TRANSPORTATION ASSESSMENT STUDY
FOR THE
1201-1215 S. GRAND AVENUE & 410 W. 12TH STREET
MIXED-USE PROJECT

MAY 2020

Submitted by:

RAJU Associates, Inc.

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EXECUTIVE SUMMARY

A detailed transportation assessment study has been performed by Raju Associates, Inc. to assess the transportation impacts of the proposed mixed-use project (the Project) located in the Central City Community Plan Area (Council District 14) of the City of Los Angeles. The Project address is 1201-1215 S. Grand Avenue (APN 5139-022-008, 5139-022-009), and 410 W. 12th Street, Los Angeles, California 90015.

The Project consists of a high-rise residential mixed use development with up to 312 multifamily dwelling units and approximately 7,100 square feet of retail / high-turnover restaurant use. The existing site contains a three-story, approximately 44,769 square-foot commercial building and an adjacent surface parking lot that would be demolished. The Project is anticipated to be completed in the Year 2025.

The Project proposes to provide all vehicular access via two full-access driveways along an adjacent north-south alley located mid-block between S. Hope Street and S. Grand Avenue, on the west side of the Project site. Pico Boulevard and 12th Street would provide access to the Project driveways via the adjacent alley.

The Project has been designed to be consistent with The City of Los Angeles adopted programs, plans, ordinances and policies that establish the transportation planning framework for all travel modes including the Transportation Element of the City's General Plan, the "Mobility Plan 2035," Vision Zero Los Angeles, Downtown Los Angeles Design Guide and Citywide Design Guidelines.

This transportation assessment study has been prepared consistent with the current City of Los Angeles *Transportation Assessment Guidelines* (July 2019) for both CEQA and non-CEQA evaluations as applicable.

The CEQA evaluation consists of analysis of transportation impacts for the following relevant City adopted thresholds for development projects:

- Threshold T-1 – Conflicting with Plans, Programs, Ordinances or Policies
- Threshold T-2.1 - Causing Substantial Vehicle Miles Traveled (VMT), and
- Threshold T-3 – Substantially Increasing Hazards Due to a Geometric Design Feature or Incompatible Use.

The non-CEQA Transportation Analysis consists of Pedestrian, Bicycle and Transit Access Assessment, Project Access, Safety and Circulation Evaluation and Project Construction Assessment.

The following executive summary highlighting the key findings of this study are presented below.

PROJECT DESCRIPTION

The Project consists of a high-rise residential mixed-use development with up to 312 multifamily dwelling units and approximately 7,100 square feet of retail / high-turnover restaurant use. The Project would provide a total of 352 vehicle parking spaces and 174 bicycle parking spaces (156 long-term spaces and 18 short-term spaces). The site contains an existing three-story, approximately 44,769 square-foot commercial building and an adjacent surface parking lot that would be demolished. About 8,000 square feet of office use is existing on-site. The Project is anticipated to be completed in the Year 2025.

- Currently, vehicular access to the Project site is provided by a driveway located along Grand Avenue and a driveway located along an adjacent alley. The Project proposes to provide all vehicular access via two full-access driveways along an adjacent north-south alley mid-block between S. Hope Street and S. Grand Avenue, on the west side of the Project site. Pico Boulevard and 12th Street would provide access to the Project driveways via the adjacent alley.

- The Project would generate a net increase of 1,309 daily trips, of which a net total of approximately 102 trips would occur during the morning peak hour and 119 trips during the evening peak hour.

EXISTING CONDITIONS

- A total of four intersections were evaluated within the study area for this Project. The study area includes key intersections within a distance of 1,320-foot radius from the Project site. The study area is generally bounded by 11th Street on the north, 15th Street on the south, Figueroa Street on the west and Broadway on the east.

- Currently, all four study intersection locations are operating at Levels of Service (LOS) C or better during both the morning and evening peak hours in Existing (2020) conditions.

