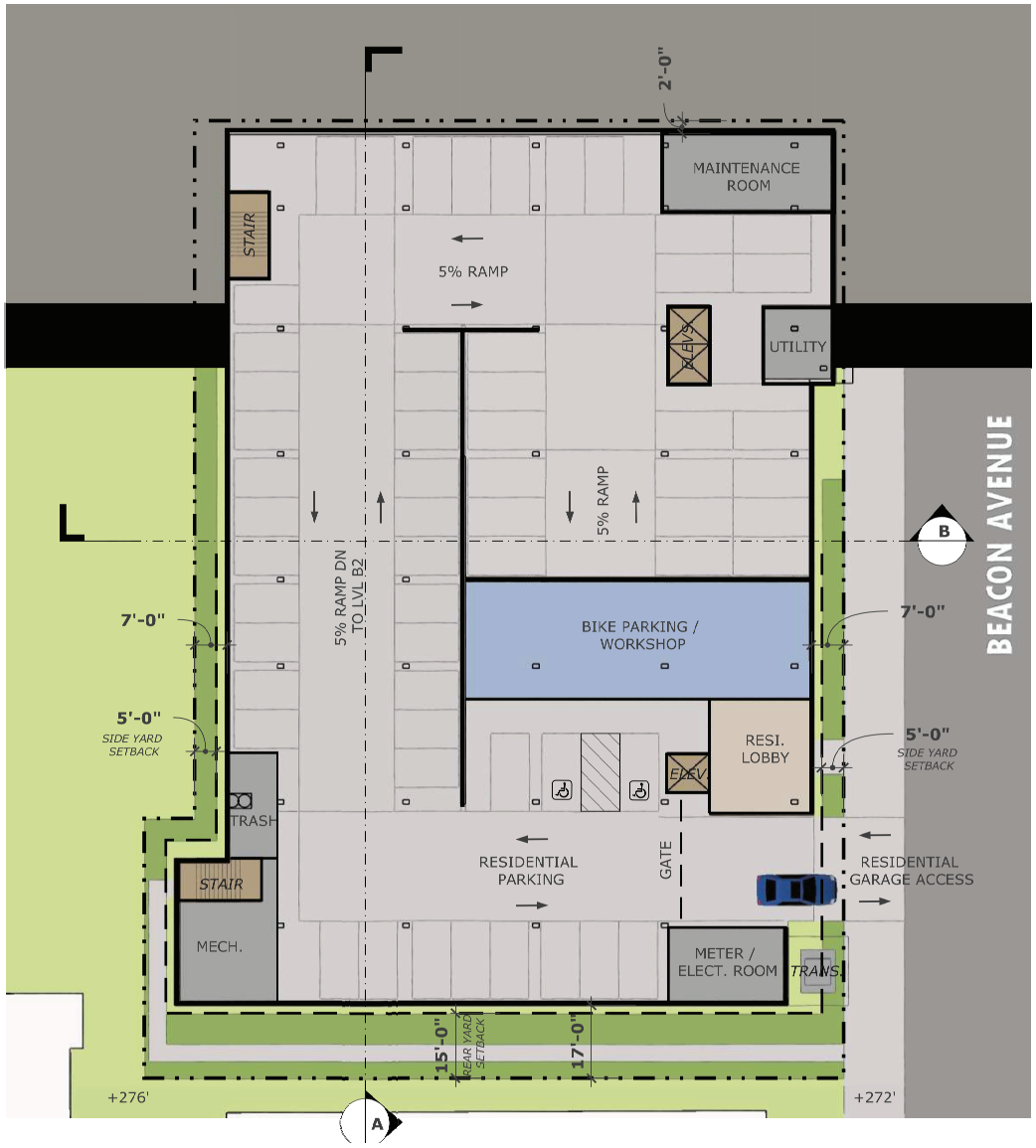
Notes

[a] Related project information provided by the Los Angeles Department of Transportation in October 2019, Department of City Planning, and recent traffic studies prepared in the area.

Source: NEXT Architecture. October, 2019.

PROJECT SITE PLAN (GROUND FLOOR)

FIGURE 1A

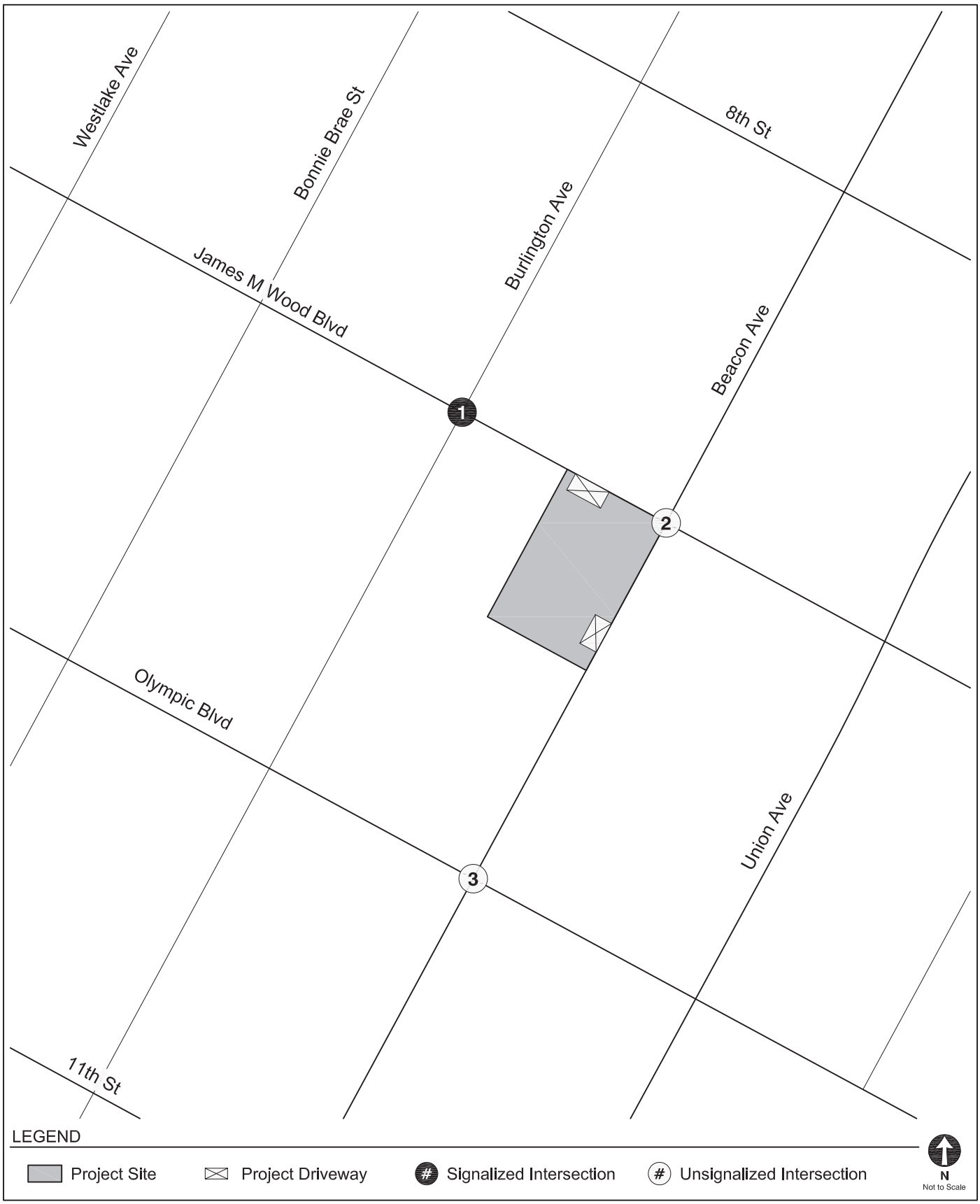


Source: NEXT Architecture. October, 2019.

N
Not to Scale

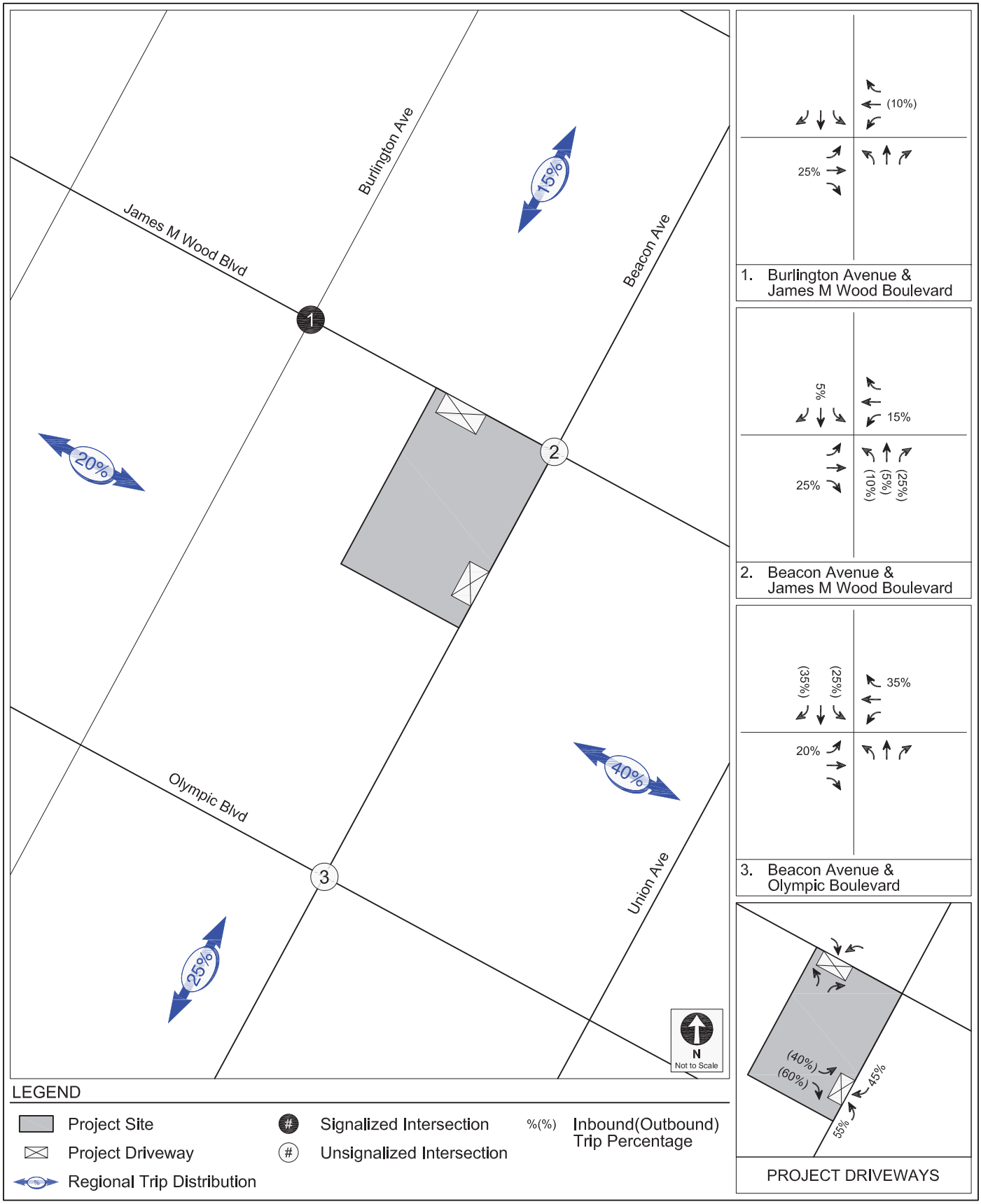
PROJECT SITE PLAN (LEVEL B1)