CEQA ANALYSIS OF TRANSPORTATION IMPACTS

- Threshold T-1 – Conflicting with Plans, Programs, Ordinances or Policies - This threshold test is conducted to assess whether a project would conflict with an adopted program, policy, plan, or ordinance that is adopted to protect the environment. In general, transportation policies or standards adopted to protect the environment are those that support multimodal transportation options and a reduction in VMT.
    - Based on the responses to the questions (from *Table 2.1-2: Questions to Determine Project Applicability to Plans, Policies and Programs*) and a review of relevant policies and programs corresponding to the questions to assess whether the proposed Project precludes the City's implementation of any adopted policy and/or program, it was observed that the Project generally conforms with the City's development policies and standards. The Project does not conflict with a program, plan, ordinance, or policy addressing the circulation system including transit, roadways, bicycle, and pedestrian facilities. Therefore, the Project does not cause a significant impact relative to Threshold T-1.
    - An examination of cumulative assessment of the Project and related projects in the vicinity was conducted. It was observed that there would not be a significant cumulative impact relative to this Threshold, due to the Project and related projects.
- Threshold T-2.1 – Causing Substantial Vehicle Miles Traveled (VMT) - For land use projects, the intent of this threshold is to assess whether a land use project or plan causes substantial vehicle miles traveled.
    - Utilizing the City's VMT Calculator Tool (version 1.2), the VMT analysis was prepared for the Project. The Project would result in a daily VMT of 7,602 and a Household VMT per capita of 5.6. The Project's Household VMT per capita (5.6) is less than the impact threshold of 6.0. Therefore, the Project does not cause a significant project impact relative to Threshold T-2.1.
    - Per cumulative impact methodology, projects that do not demonstrate a project impact by applying an efficiency-based impact threshold (i.e. VMT per capita or VMT per employee) in the project impact analysis, do not cause cumulative VMT impact since a less than significant project impact conclusion is sufficient in demonstrating that there would be no cumulative VMT impact. Projects that fall under the City's efficiency-based impact thresholds are already shown to align with the long-term VMT and greenhouse gas reduction goals of SCAG's RTP/SCS. Since the Project does not cause a significant impact using the efficiency-based impact threshold (Household VMT per capita), the Project would not cause a cumulative significant impact relative to Threshold T-2.1.

- Threshold T-3 – Substantially Increasing Hazards Due to a Geometric Design Feature or Incompatible Use - Impacts regarding the potential increase of hazards due to a geometric design feature generally relate to the design of access points to and from the project site, and may include safety, operational, or capacity impacts.
    - Based on review of the preliminary site plan, Project description and analysis of the impact criteria factors, it was observed that the Project would not substantially increase hazards due to a geometric design feature or incompatible uses. Therefore, the Project does not cause a significant impact relative to Threshold T-3.
    - A review and examination of the site plans of the cumulative projects including those of the proposed Project reveals that the combined effects of these related projects and the proposed Project would not substantially increase hazards due to a geometric design feature or incompatible uses. Therefore, the Project along with the related projects would not cause a significant cumulative impact for Threshold T-3.

Summarizing, the Project would not cause significant impacts relative to any of the City established CEQA thresholds including the following: Threshold T-1 – Conflicting with Plans, Programs, Ordinances or Policies, Threshold T-2.1 - Causing Substantial Vehicle Miles Traveled (VMT) and Threshold T-3 – Substantially Increasing Hazards Due to a Geometric Design Feature or Incompatible Use. Therefore, no project-specific mitigation measures would be required.

NON-CEQA TRANSPORTATION ANALYSIS

- Pedestrian, Bicycle and Transit Access Assessment - This section includes an evaluation of the pedestrian, bicycle, and transit facilities and provides an assessment to determine the Project's potential effect on these transportation facilities in the vicinity of the proposed Project. Per the City's *Transportation Assessment Guidelines*, the effects could be physical (through removal, modification, or degradation of facilities) or demand-based (by adding pedestrian or bicycle demand to inadequate facilities).
    - Removal or Degradation of Facilities. Based on a review of the Project site plan in conjunction with an assessment of the existing pedestrian, bicycle, and transit facilities discussed above, the Project does not propose removal of facilities nor would the Project contribute to the degradation of facilities. Therefore, no recommended actions are required by the Project.
    - Intensification of Use. The Project would not increase the need to cross a street at unmarked pedestrian crossings or unsignalized or uncontrolled intersections where a crossing is not available without significant rerouting. Also, the Project would not result in new pedestrian demand between Project site entries/exits and major destinations or transit stops expected to serve the development where there are

missing pedestrian facilities or substandard pedestrian facilities. Therefore, no recommended actions are required by the Project.

- Project Access, Safety and Circulation Evaluation - This section includes an evaluation of the Project's access and circulation constraints related to the provision of access to and from the Project site based on the screening criteria, evaluation criteria and methodology established in the City's *Transportation Assessment Guidelines*.

  - Operational Evaluation. The four study intersections would operate at LOS C or better during both the morning and evening peak hours under existing conditions without and with Project. Under Cumulative (2025) conditions without and with the Project, the four study intersections are projected to operate at LOS D or better during both the morning and evening peak hours. The queue analysis during AM and PM peak hours indicates that the study intersections would not result in spill over from turn pockets into through lanes. Also, the Project's weekday AM and PM peak hour traffic volumes would have a nominal effect of vehicle queuing at all of the study intersections. Additionally, the Project driveways are located along the alley on the western frontage of the Project site and not along an Avenue or Boulevard and would not contribute to unacceptable queuing on an Avenue or Boulevard at the Project's driveways. Therefore, no recommended actions are required by the Project.

  - Passenger Loading Evaluation. Based on review of the Project site plan, all passenger loading demand can be accommodated on-site. No further evaluation is needed, and no additional constraints are expected. Therefore, no recommended actions are required by the Project.

- Project Construction – This section addresses activities associated with project construction. This project construction assessment is based on the screening criteria, evaluation criteria and methodology established in the City's *Transportation Assessment Guidelines*.

  - The Project construction assessment identified no potential bicycle or transit constraints during construction. However, temporary loss of on-street parking along the northern (12th Street) and eastern (Grand Avenue) Project frontages are anticipated during construction. Sidewalks along these frontages would also be temporarily closed, although canopied pedestrian walkways would be provided to maintain pedestrian circulation. In order to address these construction effects, potential corrective conditions could include:

    - Preparation of a traffic management plan
    - Consult LADOT's Parking Meters Division regarding revenue recovery costs for the removal of parking meter spaces
    - Coordinate access with adjacent property owners and tenants.

I. INTRODUCTION

This report documents the assumptions, methodologies and findings of a transportation assessment study conducted by Raju Associates, Inc., to evaluate the potential transportation impacts of the proposed mixed-use project located in the City of Los Angeles' Central City Community Plan Area (Council District 14) at 1201-1215 S. Grand Avenue (APN 5139-022-008, 5139-022-009) and 410 W. 12th Street, Los Angeles, California 90015.

PROJECT DESCRIPTION

The Project is located on the south-west corner of the intersection of Grand Avenue and 12th Street. Figure 1 illustrates the location of the Project in relation to the surrounding street system.

The proposed Project consists of a high-rise residential mixed-use development with up to 312 multifamily dwelling units and approximately 7,100 square feet of retail / high-turnover restaurant use. The Project would provide a total of 352 vehicle parking spaces and 174 bicycle parking spaces (156 long-term spaces and 18 short-term spaces). The existing site contains a three-story, approximately 44,769 square-foot commercial building and an adjacent surface parking lot that would be demolished. Approximately 8,000 square feet of office use is existing on-site. The Project is anticipated to be completed in the Year 2025. The Project site plan is illustrated in Figure 2.

Although the Project is not located within the City's High Injury Network (HIN), the Project has taken measures to align with Vision Zero policies. The Project plans to provide 18 short-term and 156 long-term bicycle parking spaces, thereby encouraging residents and employees of the Project to travel via bicycle and creating a bicycle-friendly environment surrounding the Project. Additionally, the Project driveways are located along a north-south alley bordering the western edge of the Project site, away from major pedestrian thoroughfares, enhancing walkability and connectivity. Further, the Project will feature ground-floor street-facing commercial uses proximate to adjacent residential and commercial uses, enriching the existing pedestrian experience and activating the block as a pedestrian-safe environment.