FIGURE 1B



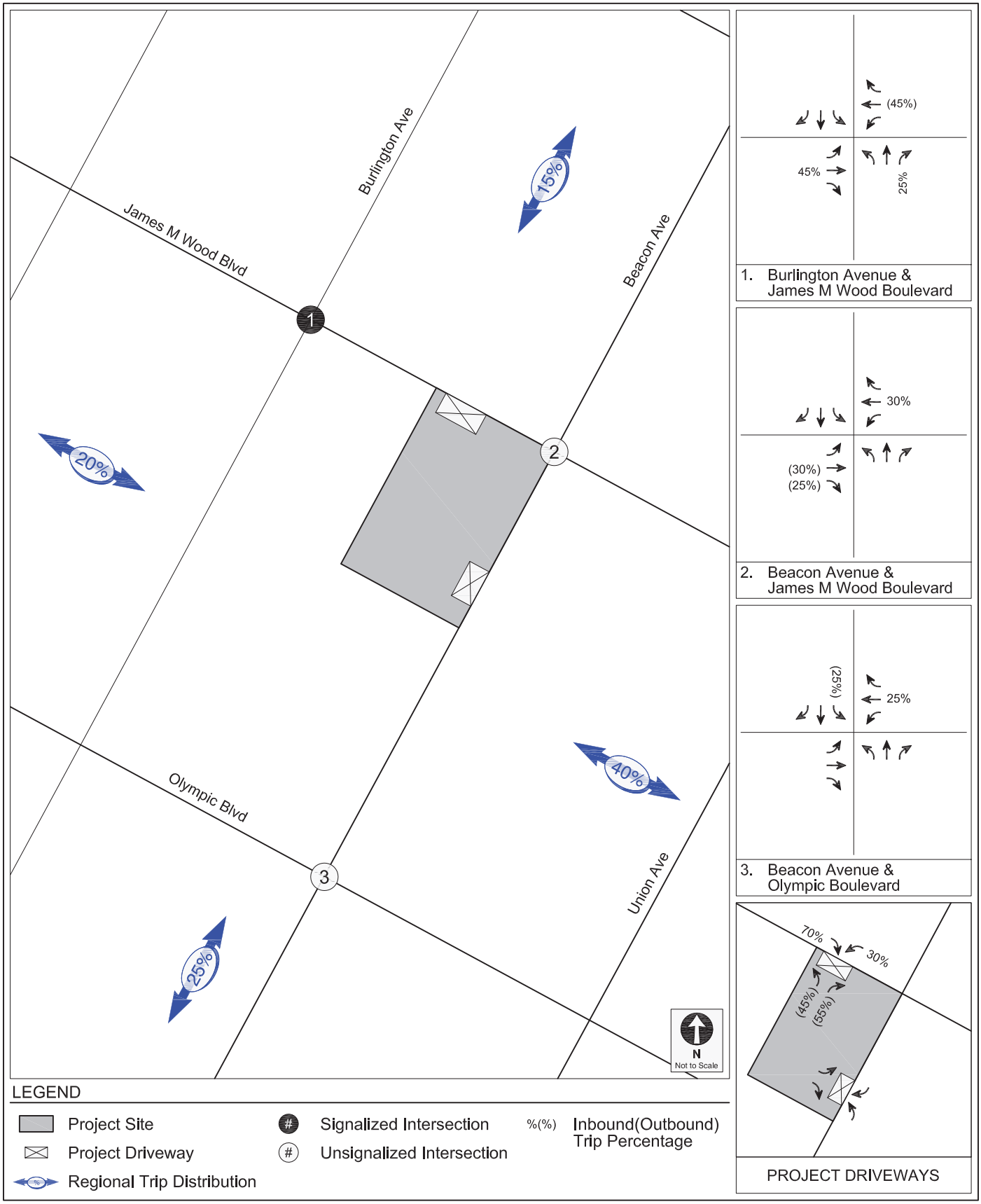
STUDY AREA & ANALYZED INTERSECTIONS

FIGURE 2



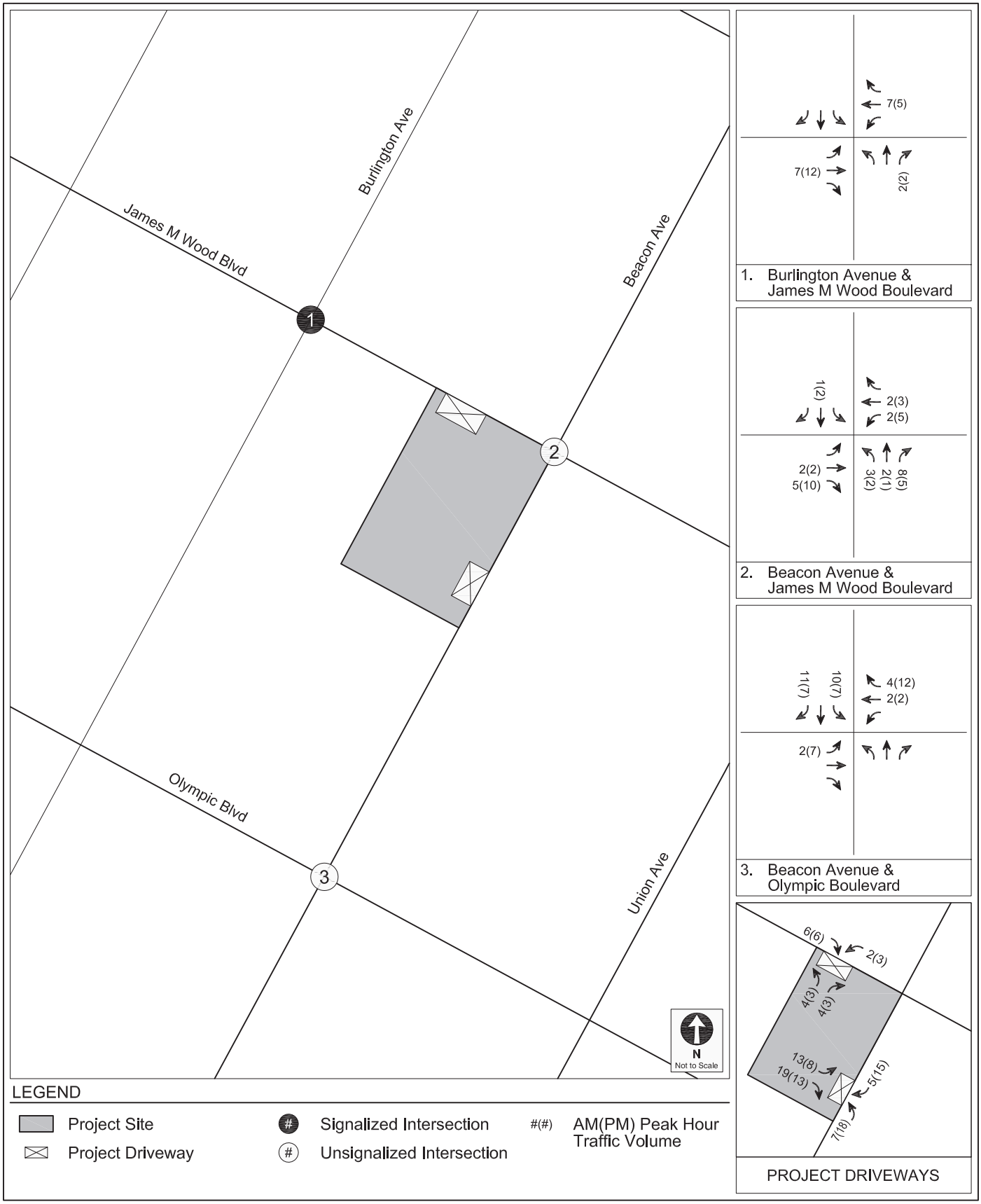
PROJECT TRIP DISTRIBUTION
RESIDENTIAL

FIGURE
3A



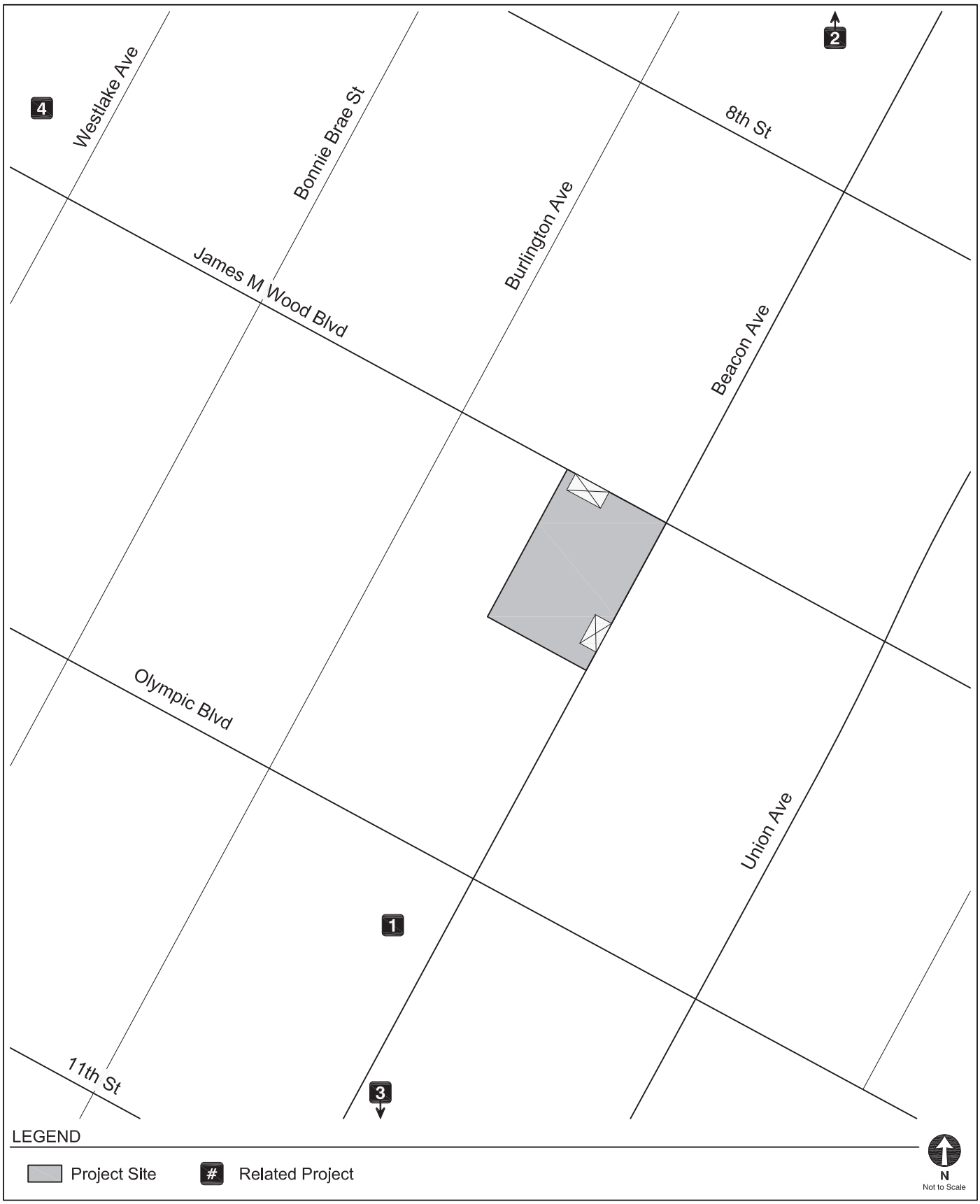
PROJECT TRIP DISTRIBUTION
COMMERCIAL

FIGURE
3B



PROJECT-ONLY
PEAK HOUR TRAFFIC VOLUMES

FIGURE
4



LOCATIONS OF RELATED PROJECTS

FIGURE 5

Appendix B

Traffic Volume Data

Turning Movement Count Report AM

Location ID: 1
North/South: Burlington Avenue
East/West: James M. Wood Blvd

Date: 01/14/20
City: Los Angeles, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	6	17	4	4	52	7	6	32	10	4	62	3	207
7:15	5	28	8	8	58	3	4	56	22	3	89	10	294
7:30	13	23	15	10	64	5	4	81	19	12	124	5	375
7:45	7	35	9	9	79	9	4	58	24	9	161	10	414
8:00	18	43	5	4	68	5	6	43	14	12	126	9	353
8:15	13	25	7	5	49	5	5	34	8	8	165	6	330
8:30	9	24	8	4	38	3	6	32	12	4	122	9	271
8:45	5	15	6	4	47	2	8	38	12	5	135	3	280
9:00	4	17	3	1	42	1	6	36	8	0	109	2	229
9:15	8	18	4	5	51	3	4	25	8	5	107	4	242
9:30	5	15	3	3	38	5	4	27	6	4	25	3	138
9:45	7	14	1	3	41	6	5	14	4	6	76	2	179

Total Volume:	100	274	73	60	627	54	62	476	147	72	1301	66	3312
Approach %	22%	61%	16%	8%	85%	7%	9%	69%	21%	5%	90%	5%	

Peak Hr Begin:	7:30												
PHV	51	126	36	28	260	24	19	216	65	41	576	30	1472
PHF	0.807			0.804			0.721			0.899			0.889

Turning Movement Count Report PM

Location ID: 1
North/South: Burlington Avenue
East/West: James M. Wood Blvd

Date: 01/14/20
City: Los Angeles, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	13	38	3	7	44	3	5	23	6	5	112	8	267
15:15	18	41	4	3	58	11	6	38	4	6	121	11	321
15:30	8	29	8	5	54	9	4	43	7	8	139	9	323
15:45	11	33	2	6	56	4	6	40	9	3	136	18	324
16:00	13	52	2	7	44	8	5	41	5	8	123	16	324
16:15	13	64	2	7	53	5	11	40	14	7	124	29	369
16:30	6	49	3	10	49	10	9	48	17	8	125	16	350
16:45	12	63	6	5	72	3	2	57	16	12	123	17	388
17:00	15	63	7	9	88	7	9	57	8	7	103	16	389
17:15	17	67	6	16	69	13	13	60	17	12	120	17	427
17:30	15	60	5	7	80	12	11	60	21	9	103	30	413
17:45	22	62	4	8	77	11	13	20	15	4	124	25	385

Total Volume:	163	621	52	90	744	96	94	527	139	89	1453	212	4280
Approach %	19%	74%	6%	10%	80%	10%	12%	69%	18%	5%	83%	12%	

Peak Hr Begin:	16:45												
PHV	59	253	24	37	309	35	35	234	62	40	449	80	1617
PHF	0.933			0.916			0.899			0.936			0.947

Pedestrian/Bicycle Count Report

Leg:	*North*		*East*		*South*		*West*	
Class:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	2	0	11	0	9	1	12	0
7:15	21	2	19	0	13	1	5	0
7:30	10	0	28	0	11	0	19	1
7:45	14	0	10	0	16	0	18	0
8:00	15	1	5	0	8	1	10	0
8:15	10	0	6	0	4	1	4	0
8:30	5	0	4	0	7	1	5	0
8:45	5	1	3	0	6	2	3	0
9:00	8	0	7	0	2	0	6	0
9:15	10	0	4	0	7	0	2	0
9:30	8	0	3	0	8	2	0	0
9:45	8	2	7	0	3	0	21	0

Leg:	*North*		*East*		*South*		*West*	
Class:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
15:00	15	0	9	2	3	0	10	0
15:15	11	0	15	2	11	1	12	0
15:30	18	0	11	0	7	0	7	0
15:45	7	1	8	0	10	1	13	1
16:00	7	0	9	0	14	0	9	0
16:15	6	2	5	3	14	0	11	0
16:30	18	5	3	2	11	1	15	0
16:45	11	0	8	0	12	2	13	1
17:00	21	1	15	0	10	0	8	1
17:15	10	1	7	0	12	0	21	0
17:30	14	0	6	0	7	0	21	0
17:45	21	0	17	1	5	1	9	0

Turning Movement Count Report AM

Location ID: 2
North/South: Beacon Avenue
East/West: James M. Wood Blvd

Date: 01/14/20
City: Los Angeles, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	8	2	3	4	53	6	7	4	3	5	51	1	147
7:15	4	4	2	3	52	2	9	4	7	5	99	2	193
7:30	6	8	3	2	72	4	18	5	10	7	128	8	271
7:45	4	3	6	5	78	2	18	6	9	4	155	12	302
8:00	8	6	1	12	61	5	8	6	6	7	129	9	258
8:15	6	1	2	9	49	4	11	7	6	11	156	10	272
8:30	3	2	0	8	42	5	11	8	3	6	119	7	214
8:45	3	4	2	10	43	5	10	13	2	6	128	10	236
9:00	2	1	3	14	42	8	13	10	2	10	96	5	206
9:15	2	2	1	10	51	9	12	8	1	4	107	8	215
9:30	1	4	1	5	44	3	14	11	2	6	82	9	182
9:45	6	2	1	5	36	6	12	8	5	4	77	3	165

Total Volume:	53	39	25	87	623	59	143	90	56	75	1327	84	2661
Approach %	45%	33%	21%	11%	81%	8%	49%	31%	19%	5%	89%	6%	

Peak Hr Begin:	7:30												
PHV	24	18	12	28	260	15	55	24	31	29	568	39	1103
PHF	0.794			0.891			0.833			0.898			0.913

Turning Movement Count Report PM

Location ID: 2
North/South: Beacon Avenue
East/West: James M. Wood Blvd

Date: 01/14/20
City: Los Angeles, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	3	6	4	7	43	0	24	9	8	9	109	5	227
15:15	8	2	2	2	57	7	11	11	3	4	111	10	228
15:30	6	3	2	5	56	9	23	6	6	8	126	12	262
15:45	4	3	2	6	55	5	15	9	4	8	125	4	240
16:00	7	2	3	4	50	3	18	9	6	7	119	12	240
16:15	12	2	0	6	51	4	26	5	3	7	103	10	229
16:30	9	5	3	5	51	2	24	10	5	2	122	15	253
16:45	8	6	0	8	73	2	24	17	4	10	111	10	273
17:00	18	9	4	8	72	7	28	16	7	7	96	13	285
17:15	15	9	4	5	73	6	25	16	12	12	105	12	294
17:30	17	11	1	3	72	7	35	19	4	6	98	11	284
17:45	22	17	0	7	76	7	28	26	8	6	110	26	333
Total Volume:	129	75	25	66	729	59	281	153	70	86	1335	140	3148
Approach %	56%	33%	11%	8%	85%	7%	56%	30%	14%	6%	86%	9%	
Peak Hr Begin:	17:00												
PHV	72	46	9	23	293	27	116	77	31	31	409	62	1196
PHF	0.814			0.953			0.903			0.884			0.898

Pedestrian/Bicycle Count Report

Leg:	*North*		*East*		*South*		*West*	
Class:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	4	1	2	0	4	1	3	0
7:15	17	2	6	0	9	0	3	0
7:30	21	1	0	0	9	0	7	0
7:45	24	1	4	0	19	0	3	1
8:00	13	2	9	0	10	0	2	1
8:15	4	0	8	1	2	0	2	0
8:30	5	0	7	0	3	1	2	0
8:45	3	1	19	0	1	1	3	0
9:00	7	0	17	0	1	0	2	0
9:15	6	0	2	1	5	0	1	0
9:30	6	1	9	0	4	1	1	0
9:45	4	0	29	0	2	0	3	0