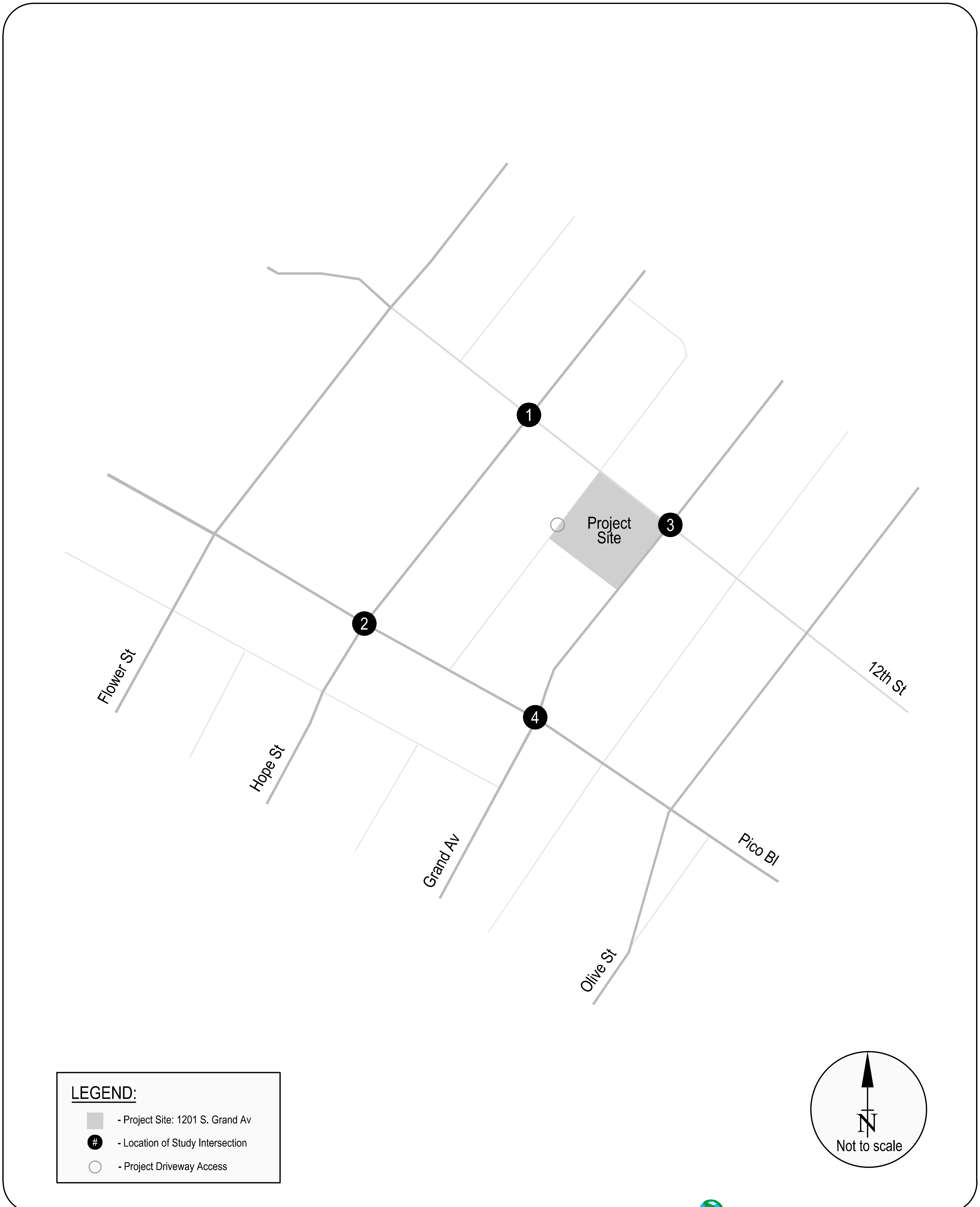

FIGURE 1
LOCATION OF PROJECT SITE AND NON-CEQA STUDY INTERSECTIONS

RAJU Associates, Inc.