Leg:	*North*		*East*		*South*		*West*	
Class:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
15:00	10	1	11	0	2	1	2	0
15:15	7	2	6	0	5	1	0	0
15:30	5	0	9	0	3	0	2	0
15:45	12	1	3	0	7	0	3	0
16:00	4	0	9	2	6	0	1	0
16:15	9	0	1	0	5	1	3	0
16:30	14	1	6	1	8	1	5	0
16:45	11	1	2	1	5	0	2	0
17:00	11	1	7	0	8	1	2	0
17:15	11	1	5	0	6	0	1	0
17:30	7	1	1	0	12	0	2	0
17:45	7	0	3	0	5	1	1	0

Turning Movement Count Report AM

Location ID: 3
North/South: Beacon Avenue
East/West: Olympic Blvd

Date: 01/14/20
City: Los Angeles, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	7	1	2	7	233	1	17	1	17	7	226	8	527
7:15	5	2	1	9	248	3	51	5	21	12	303	9	669
7:30	9	0	1	14	246	0	45	1	23	14	365	22	740
7:45	5	1	7	15	279	2	12	1	0	4	396	17	739
8:00	10	1	3	19	284	1	9	0	2	3	406	13	751
8:15	8	1	3	12	216	2	4	2	1	3	428	21	701
8:30	6	2	1	20	265	1	3	1	0	4	438	18	759
8:45	10	3	1	10	300	7	0	3	0	1	422	16	773
9:00	10	2	8	23	220	8	1	1	1	2	355	17	648
9:15	7	1	4	10	270	3	4	1	0	0	328	18	646
9:30	7	2	5	14	243	1	3	4	3	2	347	14	645
9:45	5	1	6	16	232	4	1	2	1	3	268	21	560

Total Volume:	89	17	42	169	3036	33	150	22	69	55	4282	194	8158
Approach %	60%	11%	28%	5%	94%	1%	62%	9%	29%	1%	95%	4%	

Peak Hr Begin:	8:00												
PHV	34	7	8	61	1065	11	16	6	3	11	1694	68	2984
PHF	0.875			0.897			0.568			0.964			0.965

Turning Movement Count Report PM

Location ID: 3
North/South: Beacon Avenue
East/West: Olympic Blvd

Date: 01/14/20
City: Los Angeles, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
15:00	15	3	4	13	166	5	5	1	1	5	310	10	538
15:15	12	3	3	16	215	1	7	4	1	9	374	7	652
15:30	16	1	3	6	217	8	43	2	17	9	350	15	687
15:45	10	2	4	12	201	4	7	0	1	5	377	21	644
16:00	12	2	6	7	247	5	6	1	3	5	372	18	684
16:15	11	2	6	8	235	2	1	2	1	7	385	11	671
16:30	9	5	6	18	249	4	5	3	4	6	388	18	715
16:45	18	3	8	11	269	11	4	0	0	11	362	10	707
17:00	29	4	7	18	275	15	6	1	6	7	382	20	770
17:15	22	4	5	13	268	1	6	3	1	6	386	28	743
17:30	24	5	8	14	330	8	11	1	1	10	396	33	841
17:45	24	4	5	23	281	5	11	3	5	11	337	32	741

Total Volume:	202	38	65	159	2953	69	112	21	41	91	4419	223	8393
Approach %	66%	12%	21%	5%	93%	2%	64%	12%	24%	2%	93%	5%	

Peak Hr Begin:	17:00												
PHV	99	17	25	68	1154	29	34	8	13	34	1501	113	3095
PHF	0.881			0.888			0.724			0.938			0.920

Pedestrian/Bicycle Count Report

Leg:	*North*		*East*		*South*		*West*	
Class:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	7	0	0	0	11	2	1	0
7:15	9	1	0	0	34	1	0	0
7:30	24	0	2	0	33	0	1	0
7:45	15	0	1	0	20	2	3	0
8:00	14	0	2	1	21	0	0	0
8:15	7	0	0	0	9	1	0	0
8:30	5	0	0	0	10	1	0	0
8:45	8	1	0	0	5	3	0	0
9:00	10	1	3	0	12	0	3	0
9:15	17	0	3	0	14	1	0	0
9:30	14	0	4	0	7	1	1	0
9:45	22	0	3	0	3	2	0	0

Leg:	*North*		*East*		*South*		*West*	
Class:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
15:00	18	0	3	0	14	2	2	0
15:15	13	0	2	0	26	1	1	0
15:30	13	2	4	0	29	4	3	0
15:45	16	0	1	0	21	3	0	0
16:00	11	1	1	0	15	3	2	0
16:15	23	0	1	0	21	2	3	0
16:30	13	2	2	0	22	1	3	0
16:45	14	1	3	0	18	2	3	0
17:00	26	1	3	0	17	3	2	0
17:15	11	0	0	0	17	2	3	0
17:30	10	1	2	0	6	2	0	0
17:45	14	2	1	0	7	1	1	0

Appendix C

Plan, Policy, and Program Consistency Worksheet

Plans, Policies and Programs Consistency Worksheet

The worksheet provides a structured approach to evaluate the threshold T-1 question below, that asks whether a project conflicts with a program, plan, ordinance or policy addressing the circulation system. The intention of the worksheet is to streamline the project review by highlighting the most relevant plans, policies and programs when assessing potential impacts to the City's circulation system.

> Threshold T-1: Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle, and pedestrian facilities?

This worksheet does not include an exhaustive list of City policies, and does not include community plans, specific plans, or any area-specific regulatory overlays. The Department of City Planning project planner will need to be consulted to determine if the project would obstruct the City from carrying out a policy or program in a community plan, specific plan, streetscape plan, or regulatory overlay that was adopted to support multimodal transportation options or public safety. LADOT staff should be consulted if a project would lead to a conflict with a mobility investment in the Public Right of Way (PROW) that is currently undergoing planning, design, or delivery. This worksheet must be completed for all projects that meet the Section I. Screening Criteria. For description of the relevant planning documents, **see Attachment D.1.**

For any response to the following questions that checks the box in bold text ((i.e. ☐ Yes or ☐ No), further analysis is needed to demonstrate that the project does not conflict with a plan, policy, or program.

I. SCREENING CRITERIA FOR POLICY ANALYSIS

If the answer is 'yes' to any of the following questions, further analysis will be required:

Does the project require a discretionary action that requires the decision maker to find that the project would substantially conform to the purpose, intent and provisions of the General Plan?

☐ Yes ☑ No

Is the project known to directly conflict with a transportation plan, policy, or program adopted to support multimodal transportation options or public safety?

☐ Yes ☑ No

Is the project required to or proposing to make any voluntary modifications to the public right-of-way (i.e., dedications and/or improvements in the right-of-way, reconfigurations of curb line, etc.)?

☑ Yes ☐ No

II. PLAN CONSISTENCY ANALYSIS

A. Mobility Plan 2035 PROW Classification Standards for Dedications and Improvements

These questions address potential conflict with:

Mobility Plan 2035 Policy 2.1 *– Adaptive Reuse of Streets. Design, plan, and operate streets to serve multiple purposes and provide flexibility in design to adapt to future demands.*

Mobility Plan 2035 Policy 2.3 *– Pedestrian Infrastructure. Recognize walking as a component of every trip, and ensure high quality pedestrian access in all site planning and public right-of-way modifications to provide a safe and comfortable walking environment.*

Mobility Plan 2035 Policy 3.2 – *People with Disabilities. Accommodate the needs of people with disabilities when modifying or installing infrastructure in the public right-of-way.*

Mobility Plan 2035 Street Designations and Standard Roadway Dimensions

A.1 Does the project include additions or new construction along a street designated as a Boulevard I, and II, and/or Avenue I, II, or III on property zoned for R3 or less restrictive zone? ☑ Yes ☐ No

A.2 If **A.1 is yes**, is the project required to make additional dedications or improvements to the Public Right of Way as demonstrated by the street designation. ☑ Yes ☐ No ☐ N/A

A.3 If **A.2 is yes**, is the project making the dedications and improvements as necessary to meet the designated dimensions of the fronting street (Boulevard I, and II, or Avenue I, II, or III)?

☑ Yes ☐ No ☐ N/A

If the answer is to **A.1 or A.2 is NO, or to A.1, A.2 and A.3. is YES**, then the project does not conflict with the dedication and improvement requirements that are needed to comply with the Mobility Plan 2035 Street Designations and Standard Roadway Dimensions.

A.4 If the answer to **A.3. is NO**, is the project applicant asking to waive from the dedication standards?

☐ **Yes** ☐ **No** ☑ N/A

Lists any streets subject to dedications or voluntary dedications and include existing roadway and sidewalk widths, required roadway and sidewalk widths, and proposed roadway and sidewalk width or waivers.

James M. Wood Boulevard

Frontage 1 Existing PROW'/Curb' : Existing 35' Required 36' Proposed 36'

Frontage 2 Existing PROW'/Curb' : Existing _____ Required _____ Proposed _____

Frontage 3 Existing PROW'/Curb' : Existing _____ Required _____ Proposed _____

Frontage 4 Existing PROW'/Curb' : Existing _____ Required _____ Proposed _____

If the answer to **A.4 is NO**, the project is inconsistent with Mobility Plan 2035 street designations and must file for a waiver of street dedication and improvement.

If the answer to **A.4 is YES**, additional analysis is necessary to determine if the dedication and/or improvements are necessary to meet the City's mobility needs for the next 20 years. The following factors may contribute to determine if the dedication or improvement is necessary:

Is the project site along any of the following networks identified in the City's Mobility Plan?

- Transit Enhanced Network
- Bicycle Enhanced Network
- Bicycle Lane Network
- Pedestrian Enhanced District
- Neighborhood Enhanced Network

To see the location of the above networks, see **Transportation Assessment Support Map**.[1]

Is the project within the service area of Metro Bike Share, or is there demonstrated demand for micro-mobility services?

If the project dedications and improvements asking to be waived are necessary to meet the City's mobility needs, the project may be found to conflict with a plan that is adopted to protect the environment.

B. Mobility Plan 2035 PROW Policy Alignment with Project-Initiated Changes

B.1 Project-Initiated Changes to the PROW Dimensions

These questions address potential conflict with:

> ***Mobility Plan 2035 Policy 2.1*** *– Adaptive Reuse of Streets. Design, plan, and operate streets to serve multiple purposes and provide flexibility in design to adapt to future demands.*
>
> ***Mobility Plan 2035 Policy 2.3*** *– Pedestrian Infrastructure. Recognize walking as a component of every trip, and ensure high quality pedestrian access in all site planning and public right-of-way modifications to provide a safe and comfortable walking environment.*
>
> ***Mobility Plan 2035 Policy 3.2 –*** *People with Disabilities. Accommodate the needs of people with disabilities when modifying or installing infrastructure in the public right-of-way.*
>
> ***Mobility Plan 2035 Policy 2.10*** *– Loading Areas. Facilitate the provision of adequate on and off-site street loading areas.*
>
> **Mobility Plan 2035 Street Designations and Standard Roadway Dimensions**

[1] LADOT Transportation Assessment Support Map https://arcg.is/fubbD

B.1 Does the project physically modify the curb placement or turning radius and/or physically alter the sidewalk and parkways space that changes how people access a property?

Examples of physical changes to the public right-of-way include:

- widening the roadway,
- narrowing the sidewalk,
- adding space for vehicle turn outs or loading areas,
- removing bicycle lanes, bike share stations, or bicycle parking
- modifying existing bus stop, transit shelter, or other street furniture
- paving, narrowing, shifting or removing an existing parkway or tree well

☐ **Yes** ☑ No

B.2 Driveway Access

These questions address potential conflict with:

Mobility Plan 2035 Policy 2.10 *– Loading Areas. Facilitate the provision of adequate on and off-site street loading areas.*

Mobility Plan 2035 Program PL.1. Driveway Access. *Require driveway access to buildings from non-arterial streets or alleys (where feasible) in order to minimize interference with pedestrian access and vehicular movement.*

Citywide Design Guidelines - Guideline 2*: Carefully incorporate vehicular access such that it does not degrade the pedestrian experience.*

Site Planning Best Practices:

- *Prioritize pedestrian access first and automobile access second. Orient parking and driveways toward the rear or side of buildings and away from the public right-of-way. On corner lots, parking should be oriented as far from the corner as possible.*
- *Minimize both the number of driveway entrances and overall driveway widths.*
- *Do not locate drop-off/pick-up areas between principal building entrances and the adjoining sidewalks.*
- *Orient vehicular access as far from street intersections as possible.*
- *Place drive-thru elements away from intersections and avoid placing them so that they create a barrier between the sidewalk and building entrance(s).*
- *Ensure that loading areas do not interfere with on-site pedestrian and vehicular circulation by separating loading areas and larger commercial vehicles from areas that are used for public parking and public entrances.*

B.2 Does the project add new driveways along a street designated as an Avenue or a Boulevard that conflict with LADOT's Driveway Design Guidelines (See Sec. 321 in the Manual of Policies and Procedures) by any of the following:

- locating new driveways for residential properties on an Avenue or Boulevard, and access is otherwise possible using an alley or a collector/local street, or
- locating new driveways for industrial or commercial properties on an Avenue or Boulevard and access is possible along a collector/local street, or

- the total number of new driveways exceeds 1 driveway per every 200 feet[2] along on the Avenue or Boulevard frontage, or
- locating new driveways on an Avenue or Boulevard within 150 feet from the intersecting street, or
- locating new driveways on a collector or local street within 75 feet from the intersecting street, or
- locating new driveways near mid-block crosswalks, requiring relocation of the mid-block crosswalk

☐ **Yes** ☑ No

If the answer to **B.1 and B.2 are both NO**, then the project would not conflict with a plan or policies that govern the PROW as a result of the project-initiated changes to the PROW.

Impact Analysis

If the answer to either **B.1 or B.2 are YES**, City plans and policies should be reviewed in light of the proposed physical changes to determine if the City would be obstructed from carrying out the plans and policies. The analysis should pay special consideration to substantial changes to the Public Right of Way that may either degrade existing facilities for people walking and bicycling (e.g., removing a bicycle lane), or preclude the City from completing complete street infrastructure as identified in the Mobility Plan 2035, especially if the physical changes are along streets that are on the High Injury Network (HIN). The analysis should also consider if the project is in a Transit Oriented Community (TOC) area, and would degrade or inhibit trips made by biking, walking and/ or transit ridership. The streets that need special consideration are those that are included on the following networks identified in the Mobility Plan 2035, or the HIN:

- Transit Enhanced Network
- Bicycle Enhanced Network
- Bicycle Lane Network
- Pedestrian Enhanced District
- Neighborhood Enhanced Network
- High Injury Network

To see the location of the above networks, see **Transportation Assessment Support Map**.[3]

Once the project is reviewed relevant to plans and policies, and existing facilities that may be impacted by the project, the analysis will need to answer the following two questions in concluding if there is an impact due to plan inconsistency.

B.2.1 Would the physical changes in the public right of way or new driveways that conflict with LADOT's Driveway Design Guidelines degrade the experience of vulnerable roadway users such as modify, remove, or otherwise negatively impact existing bicycle, transit, and/or pedestrian infrastructure?

☐ **Yes** ☑ No ☐ N/A

[2] for a project frontage that exceeds 400 feet along an Avenue or Boulevard, the incremental additional driveway above 2 is more than 1 driveway for every 400 additional feet.

[3] LADOT Transportation Assessment Support Map https://arcg.is/fubbD

B.2.2 Would the physical modifications or new driveways that conflict with LADOT's Driveway Design Guidelines preclude the City from advancing the safety of vulnerable roadway users?

☐ **Yes** ☑ No ☐ N/A

If either of the answers to either **B.2.1 or B.2.2 are YES**, the project may conflict with the Mobility Plan 2035, and therefore conflict with a plan that is adopted to protect the environment. If either of the answers to both **B.2.1. or B.2.2. are NO**, then the project would not be shown to conflict with plans or policies that govern the Public Right-of-Way.

C. Network Access

C. 1 Alley, Street and Stairway Access

These questions address potential conflict with:

Mobility Plan Policy 3.9 *Increased Network Access: Discourage the vacation of public rights-of-way.*

C.1.1 Does the project propose to vacate or otherwise restrict public access to a street, alley, or public stairway?

☐ Yes ☑ No

C.1.2 If the answer to C.1.1 is Yes, will the project provide or maintain public access to people walking and biking on the street, alley or stairway?

☐ Yes ☐ **No** ☑ N/A

C.2 New Cul-de-sacs

These questions address potential conflict with:

Mobility Plan 2035 Policy 3.10 *Cul-de-sacs: Discourage the use of cul-de-sacs that do not provide access for active transportation options.*

C.2.1 Does the project create a cul-de-sac or is the project located adjacent to an existing cul-de-sac?

☐ Yes ☑ No

C.2.2 If yes, will the cul-de-sac maintain convenient and direct public access to people walking and biking to the adjoining street network?

☐ Yes ☐ **No** ☑ N/A

If the answers to either C.1.2 or C.2.2 are YES, then the project would not conflict with a plan or policies that ensures access for all modes of travel. If the answer to either **C.1.2 or C.2.2 are NO**, the project may conflict with a plan or policies that governs multimodal access to a property. Further analysis must assess to the degree that pedestrians and bicyclists have sufficient public access to the transportation network.

D. Parking Supply and Transportation Demand Management

These questions address potential conflict with:

Mobility Plan 2035 Policy 3.8 *– Bicycle Parking, Provide bicyclists with convenient, secure and well maintained bicycle parking facilities.*

Mobility Plan 2035 Policy 4.8 – *Transportation Demand Management Strategies. Encourage greater utilization of Transportation Demand Management Strategies to reduce dependence on single-occupancy vehicles.*

Mobility Plan 2035 Policy 4.13 *– Parking and Land Use Management: Balance on-street and off-street parking supply with other transportation and land use objectives.*

D.1 Would the project propose a supply of onsite parking that exceeds the baseline amount[4] as required in the Los Angeles Municipal Code or a Specific plan, whichever requirement prevails?

☐ Yes ☑ No

D.2 If the answer to D.1. is YES, would the project propose to actively manage the demand of parking by independently pricing the supply to all users (e.g. parking cash-out), or for residential properties, unbundle the supply from the lease or sale of residential units?

☐ Yes ☐ **No** ☑ N/A

If the answer to **D.2. is NO** the project may conflict with parking management policies. Further analysis is needed to demonstrate how the supply of parking above city requirements will not result in additional (induced) drive-alone trips as compared to an alternative that provided no more parking than the baseline required by the LAMC or Specific Plan. If there is potential for the supply of parking to result in induced demand for drive-alone trips, the project should further explore transportation demand management (TDM) measures to further off-set the induced demands of driving and vehicle miles travelled (VMT) that may result from higher amounts of on-site parking. The TDM measures should specifically focus on strategies that encourage dynamic and context-sensitive pricing solutions and ensure the parking is efficiently allocated, such as providing real time information. Research has demonstrated that charging a user cost for parking or providing a 'cash-out' option in return for not using it is the most effective strategy to reduce the instances of drive-alone trips and increase non-auto mode share to further reduce VMT. To ensure the parking is efficiently managed and reduce the need to build parking for future uses, further strategies should include sharing parking with other properties and/or the general public.

D.3. Would the project provide the minimum on and off-site bicycle parking spaces as required by Section 12.21 A.16 of the LAMC?

☑ Yes ☐ **No**

[4] The baseline parking is defined here as the default parking requirements in section 12.21 A.4 of the Los Angeles Municipal Code or any applicable Specific Plan, whichever prevails, for each applicable use not taking into consideration other parking incentives to reduce the amount of required parking.

D.4. Does the Project include more than 25,000 square feet of gross floor area construction of new non-residential gross floor?

☐ Yes ☑ No

D.5 If the answer to D.4. is YES, does the project comply with the City's TDM Ordinance in Section 12.26 J of the LAMC?

☐ Yes ☐ **No** ☑ N/A

If the answer to **D.3. or D.5. is NO** the project conflicts with LAMC code requirements of bicycle parking and TDM measures. If the project includes uses that require bicycle parking (Section 12.21 A.16) or TDM (Section 12.26 J), and the project does not comply with those Sections of the LAMC, further analysis is required to ensure that the project supports the intent of the two LAMC sections. To meet the intent of bicycle parking requirements, the analysis should identify how the project commits to providing safe access to those traveling by bicycle and accommodates storing their bicycle in locations that demonstrates priority over vehicle access.

Similarly, to meet the intent of the TDM requirements of Section 12.26 J of the LAMC, the analysis should identify how the project commits to providing effective strategies in either physical facilities or programs that encourage non-drive alone trips to and from the project site and changes in work schedule that move trips out of the peak period or eliminate them altogether (as in the case in telecommuting or compressed work weeks).

E. Consistency with Regional Plans

This section addresses potential inconsistencies with greenhouse gas (GHG) reduction targets forecasted in the Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP) / Sustainable Communities Strategy (SCS).

E.1 Does the Project or Plan apply one the City's efficiency-based impact thresholds (i.e. VMT per capita, VMT per employee, or VMT per service population) as discussed in Section 2.2.3 of the TAG?

☑ Yes ☐ No

E.2 If the Answer to E.1 is YES, does the Project or Plan result in a significant VMT impact?

☐ Yes ☑ No ☐ N/A

E.3 If the Answer to E.1 is NO, does the Project result in a net increase in VMT?

☑ Yes ☐ No ☐ N/A

If the Answer to E.2 or E.3 is NO, then the Project or Plan is shown to align with the long-term VMT and GHG reduction goals of SCAG's RTP/SCS.

E.4 If the Answer to E.2 or E.3 is YES, then further evaluation would be necessary to determine whether such a project or land use plan would be shown to be consistent with VMT and GHG reduction goals of the SCAG RTP/SCS. For the purpose of making a finding that a project is consistent with the GHG reduction targets forecasted in the SCAG RTP/SCS, the project analyst should consult Section 2.2.4 of the Transportation Assessment Guidelines (TAG). Section 2.2.4 provides the methodology for evaluating a land use project's cumulative impacts to VMT, and the appropriate reliance on SCAG's most recently adopted RTP/SCS in reaching that conclusion.

The analysis methods therein can further support findings that the project is consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy for which the State Air Resources Board, pursuant to Section 65080(b)(2)(H) of the Government Code, has accepted a metropolitan planning organization's determination that the sustainable communities strategy or the alternative planning strategy would, if implemented, achieve the greenhouse gas emission reduction targets.

References

BOE Street Standard Dimensions S-470-1 http://eng2.lacity.org/techdocs/stdplans/s-400/S-470-1_20151021_150849.pdf

LADCP Citywide Design Guidelines. https://planning.lacity.org/odocument/f6608be7-d5fe-4187-bea6-20618eec5049/Citywide_Design_Guidelines.pdf

LADOT Transportation Assessment Support Map https://arcg.is/fubbD

Mobility Plan 2035 https://planning.lacity.org/odocument/523f2a95-9d72-41d7-aba5-1972f84c1d36/Mobility_Plan_2035.pdf

SCAG. Connect SoCal, 2020-2045 RTP/SCS, https://www.connectsocal.org/Pages/default.aspx

ATTACHMENT D.1: CITY PLAN, POLICIES AND GUIDELINES

The Transportation Element of the City's General Plan, Mobility Plan 2035, established the "Complete Streets Design Guide" as the City's document to guide the operations and design of streets and other public rights-of-way. It lays out a vision for designing safer, more vibrant streets that are accessible to people, no matter what their mode choice. As a living document, it is intended to be frequently updated as City departments identify and implement street standards and experiment with different configurations to promote complete streets. The guide is meant to be a toolkit that provides numerous examples of what is possible in the public right-of-way and that provides guidance on context-sensitive design.

The Plan for A Healthy Los Angeles (March 2015) includes policies directing several City departments to develop plans that promote active transportation and safety.

The City of Los Angeles Community Plans, which make up the Land Use Element of the City's General Plan, guide the physical development of neighborhoods by establishing the goals and policies for land use. The 35 Community Plans provide specific, neighborhood-level detail for land uses and the transportation network, relevant policies, and implementation strategies necessary to achieve General Plan and community-specific objectives.

The stated goal of Vision Zero is to eliminate traffic-related deaths in Los Angeles by 2025 through a number of strategies, including modifying the design of streets to increase the safety of vulnerable road users. Extensive crash data analysis is conducted on an ongoing basis to prioritize intersections and corridors for implementation of projects that will have the greatest effect on overall fatality reduction. The City designs and deploys Vision Zero Corridor Plans as part of the implementation of Vision Zero. If a project is proposed whose site lies on the High Injury Network (HIN), the applicant should consult with LADOT to inform the project's site plan and to determine appropriate improvements, whether by funding their implementation in full or by making a contribution toward their implementation.

The Citywide Design Guidelines (October 24, 2019) includes sections relevant to development projects where improvements are proposed within the public realm. Specifically, Guidelines one through three provide building design strategies that support the pedestrian experience. The Guidelines provide best practices in designing that apply in three spatial categories of site planning, building design and public right of way. The Guidelines should be followed to ensure that the project design supports pedestrian safety, access and comfort as they access to and from the building and the immediate public right of way.

The City's Transportation Demand Management (TDM) Ordinance (LA Municipal Code 12.26.J) requires certain projects to incorporate strategies that reduce drive-alone vehicle trips and improve access to destinations and services. The ordinance is revised and updated periodically and should be reviewed for application to specific projects as they are reviewed.

The City's LAMC Section 12.37 (Waivers of Dedication and Improvement) requires certain projects to dedicate and/or implement improvements within the public right-of-way to meet the street designation standards of the Mobility Plan 2035.

The Bureau of Engineering (BOE) Street Standard Dimensions S-470-1 provides the specific street widths and public right of way dimensions associated with the City's street standards.

Appendix D

VMT Analysis Worksheets

CITY OF LOS ANGELES VMT CALCULATOR Version 1.3

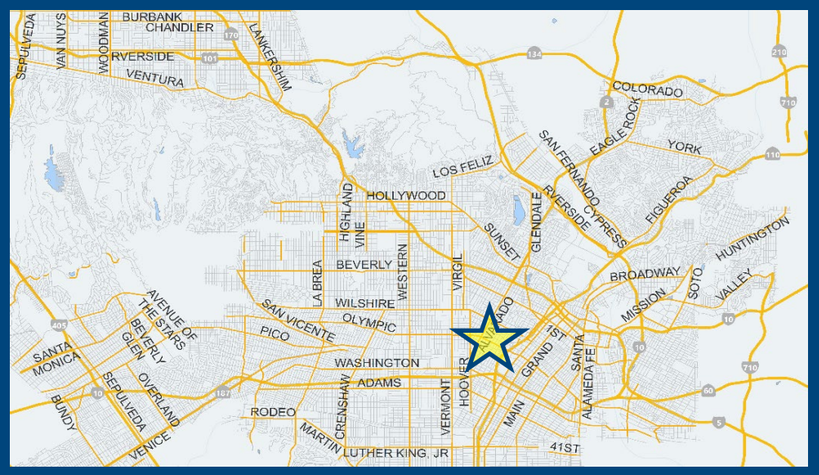
Project Screening Criteria: Is this project required to conduct a vehicle miles traveled analysis?

Project Information

Project: J1761 - 905 Beacon Ave

Scenario: Project

Address: 905 S BEACON AVE, 90015



If the project is replacing an existing number of residential units with a smaller number of residential units, is the project located within one-half mile of a fixed-rail or fixed-

○ Yes ○ No

Existing Land Use

Land Use Type	Value	Unit
Industrial | Warehousing/Self-Storage	394.117	ksf

☐ Click here to add a single custom land use type (will be included in the above list)

Proposed Project Land Use

Land Use Type	Value	Unit
Retail | High-Turnover Sit-Down Restaurant	41.408	ksf
Housing | Multi-Family	145	DU
Retail | High-Turnover Sit-Down Restaurant	2.4	ksf

☐ Click here to add a single custom land use type (will be included in the above list)

Project Screening Summary

Existing Land Use	Proposed
0 Daily Vehicle Trips	654 Daily Vehicle Trips
0 Daily VMT	4,276 Daily VMT

Tier 1 Screening Criteria

Project will have less residential units compared to existing residential units & is within one-half mile of a fixed-rail station.	☐

Tier 2 Screening Criteria

The net increase in daily trips < 250 trips	654 Net Daily Trips
The net increase in daily VMT ≤ 0	4,276 Net Daily VMT
The proposed project consists of only retail land uses ≤ 50,000 square feet total.	2.400 ksf

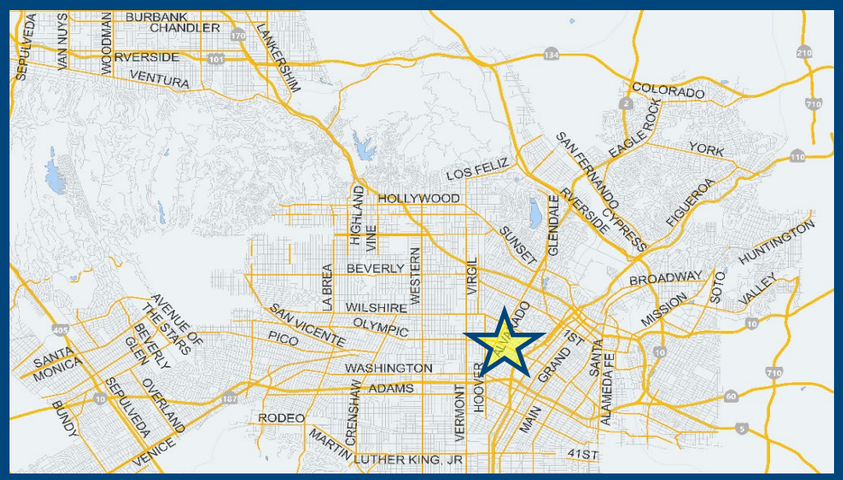
The proposed project is required to perform VMT analysis.