SOURCE: MVE+PARTNERS

FIGURE 2
PROJECT SITE PLAN - GROUND FLOOR

RAJU Associates, Inc.

The Project has been designed to be consistent with the City of Los Angeles adopted programs, plans, ordinances and policies that establish the transportation planning framework for all travel modes including the Transportation Element of the City's General Plan, the "Mobility Plan 2035," Vision Zero Los Angeles, Downtown Los Angeles (DTLA) Design Guide, and Citywide Design Guidelines. The Project will not impede the Mobility Plan 2035 improvements which have already been realized, and the Project will support the implementation of future improvements. The Project site has been designed with consideration of the Mobility Plan 2035 specifications for Grand Avenue and 12th Street.

PROJECT VEHICULAR ACCESS AND CIRCULATION

Currently, vehicular access to the Project site is provided by a driveway located along Grand Avenue and a driveway located along an adjacent alley. The Project proposes to provide all vehicular access via two full-access driveways along an adjacent north-south alley mid-block between S. Hope Street and S. Grand Avenue, on the west side of the Project site. Pico Boulevard and 12th Street would provide access to the Project driveways via the adjacent alley. Consistent with the City of Los Angeles Citywide Design Guidelines, October 24, 2019, the Project driveways for a corner lot property, are located as far away from the corner as possible and are located towards the side of the building, away from major pedestrian thoroughfares, enhancing walkability and pedestrian experience.

PROJECT PEDESTRIAN ACCESS AND CIRCULATION

Pedestrian access to the Project site would be obtained from Grand Avenue and 12th Street. Grand Avenue currently provides a 17-foot sidewalk (designated width per City of Los Angeles' *Mobility Plan 2035)*. As shown in Figure 2, the Project would provide an easement of 3 feet from the southerly property line to approximately 120 feet north, and increased easement north of that location along the building frontage. This would allow for a 20-foot wide sidewalk along the Project's Grand Avenue frontage. Short-term bicycle racks would be provided adjacent to the curb along the Project's Grand Avenue frontage. The Project would provide 15 feet by 15 feet corner dedication, per Los Angeles BOE requirements.

12th Street currently provides a curb-to-curb roadway width of 40 feet and a 10-foot sidewalk along the Project's frontage. Per the City of Los Angeles' *Mobility Plan 2035*, a designated right-of-way width of 64 feet (half ROW of 32 feet) is identified for 12th Street. The Project would provide a 2-foot dedication along its 12th Street frontage. The sidewalk along the Project's 12th Street frontage would be widened to the required dimension of 12 feet. As shown in Figure 2, the Project would provide a 5-foot parkway/7-foot sidewalk along its 12th Street frontage.

STUDY SCOPE

The scope of work for this study was developed based on the latest City of Los Angeles *Transportation Assessment Guidelines*, July 2019, in conjunction with LADOT staff. The base assumptions, technical methodologies and geographic coverage of the study were all identified as part of the study approach. The study is directed at both the CEQA analysis of transportation impacts and non-CEQA transportation analysis of the proposed Project. A brief description of the required analyses is provided below.

CEQA Analysis of Transportation Impacts

- Threshold T-1 – Conflicting with Plans, Programs, Ordinances or Policies - The threshold test is to assess whether a project would conflict with an adopted program, policy, plan, or ordinance that is adopted to protect the environment. In general, transportation policies or standards adopted to protect the environment are those that support multimodal transportation options and a reduction in VMT. Conversely, a project would not be shown to result in an impact merely based on whether a project would not implement a particular program, plan, policy, or ordinance. Many of these programs must be implemented by the City itself over time, and over a broad area, and it is the intention of this threshold test to ensure that proposed development projects and plans do not preclude the City from implementing adopted programs, plans and policies.

- Threshold T-2.1 – Causing Substantial Vehicle Miles Traveled (VMT) - For land use projects, the intent of this threshold is to assess whether a land use project or plan causes substantial vehicle miles traveled.