Measuring the Miles

CITY OF LOS ANGELES VMT CALCULATOR Version 1.3

Project Information

Project: J1761 - 905 Beacon Ave
Scenario: Project
Address: 905 S BEACON AVE, 90015



Proposed Project Land Use Type	Value	Unit
Housing | Multi-Family	145	DU
Retail | High-Turnover Sit-Down Restaurant	2.4	ksf

TDM Strategies

Select each section to show individual strategies
Use ☑ to denote if the TDM strategy is part of the proposed project or is a mitigation strategy

	Proposed Project	With Mitigation
Max Home Based TDM Achieved?	**No**	**No**
Max Work Based TDM Achieved?	**No**	**No**

- **A** Parking
- **B** Transit
- **C** Education & Encouragement
- **D** Commute Trip Reductions
- **E** Shared Mobility
- **F** Bicycle Infrastructure
- **G** Neighborhood Enhancement

Traffic Calming Improvements: 25 percent of streets within project with traffic calming improvements
☐ Proposed Prj ☐ Mitigation
25 percent of intersections within project with traffic calming improvements

Pedestrian Network Improvements: within project and connecting off-site
☐ Proposed Prj ☐ Mitigation

Analysis Results

Proposed Project	With
650 Daily Vehicle Trips	**650** Daily Vehicle Trips
4,251 Daily VMT	**4,251** Daily VMT
4.0 Household VMT per Capita	**4.0** Household VMT
N/A Work VMT per Employee	**N/A** Work VMT per Employee

Significant VMT Impact?

Proposed Project	With
Household: No Threshold = 6.0 15% Below APC	**Household: No** Threshold = 6.0 15% Below APC
Work: N/A Threshold = 7.6 15% Below APC	**Work: N/A** Threshold = 7.6 15% Below APC

Measuring the Miles

11/23/2020

CITY OF LOS ANGELES VMT CALCULATOR

Report 1: Project & Analysis Overview

Date: November 23, 2020
Project Name: J1761 - 905 Beacon Ave
Project Scenario: Project
Project Address: 905 S BEACON AVE, 90015

Version 1.3

Project Information			
Land Use Type		**Value**	**Units**
Housing	*Single Family*	*0*	*DU*
	Multi Family	145	DU
	Townhouse	*0*	*DU*
	Hotel	*0*	*Rooms*
	Motel	*0*	*Rooms*
Affordable Housing	*Family*	*0*	*DU*
	Senior	*0*	*DU*
	Special Needs	*0*	*DU*
	Permanent Supportive	*0*	*DU*
Retail	*General Retail*	*0.000*	*ksf*
	Furniture Store	*0.000*	*ksf*
	Pharmacy/Drugstore	*0.000*	*ksf*
	Supermarket	*0.000*	*ksf*
	Bank	*0.000*	*ksf*
	Health Club	*0.000*	*ksf*
	High-Turnover Sit-Down Restaurant	2.400	ksf
	Fast-Food Restaurant	*0.000*	*ksf*
	Quality Restaurant	*0.000*	*ksf*
	Auto Repair	*0.000*	*ksf*
	Home Improvement	*0.000*	*ksf*
	Free-Standing Discount	*0.000*	*ksf*
	Movie Theater	*0*	*Seats*
Office	*General Office*	*0.000*	*ksf*
	Medical Office	*0.000*	*ksf*
Industrial	*Light Industrial*	*0.000*	*ksf*
	Manufacturing	*0.000*	*ksf*
	Warehousing/Self-Storage	*0.000*	*ksf*
School	*University*	*0*	*Students*
	High School	*0*	*Students*
	Middle School	*0*	*Students*
	Elementary	*0*	*Students*
	Private School (K-12)	*0*	*Students*
Other		*0*	*Trips*

CITY OF LOS ANGELES VMT CALCULATOR

Report 1: Project & Analysis Overview

Date: November 23, 2020
Project Name: J1761 - 905 Beacon Ave
Project Scenario: Project
Project Address: 905 S BEACON AVE, 90015

Version 1.3

CITY OF LOS ANGELES VMT CALCULATOR

Report 1: Project & Analysis Overview

Date: November 23, 2020
Project Name: J1761 - 905 Beacon Ave
Project Scenario: Project
Project Address: 905 S BEACON AVE, 90015

Version 1.3

Analysis Results			
Total Employees: 10 Total Population: 327			
Proposed Project		***With Mitigation***	
650	**Daily Vehicle Trips**	**650**	**Daily Vehicle Trips**
4,251	**Daily VMT**	**4,251**	**Daily VMT**
4	**Household VMT per Capita**	**4**	**Household VMT per Capita**
N/A	**Work VMT per Employee**	**N/A**	**Work VMT per Employee**
Significant VMT Impact?			
APC: Central			
Impact Threshold: 15% Below APC Average Household = 6.0 Work = 7.6			
Proposed Project		***With Mitigation***	
VMT Threshold	**Impact**	**VMT Threshold**	**Impact**
Household > 6.0 Work > 7.6	No N/A	Household > 6.0 Work > 7.6	No N/A

CITY OF LOS ANGELES VMT CALCULATOR

Report 2: TDM Inputs

Date: November 23, 2020
Project Name: J1761 - 905 Beacon Ave
Project Scenario: Project
Project Address: 905 S BEACON AVE, 90015

Version 1.3

TDM Strategy Inputs

Strategy Type		Description	Proposed Project	Mitigations
Parking	*Reduce parking supply*	*City code parking provision (spaces)*	*0*	*0*
		Actual parking provision (spaces)	*0*	*0*
	Unbundle parking	*Monthly cost for parking ($)*	*$0*	*$0*
	Parking cash-out	*Employees eligible (%)*	*0%*	*0%*
	Price workplace parking	*Daily parking charge ($)*	*$0.00*	*$0.00*
		Employees subject to priced parking (%)	*0%*	*0%*
	Residential area parking permits	*Cost of annual permit ($)*	*$0*	*$0*

(cont. on following page)

TDM Strategy Inputs, Cont.

Strategy Type		Description	Proposed Project	Mitigations
Transit	*Reduce transit headways*	*Reduction in headways (increase in frequency) (%)*	*0%*	*0%*
		Existing transit mode share (as a percent of total daily trips) (%)	*0%*	*0%*
		Lines within project site improved (<50%, >=50%)	*0*	*0*
	Implement neighborhood shuttle	*Degree of implementation (low, medium, high)*	*0*	*0*
		Employees and residents eligible (%)	*0%*	*0%*
	Transit subsidies	*Employees and residents eligible (%)*	*0%*	*0%*
		Amount of transit subsidy per passenger (daily equivalent) ($)	*$0.00*	*$0.00*
Education & Encouragement	*Voluntary travel behavior change program*	*Employees and residents participating (%)*	*0%*	*0%*
	Promotions and marketing	*Employees and residents participating (%)*	*0%*	*0%*

(cont. on following page)

TDM Strategy Inputs, Cont.

Strategy Type		Description	Proposed Project	Mitigations
Commute Trip Reductions	*Required commute trip reduction program*	*Employees participating (%)*	*0%*	*0%*
	Alternative Work Schedules and Telecommute	*Employees participating (%)*	*0%*	*0%*
		Type of program	*0*	*0*
	Employer sponsored vanpool or shuttle	*Degree of implementation (low, medium, high)*	*0*	*0*
		Employees eligible (%)	*0%*	*0%*
		Employer size (small, medium, large)	*0*	*0*
	Ride-share program	*Employees eligible (%)*	*0%*	*0%*
Shared Mobility	*Car share*	*Car share project setting (Urban, Suburban, All Other)*	*0*	*0*
	Bike share	*Within 600 feet of existing bike share station - OR- implementing new bike share station (Yes/No)*	*0*	*0*
	School carpool program	*Level of implementation (Low, Medium, High)*	*0*	*0*

(cont. on following page)

TDM Strategy Inputs, Cont.

Strategy Type		Description	Proposed Project	Mitigations
Bicycle Infrastructure	*Implement/Improve on-street bicycle facility*	*Provide bicycle facility along site (Yes/No)*	*0*	*0*
	Include Bike parking per LAMC	Meets City Bike Parking Code (Yes/No)	Yes	Yes
	Include secure bike parking and showers	*Includes indoor bike parking/lockers, showers, & repair station (Yes/No)*	*0*	*0*
Neighborhood Enhancement	*Traffic calming improvements*	*Streets with traffic calming improvements (%)*	*0%*	*0%*
		Intersections with traffic calming improvements (%)	*0%*	*0%*
	Pedestrian network improvements	*Included (within project and connecting off-site/within project only)*	*0*	*0*

CITY OF LOS ANGELES VMT CALCULATOR

Report 3: TDM Outputs

Date: November 23, 2020
Project Name: J1761 - 905 Beacon Ave
Project Scenario: Project
Project Address: 905 S BEACON AVE, 90015

Version 1.3

TDM Adjustments by Trip Purpose & Strategy

Place type: Urban

		Home Based Work Production		*Home Based Work Attraction*		*Home Based Other Production*		*Home Based Other Attraction*		*Non-Home Based Other Production*		*Non-Home Based Other Attraction*		*Source*
		Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	
Parking	Reduce parking supply	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	TDM Strategy Appendix, Parking sections 1 - 5
	Unbundle parking	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	
	Parking cash-out	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	
	Price workplace parking	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	
	Residential area parking permits	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	
Transit	Reduce transit headways	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	TDM Strategy Appendix, Transit sections 1 - 3
	Implement neighborhood shuttle	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	
	Transit subsidies	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	
Education & Encouragement	Voluntary travel behavior change program	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	TDM Strategy Appendix, Education & Encouragement sections 1 - 2
	Promotions and marketing	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	
Commute Trip Reductions	Required commute trip reduction program	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	TDM Strategy Appendix, Commute Trip Reductions sections 1 - 4
	Alternative Work Schedules and Telecommute Program	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	
	Employer sponsored vanpool or shuttle	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	
	Ride-share program	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	
Shared Mobility	Car-share	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	TDM Strategy Appendix, Shared Mobility sections 1 - 3
	Bike share	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	
	School carpool program	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	

TDM Adjustments by Trip Purpose & Strategy, Cont.

Place type: Urban

		Home Based Work Production		*Home Based Work Attraction*		*Home Based Other Production*		*Home Based Other Attraction*		*Non-Home Based Other Production*		*Non-Home Based Other Attraction*		*Source*
		Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	
Bicycle Infrastructure	Implement/ Improve on-street bicycle facility	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	TDM Strategy Appendix, Bicycle Infrastructure sections 1 - 3
	Include Bike parking per LAMC	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	
	Include secure bike parking and showers	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	
Neighborhood Enhancement	Traffic calming improvements	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	TDM Strategy Appendix, Neighborhood Enhancement
	Pedestrian network improvements	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	

Final Combined & Maximum TDM Effect

	Home Based Work Production		*Home Based Work Attraction*		*Home Based Other Production*		*Home Based Other Attraction*		*Non-Home Based Other Production*		*Non-Home Based Other Attraction*	
	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated
COMBINED TOTAL	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*
MAX. TDM EFFECT	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*

= Minimum (X%, 1-[(1-A)*(1-B)…])
where X%=

PLACE TYPE MAX:	urban	75%
	compact infill	*40%*
	suburban center	*20%*
	suburban	*15%*

Note: (1-[(1-A)*(1-B)…]) reflects the dampened combined effectiveness of TDM Strategies (e.g., A, B,…). See the TDM Strategy Appendix (*Transportation Assessment Guidelines Attachment G)* for further discussion of dampening.

CITY OF LOS ANGELES VMT CALCULATOR

Report 4: MXD Methodology

Date: November 23, 2020
Project Name: J1761 - 905 Beacon Ave
Project Scenario: Project
Project Address: 905 S BEACON AVE, 90015

Version 1.3

MXD Methodology - Project Without TDM

	Unadjusted Trips	MXD Adjustment	MXD Trips	Average Trip Length	Unadjusted VMT	MXD VMT
Home Based Work Production	130	-31.5%	89	6.9	897	614
Home Based Other Production	360	-57.2%	154	4.6	1,656	708
Non-Home Based Other Production	212	-7.1%	197	7.7	1,632	1,517
Home-Based Work Attraction	14	-57.1%	6	10.6	148	64
Home-Based Other Attraction	273	-52.4%	130	6.3	1,720	819
Non-Home Based Other Attraction	85	-8.2%	78	7.1	604	554

MXD Methodology with TDM Measures

	Proposed Project			*Project with Mitigation Measures*		
	TDM Adjustment	Project Trips	Project VMT	TDM Adjustment	Mitigated Trips	Mitigated VMT
Home Based Work Production	-0.6%	88	610	-0.6%	88	610
Home Based Other Production	-0.6%	153	704	-0.6%	153	704
Non-Home Based Other Production	-0.6%	196	1,508	-0.6%	196	1,508
Home-Based Work Attraction	-0.6%	6	64	-0.6%	6	64
Home-Based Other Attraction	-0.6%	129	814	-0.6%	129	814
Non-Home Based Other Attraction	-0.6%	78	551	-0.6%	78	551

MXD VMT Methodology Per Capita & Per Employee

Total Population: 327
Total Employees: 10
APC: Central

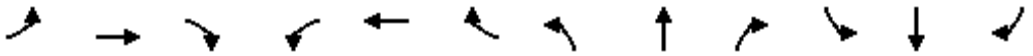
	Proposed Project	*Project with Mitigation Measures*
Total Home Based Production VMT	**1,314**	**1,314**
Total Home Based Work Attraction VMT	**64**	**64**
Total Home Based VMT Per Capita	**4.0**	**4.0**
Total Work Based VMT Per Employee	**N/A**	**N/A**

Appendix E

HCM Analysis Worksheets

HCM 6th Signalized Intersection Summary
1: James M Wood Bl & Burlington Avenue

01/27/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	576	41	24	260	28	65	216	19	36	126	51
Future Volume (veh/h)	30	576	41	24	260	28	65	216	19	36	126	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	626	45	26	283	30	71	235	21	39	137	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	697	1068	77	429	1030	109	137	305	25	111	257	93
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1067	1724	124	767	1662	176	285	1353	112	181	1141	413
Grp Volume(v), veh/h	33	0	671	26	0	313	327	0	0	231	0	0
Grp Sat Flow(s),veh/h/ln	1067	0	1848	767	0	1839	1751	0	0	1735	0	0
Q Serve(g_s), s	0.9	0.0	13.0	1.3	0.0	4.7	3.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.6	0.0	13.0	14.3	0.0	4.7	10.4	0.0	0.0	6.9	0.0	0.0
Prop In Lane	1.00		0.07	1.00		0.10	0.22		0.06	0.17		0.24
Lane Grp Cap(c), veh/h	697	0	1145	429	0	1139	468	0	0	461	0	0
V/C Ratio(X)	0.05	0.00	0.59	0.06	0.00	0.27	0.70	0.00	0.00	0.50	0.00	0.00
Avail Cap(c_a), veh/h	697	0	1145	429	0	1139	626	0	0	617	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.5	0.0	6.8	11.1	0.0	5.2	21.9	0.0	0.0	20.7	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	2.2	0.3	0.0	0.6	2.2	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(85%),veh/ln	0.3	0.0	6.5	0.4	0.0	2.7	6.4	0.0	0.0	4.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	0.0	9.0	11.4	0.0	5.8	24.1	0.0	0.0	21.5	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		704			339			327			231	
Approach Delay, s/veh		8.9			6.3			24.1			21.5	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		41.8		18.2		41.8		18.2				
Change Period (Y+Rc), s		4.6		* 4.7		4.6		* 4.7				
Max Green Setting (Gmax), s		31.4		* 19		31.4		* 19				
Max Q Clear Time (g_c+I1), s		16.3		12.4		15.0		8.9				
Green Ext Time (p_c), s		1.8		1.1		4.5		0.9				

Intersection Summary												
HCM 6th Ctrl Delay			13.3									
HCM 6th LOS			B									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	568	29	15	260	28	31	24	55	12	18	24
Future Vol, veh/h	39	568	29	15	260	28	31	24	55	12	18	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	617	32	16	283	30	34	26	60	13	20	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	313	0	0	649	0	0	1070	1062	633	1090	1063	298
Stage 1	-	-	-	-	-	-	717	717	-	330	330	-
Stage 2	-	-	-	-	-	-	353	345	-	760	733	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1247	-	-	937	-	-	199	223	480	193	223	741
Stage 1	-	-	-	-	-	-	421	434	-	683	646	-
Stage 2	-	-	-	-	-	-	664	636	-	398	426	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1247	-	-	937	-	-	172	212	480	147	212	741
Mov Cap-2 Maneuver	-	-	-	-	-	-	172	212	-	147	212	-
Stage 1	-	-	-	-	-	-	407	419	-	660	635	-
Stage 2	-	-	-	-	-	-	610	625	-	316	412	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.4	28.5	21.9
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	270	1247	-	-	937	-	-	271
HCM Lane V/C Ratio	0.443	0.034	-	-	0.017	-	-	0.217
HCM Control Delay (s)	28.5	8	-	-	8.9	-	-	21.9
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	2.1	0.1	-	-	0.1	-	-	0.8

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	1694	11	11	1065	61	3	6	16	8	7	34
Future Vol, veh/h	68	1694	11	11	1065	61	3	6	16	8	7	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	74	1841	12	12	1158	66	3	7	17	9	8	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1224	0	0	1853	0	0	2486	3243	927	2103	3216	612
Stage 1	-	-	-	-	-	-	1995	1995	-	1215	1215	-
Stage 2	-	-	-	-	-	-	491	1248	-	888	2001	-
Critical Hdwy	5.34	-	-	5.34	-	-	6.44	6.54	7.14	6.44	6.54	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.34	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.74	5.54	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	3.82	4.02	3.92	3.82	4.02	3.92
Pot Cap-1 Maneuver	305	-	-	148	-	-	31	9	232	55	10	374
Stage 1	-	-	-	-	-	-	39	104	-	141	252	-
Stage 2	-	-	-	-	-	-	482	243	-	276	103	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	305	-	-	148	-	-	-	~ 6	232	-	~ 7	374
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 6	-	-	~ 7	-
Stage 1	-	-	-	-	-	-	30	79	-	107	232	-
Stage 2	-	-	-	-	-	-	386	223	-	177	78	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.3		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	305	-	-	148	-	-	-
HCM Lane V/C Ratio	-	0.242	-	-	0.081	-	-	-
HCM Control Delay (s)	-	20.5	-	-	31.5	-	-	-
HCM Lane LOS	-	C	-	-	D	-	-	-
HCM 95th %tile Q(veh)	-	0.9	-	-	0.3	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	576	0	0	312	0	0
Future Vol, veh/h	576	0	0	312	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	626	0	0	339	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	626	0	965	626
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	339	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	956	-	283	484
Stage 1	-	-	-	-	533	-
Stage 2	-	-	-	-	722	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	956	-	283	484
Mov Cap-2 Maneuver	-	-	-	-	404	-
Stage 1	-	-	-	-	533	-
Stage 2	-	-	-	-	722	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	956	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	61	62	0
Future Vol, veh/h	0	0	0	61	62	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	66	67	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	133	67	67	0	-	0
Stage 1	67	-	-	-	-	-
Stage 2	66	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	861	997	1535	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	957	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	861	997	1535	-	-	-
Mov Cap-2 Maneuver	861	-	-	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	957	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1535	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM 6th Signalized Intersection Summary
1: James M Wood Bl & Burlington Avenue

01/27/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	449	40	35	309	37	62	234	35	24	253	59
Future Volume (veh/h)	80	449	40	35	309	37	62	234	35	24	253	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	87	488	43	38	336	40	67	254	38	26	275	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	603	994	88	486	962	114	128	329	46	82	367	82
Arrive On Green	0.59	0.59	0.59	0.59	0.59	0.59	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1007	1694	149	873	1640	195	219	1272	176	67	1418	316
Grp Volume(v), veh/h	87	0	531	38	0	376	359	0	0	365	0	0
Grp Sat Flow(s),veh/h/ln	1007	0	1843	873	0	1835	1667	0	0	1801	0	0
Q Serve(g_s), s	3.0	0.0	10.0	1.6	0.0	6.4	0.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.3	0.0	10.0	11.6	0.0	6.4	12.0	0.0	0.0	11.2	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.11	0.19		0.11	0.07		0.18
Lane Grp Cap(c), veh/h	603	0	1081	486	0	1076	502	0	0	530	0	0
V/C Ratio(X)	0.14	0.00	0.49	0.08	0.00	0.35	0.71	0.00	0.00	0.69	0.00	0.00
Avail Cap(c_a), veh/h	603	0	1081	486	0	1076	697	0	0	740	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.9	0.0	7.2	10.6	0.0	6.5	20.8	0.0	0.0	20.6	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	1.6	0.3	0.0	0.9	2.1	0.0	0.0	1.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(85%),veh/ln	1.1	0.0	5.4	0.6	0.0	3.7	6.8	0.0	0.0	6.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.4	0.0	8.8	10.9	0.0	7.3	22.9	0.0	0.0	22.2	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		618			414			359			365	
Approach Delay, s/veh		8.9			7.7			22.9			22.2	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	39.8	20.2	39.8	20.2
Change Period (Y+Rc), s	4.6	* 4.7	4.6	* 4.7
Max Green Setting (Gmax), s	27.9	* 23	27.9	* 23
Max Q Clear Time (g_c+I1), s	13.6	14.0	12.0	13.2
Green Ext Time (p_c), s	2.2	1.5	3.6	1.6

Intersection Summary	
HCM 6th Ctrl Delay	14.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	13.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	409	31	27	293	23	31	77	116	9	46	72
Future Vol, veh/h	62	409	31	27	293	23	31	77	116	9	46	72
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	445	34	29	318	25	34	84	126	10	50	78

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	343	0	0	479	0	0	1049	997	462	1090	1002	331
Stage 1	-	-	-	-	-	-	596	596	-	389	389	-
Stage 2	-	-	-	-	-	-	453	401	-	701	613	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1216	-	-	1083	-	-	205	244	600	193	242	711
Stage 1	-	-	-	-	-	-	490	492	-	635	608	-
Stage 2	-	-	-	-	-	-	586	601	-	429	483	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1216	-	-	1083	-	-	142	224	600	102	222	711
Mov Cap-2 Maneuver	-	-	-	-	-	-	142	224	-	102	222	-
Stage 1	-	-	-	-	-	-	463	465	-	600	592	-
Stage 2	-	-	-	-	-	-	465	585	-	263	456	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.7	54.8	24.5
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	297	1216	-	-	1083	-	-	320
HCM Lane V/C Ratio	0.82	0.055	-	-	0.027	-	-	0.431
HCM Control Delay (s)	54.8	8.1	-	-	8.4	-	-	24.5
HCM Lane LOS	F	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	6.8	0.2	-	-	0.1	-	-	2.1

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	113	1501	34	29	1154	68	13	8	34	25	17	99
Future Vol, veh/h	113	1501	34	29	1154	68	13	8	34	25	17	99
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	123	1632	37	32	1254	74	14	9	37	27	18	108

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1328	0	0	1669	0	0	2472	3289	835	2258	3270	664
Stage 1	-	-	-	-	-	-	1897	1897	-	1355	1355	-
Stage 2	-	-	-	-	-	-	575	1392	-	903	1915	-
Critical Hdwy	5.34	-	-	5.34	-	-	6.44	6.54	7.14	6.44	6.54	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.34	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.74	5.54	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	3.82	4.02	3.92	3.82	4.02	3.92
Pot Cap-1 Maneuver	271	-	-	184	-	-	32	9	267	44	~ 9	346
Stage 1	-	-	-	-	-	-	46	116	-	112	216	-
Stage 2	-	-	-	-	-	-	429	207	-	270	114	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	271	-	-	184	-	-	-	~ 4	267	-	~ 4	346
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 4	-	-	~ 4	-
Stage 1	-	-	-	-	-	-	25	63	-	61	178	-
Stage 2	-	-	-	-	-	-	219	171	-	110	62	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0.7		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	271	-	-	184	-	-	-
HCM Lane V/C Ratio	-	0.453	-	-	0.171	-	-	-
HCM Control Delay (s)	-	28.8	-	-	28.6	-	-	-
HCM Lane LOS	-	D	-	-	D	-	-	-
HCM 95th %tile Q(veh)	-	2.2	-	-	0.6	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	449	0	0	381	0	0
Future Vol, veh/h	449	0	0	381	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	488	0	0	414	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	488	0	902	488
Stage 1	-	-	-	-	488	-
Stage 2	-	-	-	-	414	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1075	-	308	580
Stage 1	-	-	-	-	617	-
Stage 2	-	-	-	-	667	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1075	-	308	580
Mov Cap-2 Maneuver	-	-	-	-	433	-
Stage 1	-	-	-	-	617	-
Stage 2	-	-	-	-	667	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1075	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

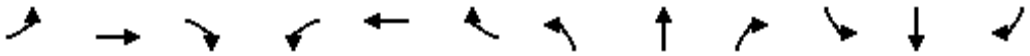
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	68	104	0
Future Vol, veh/h	0	0	0	68	104	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	74	113	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	187	113	113	0	-	0
Stage 1	113	-	-	-	-	-
Stage 2	74	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	802	940	1476	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	949	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	802	940	1476	-	-	-
Mov Cap-2 Maneuver	802	-	-	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	949	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1476	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	583	41	24	267	28	65	216	21	36	126	51
Future Volume (veh/h)	30	583	41	24	267	28	65	216	21	36	126	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	634	45	26	290	30	71	235	23	39	137	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	690	1067	76	422	1031	107	137	305	28	111	259	94
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1060	1726	122	761	1667	172	283	1344	122	180	1141	413
Grp Volume(v), veh/h	33	0	679	26	0	320	329	0	0	231	0	0
Grp Sat Flow(s),veh/h/ln	1060	0	1848	761	0	1839	1750	0	0	1734	0	0
Q Serve(g_s), s	0.9	0.0	13.3	1.3	0.0	4.8	3.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.7	0.0	13.3	14.6	0.0	4.8	10.5	0.0	0.0	6.9	0.0	0.0
Prop In Lane	1.00		0.07	1.00		0.09	0.22		0.07	0.17		0.24
Lane Grp Cap(c), veh/h	690	0	1143	422	0	1137	470	0	0	463	0	0
V/C Ratio(X)	0.05	0.00	0.59	0.06	0.00	0.28	0.70	0.00	0.00	0.50	0.00	0.00
Avail Cap(c_a), veh/h	690	0	1143	422	0	1137	626	0	0	617	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.6	0.0	6.9	11.3	0.0	5.3	21.9	0.0	0.0	20.6	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	2.3	0.3	0.0	0.6	2.3	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(85%),veh/ln	0.3	0.0	6.7	0.4	0.0	2.8	6.5	0.0	0.0	4.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.7	0.0	9.2	11.6	0.0	5.9	24.1	0.0	0.0	21.4	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		712			346			329			231	
Approach Delay, s/veh		9.1			6.3			24.1			21.4	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		41.7		18.3		41.7		18.3				
Change Period (Y+Rc), s		4.6		* 4.7		4.6		* 4.7				
Max Green Setting (Gmax), s		31.4		* 19		31.4		* 19				
Max Q Clear Time (g_c+I1), s		16.6		12.5		15.3		8.9				
Green Ext Time (p_c), s		1.8		1.1		4.5		0.9				

Intersection Summary		
HCM 6th Ctrl Delay		13.3
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	570	34	17	262	28	34	26	63	12	19	24
Future Vol, veh/h	39	570	34	17	262	28	34	26	63	12	19	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	620	37	18	285	30	37	28	68	13	21	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	315	0	0	657	0	0	1083	1074	639	1107	1077	300
Stage 1	-	-	-	-	-	-	723	723	-	336	336	-
Stage 2	-	-	-	-	-	-	360	351	-	771	741	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1245	-	-	931	-	-	195	220	476	188	219	740
Stage 1	-	-	-	-	-	-	417	431	-	678	642	-
Stage 2	-	-	-	-	-	-	658	632	-	393	423	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1245	-	-	931	-	-	167	209	476	139	208	740
Mov Cap-2 Maneuver	-	-	-	-	-	-	167	209	-	139	208	-
Stage 1	-	-	-	-	-	-	403	416	-	655	630	-
Stage 2	-	-	-	-	-	-	602	620	-	303	409	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.5	31.3	22.8
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	267	1245	-	-	931	-	-	262
HCM Lane V/C Ratio	0.501	0.034	-	-	0.02	-	-	0.228
HCM Control Delay (s)	31.3	8	-	-	8.9	-	-	22.8
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	2.6	0.1	-	-	0.1	-	-	0.9

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	70	1694	11	11	1067	65	3	6	16	18	7	45
Future Vol, veh/h	70	1694	11	11	1067	65	3	6	16	18	7	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	76	1841	12	12	1160	71	3	7	17	20	8	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1231	0	0	1853	0	0	2491	3254	927	2112	3225	616
Stage 1	-	-	-	-	-	-	1999	1999	-	1220	1220	-
Stage 2	-	-	-	-	-	-	492	1255	-	892	2005	-
Critical Hdwy	5.34	-	-	5.34	-	-	6.44	6.54	7.14	6.44	6.54	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.34	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.74	5.54	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	3.82	4.02	3.92	3.82	4.02	3.92
Pot Cap-1 Maneuver	302	-	-	148	-	-	31	9	232	54	9	372
Stage 1	-	-	-	-	-	-	39	103	-	140	251	-
Stage 2	-	-	-	-	-	-	482	241	-	274	103	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	302	-	-	148	-	-	-	~ 6	232	-	~ 6	372
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 6	-	-	~ 6	-
Stage 1	-	-	-	-	-	-	29	77	-	105	231	-
Stage 2	-	-	-	-	-	-	372	221	-	174	77	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.3		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	302	-	-	148	-	-	-
HCM Lane V/C Ratio	-	0.252	-	-	0.081	-	-	-
HCM Control Delay (s)	-	20.9	-	-	31.5	-	-	-
HCM Lane LOS	-	C	-	-	D	-	-	-
HCM 95th %tile Q(veh)	-	1	-	-	0.3	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	579	6	2	315	4	4
Future Vol, veh/h	579	6	2	315	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	629	7	2	342	4	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	636	0	979	633
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	346	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	947	-	277	480
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	716	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	947	-	276	480
Mov Cap-2 Maneuver	-	-	-	-	398	-
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	715	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	13.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	435	-	-	947	-
HCM Lane V/C Ratio	0.02	-	-	0.002	-
HCM Control Delay (s)	13.4	-	-	8.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	19	7	61	64	5
Future Vol, veh/h	13	19	7	61	64	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	21	8	66	70	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	155	73	75	0	-	0
Stage 1	73	-	-	-	-	-
Stage 2	82	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	836	989	1524	-	-	-
Stage 1	950	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	832	989	1524	-	-	-
Mov Cap-2 Maneuver	832	-	-	-	-	-
Stage 1	945	-	-	-	-	-
Stage 2	941	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1524	-	919	-	-
HCM Lane V/C Ratio	0.005	-	0.038	-	-
HCM Control Delay (s)	7.4	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