- Threshold T-3 – Substantially Increasing Hazards Due to a Geometric Design Feature or Incompatible Use - Impacts regarding the potential increase of hazards due to a geometric design feature generally relate to the design of access points to and from the project site, and may include safety, operational, or capacity impacts. Impacts can be related to vehicle/vehicle, vehicle/bicycle, or vehicle/pedestrian conflicts as well as to operational delays caused by vehicles slowing and/or queuing to access a project site. These conflicts may be created by the driveway configuration or through the placement of project driveway(s) in areas of inadequate visibility, adjacent to bicycle or pedestrian facilities, or too close to busy or congested intersections. Evaluation of access impacts require details relative to project land use, size, design, location of access points, etc. These impacts are typically evaluated for permanent conditions after project completion.

Non-CEQA Transportation Analysis

- Pedestrian, Bicycle and Transit Access Assessment - The pedestrian, bicycle, and transit facilities assessment is intended to determine a project's potential effect on pedestrian, bicycle, and transit facilities in the vicinity of the proposed project. The deficiencies could be physical (through removal, modification, or degradation of facilities) or demand-based (by adding pedestrian or bicycle demand to inadequate facilities).

- Project Access, Safety and Circulation Evaluation - Project access and circulation constraints relate to the provision of access to and from the project site, and may include safety, operational, or capacity constraints. Constraints can be related to vehicular/vehicular, vehicular/bicycle, or vehicular/pedestrian constraints as well as to operational delays.

  - For this Non-CEQA transportation analysis, four locations were chosen as study intersections. All four study intersections are controlled by traffic signals (see Figure 1) and include the following locations:

    1. Hope Street and 12th Street
    2. Hope Street and Pico Boulevard
    3. Grand Avenue and 12th Street
    4. Grand Avenue and Pico Boulevard

- Project Construction Assessment - This section addresses activities associated with project construction and major in-street construction of infrastructure projects.

A detailed Memorandum of Understanding (MOU) was prepared working closely with the City of Los Angeles Department of Transportation. A copy of the City-approved MOU is attached in Appendix A of this report. This transportation assessment report has been prepared in accordance with the latest LADOT's *Transportation Assessment Guidelines*, July 2019.

ORGANIZATION OF REPORT

An executive summary presenting key details of the study is provided at the beginning of this report. The rest of the report is divided into six chapters. Chapter I presents an introduction including the Project description and provides details of the various elements of the study. Chapter II describes the existing conditions/setting including the circulation system, traffic volumes, traffic conditions, pedestrian network, bicycle network and transit system within the study area. Chapter III presents the CEQA Analysis of Transportation Impacts due to the Project. Chapter IV describes the development of the Project's traffic projections including Existing with Project, and Future Year 2025 conditions with and without Project traffic projections used for non-CEQA evaluation. The results of the Non-CEQA Transportation Analyses are provided in Chapter V. A summary of the analysis and study conclusions is included in Chapter VI. Appendices to this report include details of the technical analyses.

II. EXISTING CONDITIONS

A comprehensive data collection effort was undertaken to develop a detailed description of existing conditions within the study area. The assessment of conditions relevant to this study includes an inventory of the street system, pedestrian network, bicycle network and transit system; and vehicular traffic volumes and operating conditions at key intersections. A detailed description of these elements is presented in this chapter.

STUDY AREA

The Project is located at 1201-1215 S. Grand Avenue and 410 W. 12th Street, Los Angeles, California 90015, as shown in Figure 1. It is located on the south-west corner of the intersection of Grand Avenue and 12th Street.

Per City of Los Angeles' *Transportation Assessment Guidelines*, the study area should include key facilities within a one-quarter mile (1,320 feet) radius of the Project site. Therefore, the Study Area was determined to be generally bounded by 11th Street on the north, 15th Street on the south, Figueroa Street on the west, and Broadway on the east.

EXISTING STREET SYSTEM

The existing street system within the study area consists of a regional roadway system including major and secondary arterials and a local street system including collectors and local streets. A description of the regional and local access and circulation offered by the various roadways follows.