HCM 6th Signalized Intersection Summary
1: James M Wood Bl & Burlington Avenue

01/27/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	461	40	35	314	37	62	234	37	24	253	59
Future Volume (veh/h)	80	461	40	35	314	37	62	234	37	24	253	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	87	501	43	38	341	40	67	254	40	26	275	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	598	994	85	475	962	113	128	329	48	82	368	82
Arrive On Green	0.59	0.59	0.59	0.59	0.59	0.59	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1002	1698	146	862	1643	193	218	1266	185	67	1418	316
Grp Volume(v), veh/h	87	0	544	38	0	381	361	0	0	365	0	0
Grp Sat Flow(s),veh/h/ln	1002	0	1844	862	0	1836	1669	0	0	1800	0	0
Q Serve(g_s), s	3.0	0.0	10.4	1.6	0.0	6.5	0.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.5	0.0	10.4	12.0	0.0	6.5	12.1	0.0	0.0	11.1	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.10	0.19		0.11	0.07		0.18
Lane Grp Cap(c), veh/h	598	0	1080	475	0	1075	504	0	0	532	0	0
V/C Ratio(X)	0.15	0.00	0.50	0.08	0.00	0.35	0.72	0.00	0.00	0.69	0.00	0.00
Avail Cap(c_a), veh/h	598	0	1080	475	0	1075	697	0	0	740	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.0	0.0	7.3	10.9	0.0	6.5	20.8	0.0	0.0	20.6	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	1.7	0.3	0.0	0.9	2.2	0.0	0.0	1.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(85%),veh/ln	1.1	0.0	5.6	0.6	0.0	3.7	6.9	0.0	0.0	6.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.5	0.0	9.0	11.2	0.0	7.4	22.9	0.0	0.0	22.2	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		631			419			361			365	
Approach Delay, s/veh		9.1			7.8			22.9			22.2	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		39.7		20.3		39.7		20.3				
Change Period (Y+Rc), s		4.6		* 4.7		4.6		* 4.7				
Max Green Setting (Gmax), s		27.9		* 23		27.9		* 23				
Max Q Clear Time (g_c+I1), s		14.0		14.1		12.4		13.1				
Green Ext Time (p_c), s		2.2		1.5		3.6		1.6				

Intersection Summary		
HCM 6th Ctrl Delay		14.3
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	16

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	411	41	32	296	23	33	78	121	9	48	72
Future Vol, veh/h	62	411	41	32	296	23	33	78	121	9	48	72
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	447	45	35	322	25	36	85	132	10	52	78

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	347	0	0	492	0	0	1074	1021	470	1117	1031	335
Stage 1	-	-	-	-	-	-	604	604	-	405	405	-
Stage 2	-	-	-	-	-	-	470	417	-	712	626	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1212	-	-	1071	-	-	198	236	594	185	233	707
Stage 1	-	-	-	-	-	-	485	488	-	622	598	-
Stage 2	-	-	-	-	-	-	574	591	-	423	477	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1212	-	-	1071	-	-	134	216	594	94	213	707
Mov Cap-2 Maneuver	-	-	-	-	-	-	134	216	-	94	213	-
Stage 1	-	-	-	-	-	-	458	461	-	588	578	-
Stage 2	-	-	-	-	-	-	449	571	-	254	451	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.8	66.5	26.5
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	286	1212	-	-	1071	-	-	305
HCM Lane V/C Ratio	0.882	0.056	-	-	0.032	-	-	0.46
HCM Control Delay (s)	66.5	8.1	-	-	8.5	-	-	26.5
HCM Lane LOS	F	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	7.8	0.2	-	-	0.1	-	-	2.3

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	120	1501	34	29	1156	80	13	8	34	32	17	106
Future Vol, veh/h	120	1501	34	29	1156	80	13	8	34	32	17	106
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	130	1632	37	32	1257	87	14	9	37	35	18	115

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1344	0	0	1669	0	0	2487	3319	835	2282	3294	672
Stage 1	-	-	-	-	-	-	1911	1911	-	1365	1365	-
Stage 2	-	-	-	-	-	-	576	1408	-	917	1929	-
Critical Hdwy	5.34	-	-	5.34	-	-	6.44	6.54	7.14	6.44	6.54	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.34	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.74	5.54	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	3.82	4.02	3.92	3.82	4.02	3.92
Pot Cap-1 Maneuver	266	-	-	184	-	-	31	~ 8	267	42	~ 9	342
Stage 1	-	-	-	-	-	-	45	114	-	110	214	-
Stage 2	-	-	-	-	-	-	428	204	-	265	112	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	266	-	-	184	-	-	-	~ 3	267	-	~ 4	342
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 3	-	-	~ 4	-
Stage 1	-	-	-	-	-	-	23	58	-	56	177	-
Stage 2	-	-	-	-	-	-	210	169	-	99	57	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0.7		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	266	-	-	184	-	-	-
HCM Lane V/C Ratio	-	0.49	-	-	0.171	-	-	-
HCM Control Delay (s)	-	30.9	-	-	28.6	-	-	-
HCM Lane LOS	-	D	-	-	D	-	-	-
HCM 95th %tile Q(veh)	-	2.5	-	-	0.6	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	457	6	3	383	3	3
Future Vol, veh/h	457	6	3	383	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	497	7	3	416	3	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	504	0	923	501
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	422	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1061	-	299	570
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	662	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1061	-	298	570
Mov Cap-2 Maneuver	-	-	-	-	425	-
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	660	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	487	-	-	1061	-
HCM Lane V/C Ratio	0.013	-	-	0.003	-
HCM Control Delay (s)	12.5	-	-	8.4	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

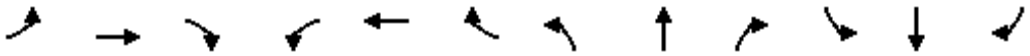
Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	13	18	68	106	15
Future Vol, veh/h	8	13	18	68	106	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	14	20	74	115	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	237	123	131	0	-	0
Stage 1	123	-	-	-	-	-
Stage 2	114	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	751	928	1454	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	911	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	740	928	1454	-	-	-
Mov Cap-2 Maneuver	740	-	-	-	-	-
Stage 1	889	-	-	-	-	-
Stage 2	911	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	1.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1454	-	846	-	-
HCM Lane V/C Ratio	0.013	-	0.027	-	-
HCM Control Delay (s)	7.5	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	618	46	25	291	29	72	223	20	37	130	55
Future Volume (veh/h)	31	618	46	25	291	29	72	223	20	37	130	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	672	50	27	316	32	78	242	22	40	141	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	658	1051	78	385	1021	103	144	308	26	111	262	100
Arrive On Green	0.61	0.61	0.61	0.61	0.61	0.61	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1033	1719	128	731	1671	169	303	1320	112	176	1120	430
Grp Volume(v), veh/h	34	0	722	27	0	348	342	0	0	241	0	0
Grp Sat Flow(s),veh/h/ln	1033	0	1847	731	0	1840	1734	0	0	1726	0	0
Q Serve(g_s), s	1.0	0.0	15.0	1.5	0.0	5.4	3.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.4	0.0	15.0	16.4	0.0	5.4	11.1	0.0	0.0	7.2	0.0	0.0
Prop In Lane	1.00		0.07	1.00		0.09	0.23		0.06	0.17		0.25
Lane Grp Cap(c), veh/h	658	0	1129	385	0	1125	479	0	0	473	0	0
V/C Ratio(X)	0.05	0.00	0.64	0.07	0.00	0.31	0.71	0.00	0.00	0.51	0.00	0.00
Avail Cap(c_a), veh/h	658	0	1129	385	0	1125	596	0	0	589	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.1	0.0	7.4	12.7	0.0	5.6	21.7	0.0	0.0	20.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	2.8	0.4	0.0	0.7	3.0	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(85%),veh/ln	0.4	0.0	7.5	0.5	0.0	3.2	6.8	0.0	0.0	4.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.3	0.0	10.2	13.0	0.0	6.3	24.8	0.0	0.0	21.2	0.0	0.0
LnGrp LOS	A	A	B	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		756			375			342			241	
Approach Delay, s/veh		10.1			6.8			24.8			21.2	
Approach LOS		B			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		41.3		18.7		41.3		18.7				
Change Period (Y+Rc), s		4.6		* 4.7		4.6		* 4.7				
Max Green Setting (Gmax), s		32.4		* 18		32.4		* 18				
Max Q Clear Time (g_c+I1), s		18.4		13.1		17.0		9.2				
Green Ext Time (p_c), s		1.9		0.9		4.8		0.9				

Intersection Summary		
HCM 6th Ctrl Delay		13.9
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	590	49	15	274	29	48	33	60	12	29	25
Future Vol, veh/h	40	590	49	15	274	29	48	33	60	12	29	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	641	53	16	298	32	52	36	65	13	32	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	330	0	0	694	0	0	1130	1116	668	1150	1126	314
Stage 1	-	-	-	-	-	-	754	754	-	346	346	-
Stage 2	-	-	-	-	-	-	376	362	-	804	780	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1229	-	-	901	-	-	181	208	458	175	205	726
Stage 1	-	-	-	-	-	-	401	417	-	670	635	-
Stage 2	-	-	-	-	-	-	645	625	-	377	406	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1229	-	-	901	-	-	147	197	458	124	194	726
Mov Cap-2 Maneuver	-	-	-	-	-	-	147	197	-	124	194	-
Stage 1	-	-	-	-	-	-	387	402	-	647	624	-
Stage 2	-	-	-	-	-	-	579	614	-	284	392	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.4	49	26.9
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	226	1229	-	-	901	-	-	235
HCM Lane V/C Ratio	0.678	0.035	-	-	0.018	-	-	0.305
HCM Control Delay (s)	49	8	-	-	9.1	-	-	26.9
HCM Lane LOS	E	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	4.3	0.1	-	-	0.1	-	-	1.2

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	73	1760	30	11	1121	63	19	30	16	8	36	35
Future Vol, veh/h	73	1760	30	11	1121	63	19	30	16	8	36	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	79	1913	33	12	1218	68	21	33	17	9	39	38

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1286	0	0	1946	0	0	2619	3398	973	2216	3380	643
Stage 1	-	-	-	-	-	-	2088	2088	-	1276	1276	-
Stage 2	-	-	-	-	-	-	531	1310	-	940	2104	-
Critical Hdwy	5.34	-	-	5.34	-	-	6.44	6.54	7.14	6.44	6.54	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.34	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.74	5.54	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	3.82	4.02	3.92	3.82	4.02	3.92
Pot Cap-1 Maneuver	284	-	-	133	-	-	26	~ 7	216	46	~ 7	357
Stage 1	-	-	-	-	-	-	33	93	-	128	236	-
Stage 2	-	-	-	-	-	-	456	227	-	256	91	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	284	-	-	133	-	-	-	~ 5	216	-	~ 5	357
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 5	-	-	~ 5	-
Stage 1	-	-	-	-	-	-	24	67	-	92	215	-
Stage 2	-	-	-	-	-	-	303	207	-	87	66	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.3		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	284	-	-	133	-	-	-
HCM Lane V/C Ratio	-	0.279	-	-	0.09	-	-	-
HCM Control Delay (s)	-	22.5	-	-	34.7	-	-	-
HCM Lane LOS	-	C	-	-	D	-	-	-
HCM 95th %tile Q(veh)	-	1.1	-	-	0.3	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	618	0	0	343	0	0
Future Vol, veh/h	618	0	0	343	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	672	0	0	373	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	672	0	1045	672
Stage 1	-	-	-	-	672	-
Stage 2	-	-	-	-	373	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	919	-	253	456
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	696	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	919	-	253	456
Mov Cap-2 Maneuver	-	-	-	-	379	-
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	696	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	919	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	90	93	0
Future Vol, veh/h	0	0	0	90	93	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	98	101	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	199	101	101	0	-	0
Stage 1	101	-	-	-	-	-
Stage 2	98	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	790	954	1491	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	926	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	790	954	1491	-	-	-
Mov Cap-2 Maneuver	790	-	-	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	926	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1491	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM 6th Signalized Intersection Summary
1: James M Wood Bl & Burlington Avenue

01/27/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	471	45	36	328	41	68	254	36	25	263	63
Future Volume (veh/h)	91	471	45	36	328	41	68	254	36	25	263	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	99	512	49	39	357	45	74	276	39	27	286	68
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	559	954	91	441	924	117	134	349	46	83	391	89
Arrive On Green	0.57	0.57	0.57	0.57	0.57	0.57	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	983	1681	161	849	1628	205	225	1260	166	66	1409	320
Grp Volume(v), veh/h	99	0	561	39	0	402	389	0	0	381	0	0
Grp Sat Flow(s),veh/h/ln	983	0	1841	849	0	1833	1651	0	0	1795	0	0
Q Serve(g_s), s	3.7	0.0	11.4	1.8	0.0	7.3	1.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	11.0	0.0	11.4	13.2	0.0	7.3	13.2	0.0	0.0	11.5	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.11	0.19		0.10	0.07		0.18
Lane Grp Cap(c), veh/h	559	0	1046	441	0	1041	529	0	0	562	0	0
V/C Ratio(X)	0.18	0.00	0.54	0.09	0.00	0.39	0.74	0.00	0.00	0.68	0.00	0.00
Avail Cap(c_a), veh/h	559	0	1046	441	0	1041	680	0	0	725	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.2	0.0	8.1	12.1	0.0	7.2	20.2	0.0	0.0	19.8	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	2.0	0.4	0.0	1.1	3.0	0.0	0.0	1.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(85%),veh/ln	1.5	0.0	6.2	0.6	0.0	4.2	7.4	0.0	0.0	6.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.9	0.0	10.0	12.5	0.0	8.3	23.3	0.0	0.0	21.6	0.0	0.0
LnGrp LOS	B	A	B	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		660			441			389			381	
Approach Delay, s/veh		10.2			8.6			23.3			21.6	
Approach LOS		B			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		38.7		21.3		38.7		21.3				
Change Period (Y+Rc), s		4.6		* 4.7		4.6		* 4.7				
Max Green Setting (Gmax), s		28.4		* 22		28.4		* 22				
Max Q Clear Time (g_c+I1), s		15.2		15.2		13.4		13.5				
Green Ext Time (p_c), s		2.3		1.4		3.8		1.6				

Intersection Summary												
HCM 6th Ctrl Delay			14.9									
HCM 6th LOS			B									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	19.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	64	426	35	28	311	24	36	81	124	9	48	74
Future Vol, veh/h	64	426	35	28	311	24	36	81	124	9	48	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	70	463	38	30	338	26	39	88	135	10	52	80

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	364	0	0	501	0	0	1099	1046	482	1145	1052	351
Stage 1	-	-	-	-	-	-	622	622	-	411	411	-
Stage 2	-	-	-	-	-	-	477	424	-	734	641	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1195	-	-	1063	-	-	190	228	584	177	227	692
Stage 1	-	-	-	-	-	-	474	479	-	618	595	-
Stage 2	-	-	-	-	-	-	569	587	-	412	469	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1195	-	-	1063	-	-	127	209	584	86	208	692
Mov Cap-2 Maneuver	-	-	-	-	-	-	127	209	-	86	208	-
Stage 1	-	-	-	-	-	-	446	451	-	582	578	-
Stage 2	-	-	-	-	-	-	445	571	-	240	441	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.7	85.1	27.9
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	273	1195	-	-	1063	-	-	296
HCM Lane V/C Ratio	0.96	0.058	-	-	0.029	-	-	0.481
HCM Control Delay (s)	85.1	8.2	-	-	8.5	-	-	27.9
HCM Lane LOS	F	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	9.2	0.2	-	-	0.1	-	-	2.5

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	120	1565	38	30	1214	70	17	14	35	26	22	102
Future Vol, veh/h	120	1565	38	30	1214	70	17	14	35	26	22	102
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	130	1701	41	33	1320	76	18	15	38	28	24	111

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1396	0	0	1742	0	0	2588	3444	871	2372	3426	698
Stage 1	-	-	-	-	-	-	1982	1982	-	1424	1424	-
Stage 2	-	-	-	-	-	-	606	1462	-	948	2002	-
Critical Hdwy	5.34	-	-	5.34	-	-	6.44	6.54	7.14	6.44	6.54	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.34	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.74	5.54	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	3.82	4.02	3.92	3.82	4.02	3.92
Pot Cap-1 Maneuver	251	-	-	169	-	-	27	~ 7	253	37	~ 7	328
Stage 1	-	-	-	-	-	-	40	105	-	100	200	-
Stage 2	-	-	-	-	-	-	411	192	-	253	103	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	251	-	-	169	-	-	-	~ 3	253	-	~ 3	328
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 3	-	-	~ 3	-
Stage 1	-	-	-	-	-	-	19	51	-	48	161	-
Stage 2	-	-	-	-	-	-	186	155	-	73	50	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.4	0.7		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	251	-	-	169	-	-	-
HCM Lane V/C Ratio	-	0.52	-	-	0.193	-	-	-
HCM Control Delay (s)	-	33.9	-	-	31.3	-	-	-
HCM Lane LOS	-	D	-	-	D	-	-	-
HCM 95th %tile Q(veh)	-	2.7	-	-	0.7	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	471	0	0	405	0	0
Future Vol, veh/h	471	0	0	405	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	512	0	0	440	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	512	0	952	512
Stage 1	-	-	-	-	512	-
Stage 2	-	-	-	-	440	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1053	-	288	562
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	649	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1053	-	288	562
Mov Cap-2 Maneuver	-	-	-	-	416	-
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	649	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1053	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	80	111	0
Future Vol, veh/h	0	0	0	80	111	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	87	121	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	208	121	121	0	-	0
Stage 1	121	-	-	-	-	-
Stage 2	87	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	780	930	1467	-	-	-
Stage 1	904	-	-	-	-	-
Stage 2	936	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	780	930	1467	-	-	-
Mov Cap-2 Maneuver	780	-	-	-	-	-
Stage 1	904	-	-	-	-	-
Stage 2	936	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1467	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM 6th Signalized Intersection Summary
1: James M Wood Bl & Burlington Avenue

01/27/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	625	46	25	298	29	72	223	22	37	130	55
Future Volume (veh/h)	31	625	46	25	298	29	72	223	22	37	130	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	679	50	27	324	32	78	242	24	40	141	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	650	1050	77	379	1022	101	144	308	28	111	263	101
Arrive On Green	0.61	0.61	0.61	0.61	0.61	0.61	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1025	1721	127	726	1675	165	301	1313	121	176	1120	429
Grp Volume(v), veh/h	34	0	729	27	0	356	344	0	0	241	0	0
Grp Sat Flow(s),veh/h/ln	1025	0	1848	726	0	1841	1734	0	0	1725	0	0
Q Serve(g_s), s	1.0	0.0	15.2	1.5	0.0	5.6	3.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.6	0.0	15.2	16.7	0.0	5.6	11.1	0.0	0.0	7.2	0.0	0.0
Prop In Lane	1.00		0.07	1.00		0.09	0.23		0.07	0.17		0.25
Lane Grp Cap(c), veh/h	650	0	1127	379	0	1123	481	0	0	475	0	0
V/C Ratio(X)	0.05	0.00	0.65	0.07	0.00	0.32	0.72	0.00	0.00	0.51	0.00	0.00
Avail Cap(c_a), veh/h	650	0	1127	379	0	1123	596	0	0	588	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.2	0.0	7.5	12.9	0.0	5.6	21.7	0.0	0.0	20.3	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	2.9	0.4	0.0	0.7	3.1	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(85%),veh/ln	0.4	0.0	7.6	0.5	0.0	3.2	6.9	0.0	0.0	4.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.4	0.0	10.4	13.3	0.0	6.4	24.8	0.0	0.0	21.2	0.0	0.0
LnGrp LOS	A	A	B	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		763			383			344			241	
Approach Delay, s/veh		10.3			6.9			24.8			21.2	
Approach LOS		B			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		41.2		18.8		41.2		18.8				
Change Period (Y+Rc), s		4.6		* 4.7		4.6		* 4.7				
Max Green Setting (Gmax), s		32.4		* 18		32.4		* 18				
Max Q Clear Time (g_c+I1), s		18.7		13.1		17.2		9.2				
Green Ext Time (p_c), s		2.0		0.9		4.8		0.9				

Intersection Summary		
HCM 6th Ctrl Delay		13.9
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	9.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	592	54	17	276	29	51	35	68	12	30	25
Future Vol, veh/h	40	592	54	17	276	29	51	35	68	12	30	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	643	59	18	300	32	55	38	74	13	33	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	332	0	0	702	0	0	1141	1127	673	1167	1140	316
Stage 1	-	-	-	-	-	-	759	759	-	352	352	-
Stage 2	-	-	-	-	-	-	382	368	-	815	788	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1227	-	-	895	-	-	178	205	455	171	201	724
Stage 1	-	-	-	-	-	-	399	415	-	665	632	-
Stage 2	-	-	-	-	-	-	640	621	-	371	402	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1227	-	-	895	-	-	143	194	455	117	190	724
Mov Cap-2 Maneuver	-	-	-	-	-	-	143	194	-	117	190	-
Stage 1	-	-	-	-	-	-	385	400	-	642	619	-
Stage 2	-	-	-	-	-	-	572	609	-	271	388	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.5	57.1	28.2
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	224	1227	-	-	895	-	-	227
HCM Lane V/C Ratio	0.747	0.035	-	-	0.021	-	-	0.321
HCM Control Delay (s)	57.1	8	-	-	9.1	-	-	28.2
HCM Lane LOS	F	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	5.1	0.1	-	-	0.1	-	-	1.3

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	75	1760	30	11	1123	67	19	30	16	18	36	46
Future Vol, veh/h	75	1760	30	11	1123	67	19	30	16	18	36	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	82	1913	33	12	1221	73	21	33	17	20	39	50

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1294	0	0	1946	0	0	2626	3412	973	2228	3392	647
Stage 1	-	-	-	-	-	-	2094	2094	-	1282	1282	-
Stage 2	-	-	-	-	-	-	532	1318	-	946	2110	-
Critical Hdwy	5.34	-	-	5.34	-	-	6.44	6.54	7.14	6.44	6.54	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.34	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.74	5.54	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	3.82	4.02	3.92	3.82	4.02	3.92
Pot Cap-1 Maneuver	282	-	-	133	-	-	26	~ 7	216	46	~ 7	355
Stage 1	-	-	-	-	-	-	33	92	-	126	234	-
Stage 2	-	-	-	-	-	-	456	225	-	254	91	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	282	-	-	133	-	-	-	~ 5	216	-	~ 5	355
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 5	-	-	~ 5	-
Stage 1	-	-	-	-	-	-	23	65	-	89	213	-
Stage 2	-	-	-	-	-	-	291	205	-	83	65	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.3		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	282	-	-	133	-	-	-
HCM Lane V/C Ratio	-	0.289	-	-	0.09	-	-	-
HCM Control Delay (s)	-	22.9	-	-	34.7	-	-	-
HCM Lane LOS	-	C	-	-	D	-	-	-
HCM 95th %tile Q(veh)	-	1.2	-	-	0.3	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	621	6	2	346	4	4
Future Vol, veh/h	621	6	2	346	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	675	7	2	376	4	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	682	0	1059	679
Stage 1	-	-	-	-	679	-
Stage 2	-	-	-	-	380	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	911	-	249	452
Stage 1	-	-	-	-	504	-
Stage 2	-	-	-	-	691	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	911	-	249	452
Mov Cap-2 Maneuver	-	-	-	-	375	-
Stage 1	-	-	-	-	504	-
Stage 2	-	-	-	-	690	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	14
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	410	-	-	911	-
HCM Lane V/C Ratio	0.021	-	-	0.002	-
HCM Control Delay (s)	14	-	-	9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

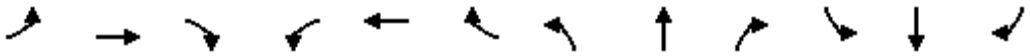
Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	19	7	90	95	5
Future Vol, veh/h	13	19	7	90	95	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	21	8	98	103	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	220	106	108	0	-	0
Stage 1	106	-	-	-	-	-
Stage 2	114	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	768	948	1483	-	-	-
Stage 1	918	-	-	-	-	-
Stage 2	911	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	763	948	1483	-	-	-
Mov Cap-2 Maneuver	763	-	-	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	911	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1483	-	863	-	-
HCM Lane V/C Ratio	0.005	-	0.04	-	-
HCM Control Delay (s)	7.4	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	483	45	36	333	41	68	254	38	25	263	63
Future Volume (veh/h)	91	483	45	36	333	41	68	254	38	25	263	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	99	525	49	39	362	45	74	276	41	27	286	68
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	554	955	89	431	925	115	134	349	48	83	392	89
Arrive On Green	0.57	0.57	0.57	0.57	0.57	0.57	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	978	1685	157	839	1631	203	224	1255	173	66	1409	320
Grp Volume(v), veh/h	99	0	574	39	0	407	391	0	0	381	0	0
Grp Sat Flow(s),veh/h/ln	978	0	1842	839	0	1834	1652	0	0	1795	0	0
Q Serve(g_s), s	3.8	0.0	11.8	1.8	0.0	7.4	1.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	11.2	0.0	11.8	13.6	0.0	7.4	13.3	0.0	0.0	11.5	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.11	0.19		0.10	0.07		0.18
Lane Grp Cap(c), veh/h	554	0	1044	431	0	1039	531	0	0	564	0	0
V/C Ratio(X)	0.18	0.00	0.55	0.09	0.00	0.39	0.74	0.00	0.00	0.68	0.00	0.00
Avail Cap(c_a), veh/h	554	0	1044	431	0	1039	680	0	0	725	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.3	0.0	8.2	12.5	0.0	7.2	20.2	0.0	0.0	19.8	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	2.1	0.4	0.0	1.1	3.1	0.0	0.0	1.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(85%),veh/ln	1.5	0.0	6.3	0.6	0.0	4.3	7.5	0.0	0.0	6.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.1	0.0	10.3	12.9	0.0	8.3	23.3	0.0	0.0	21.5	0.0	0.0
LnGrp LOS	B	A	B	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		673			446			391			381	
Approach Delay, s/veh		10.4			8.7			23.3			21.5	
Approach LOS		B			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		38.6		21.4		38.6		21.4				
Change Period (Y+Rc), s		4.6		* 4.7		4.6		* 4.7				
Max Green Setting (Gmax), s		28.4		* 22		28.4		* 22				
Max Q Clear Time (g_c+I1), s		15.6		15.3		13.8		13.5				
Green Ext Time (p_c), s		2.3		1.4		3.8		1.6				

Intersection Summary												
HCM 6th Ctrl Delay			14.9									
HCM 6th LOS			B									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	24.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	64	428	45	33	314	24	38	82	129	9	50	74
Future Vol, veh/h	64	428	45	33	314	24	38	82	129	9	50	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	70	465	49	36	341	26	41	89	140	10	54	80

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	367	0	0	514	0	0	1123	1069	490	1170	1080	354
Stage 1	-	-	-	-	-	-	630	630	-	426	426	-
Stage 2	-	-	-	-	-	-	493	439	-	744	654	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1192	-	-	1052	-	-	183	221	578	170	218	690
Stage 1	-	-	-	-	-	-	470	475	-	606	586	-
Stage 2	-	-	-	-	-	-	558	578	-	407	463	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1192	-	-	1052	-	-	119	201	578	79	198	690
Mov Cap-2 Maneuver	-	-	-	-	-	-	119	201	-	79	198	-
Stage 1	-	-	-	-	-	-	442	447	-	570	566	-
Stage 2	-	-	-	-	-	-	430	558	-	232	436	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.8	106.4	30.6
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	262	1192	-	-	1052	-	-	281
HCM Lane V/C Ratio	1.033	0.058	-	-	0.034	-	-	0.514
HCM Control Delay (s)	106.4	8.2	-	-	8.5	-	-	30.6
HCM Lane LOS	F	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	10.6	0.2	-	-	0.1	-	-	2.7

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	127	1565	38	30	1216	82	17	14	35	33	22	109
Future Vol, veh/h	127	1565	38	30	1216	82	17	14	35	33	22	109
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	138	1701	41	33	1322	89	18	15	38	36	24	118

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1411	0	0	1742	0	0	2605	3475	871	2397	3451	706
Stage 1	-	-	-	-	-	-	1998	1998	-	1433	1433	-
Stage 2	-	-	-	-	-	-	607	1477	-	964	2018	-
Critical Hdwy	5.34	-	-	5.34	-	-	6.44	6.54	7.14	6.44	6.54	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.34	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.74	5.54	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	3.82	4.02	3.92	3.82	4.02	3.92
Pot Cap-1 Maneuver	247	-	-	169	-	-	26	~ 6	253	36	~ 7	324
Stage 1	-	-	-	-	-	-	39	103	-	99	198	-
Stage 2	-	-	-	-	-	-	410	188	-	248	101	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	247	-	-	169	-	-	-	~ 2	253	-	~ 2	324
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 2	-	-	~ 2	-
Stage 1	-	-	-	-	-	-	~ 17	45	-	44	159	-
Stage 2	-	-	-	-	-	-	178	151	-	62	45	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.7	0.7		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	247	-	-	169	-	-	-
HCM Lane V/C Ratio	-	0.559	-	-	0.193	-	-	-
HCM Control Delay (s)	-	36.6	-	-	31.3	-	-	-
HCM Lane LOS	-	E	-	-	D	-	-	-
HCM 95th %tile Q(veh)	-	3.1	-	-	0.7	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	479	6	3	407	3	3
Future Vol, veh/h	479	6	3	407	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	521	7	3	442	3	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	528	0	973	525
Stage 1	-	-	-	-	525	-
Stage 2	-	-	-	-	448	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1039	-	280	552
Stage 1	-	-	-	-	593	-
Stage 2	-	-	-	-	644	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1039	-	279	552
Mov Cap-2 Maneuver	-	-	-	-	408	-
Stage 1	-	-	-	-	593	-
Stage 2	-	-	-	-	642	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	469	-	-	1039	-
HCM Lane V/C Ratio	0.014	-	-	0.003	-
HCM Control Delay (s)	12.8	-	-	8.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	13	18	80	113	15
Future Vol, veh/h	8	13	18	80	113	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	14	20	87	123	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	258	131	139	0	-	0
Stage 1	131	-	-	-	-	-
Stage 2	127	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	731	919	1445	-	-	-
Stage 1	895	-	-	-	-	-
Stage 2	899	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	720	919	1445	-	-	-
Mov Cap-2 Maneuver	720	-	-	-	-	-
Stage 1	882	-	-	-	-	-
Stage 2	899	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	1.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1445	-	831	-	-
HCM Lane V/C Ratio	0.014	-	0.027	-	-
HCM Control Delay (s)	7.5	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-