Regional access is provided by the Harbor Freeway (I-110/SR-110) which is approximately half a mile west of the Project site, and the Santa Monica Freeway (I-10) which is approximately 0.4 miles south of the Project site. The major and other arterial streets that provide access to the study area include Figueroa Street, Flower Street, Hope Street, Grand Avenue, Olive Street, Hill Street, Broadway, 12th Street (between Figueroa Street and Flower Street) and Pico Boulevard. The local streets providing access and circulation possibilities include 11th Street and 12th Street (east of Flower Street).

Modal priorities that are provided in the City of Los Angeles *Mobility Plan 2035,* include categorization of roadway facilities such that emphasis on specific modes of travel along these facilities are defined and prioritized. Generalized definitions of these modal priorities are provided below.

- Pedestrian Enhanced Districts are an analysis of a snapshot in time of areas where pedestrian improvements are prioritized relative to other modes. These areas may be located near schools, transit stations, areas of high pedestrian activity, areas with high collision frequency, or other placemaking opportunity areas.

- Transit Enhanced Network: The proposed Transit Enhanced Network is intended to improve existing and future bus service on arterial streets by prioritizing improvements for transit riders. Enhancements may range from streetscape improvements to make walking safer and easier, to transit shelters, or bus lanes.

- Bicycle Enhanced Network: The Bicycle Enhanced Network includes streets that are identified to receive treatments that prioritize bicyclists. This network is comprised of facilities including protected bicycle lanes and bicycle paths to provide bikeways for a variety of users. The low-stress network provides a higher level of comfort than just a striped bicycle lane.

- Neighborhood Enhanced Network: The Neighborhood Enhanced Network is a selection of streets that provide comfortable and safe routes for localized travel of slower-moving modes such as walking, bicycling, or other slow speed motorized means of travel. This network complements the Pedestrian Enhanced Districts and the Bicycle Enhanced Network by identifying non-arterial streets important to the movement of people who walk and bike.

- Vehicle Enhanced Network: The proposed Vehicle Enhanced Network consists of enhancements, on a select group of streets, to prioritize the efficient movement of motor vehicles. The Vehicle Enhanced Network identifies 79 miles of arterials, important to vehicular movement, that carry between 30,000 and 80,000 vehicles per day, traverse 10 miles or more through the City, and provide access to freeways and critical facilities.

- Goods Movement: Streets or truck routes that are defined to facilitate the transport of for-sale products from their manufacturing origin to their final destination where they will be sold. Moving goods can involve many different types of transport such as airplanes, cargo ships, trains, and trucks.

Figure 3 illustrates a street map of the study area including street names and modal priorities as described in the Mobility Plan. As shown in Figure 3, several streets within the study area are included in the Neighborhood Enhanced Network, Pedestrian Enhanced District and Transit Enhanced Network. However, none of the streets within the study area are located in the Vehicle Enhanced Network. The existing lane configurations of the analyzed intersections are included in Appendix B.

Brief descriptions of the roadway facilities serving the study area including number of lanes, speed limits, parking availability, functional classes and modal priorities are presented in the following section.

- Harbor (I-110 / SR-110) Freeway – The Harbor Freeway is a north-south freeway that connects San Pedro with Downtown Los Angeles and the City of Pasadena. The Harbor Freeway begins as Interstate 110 (I-110) in San Pedro to the south, becoming SR-110 as it passes through Downtown Los Angeles and continues northeasterly as the Arroyo Seco Parkway into the City of Pasadena. In the vicinity of the study area, this freeway generally provides five lanes in the northbound direction and six lanes in the southbound direction. Freeway ramps are located at 8th Street, James M Wood Boulevard, Chick Hearn Court, L.A. Live Way, 18th Street, and Washington Boulevard in the vicinity of the study area. This freeway provides access to the regional interstate system. This Freeway is identified as a Goods Movements – Truck Route.

- Santa Monica (I-10) Freeway – The I-10 Freeway is an east-west freeway that transverses the Southern California region from its western terminus at Pacific Coast Highway in the City of Santa Monica into San Bernardino County and points east. The I-10 freeway travels along the southern edge of Downtown Los Angeles, with an interchange with I-110 to the south and SR-110 to the north. In the vicinity of the study area, this freeway generally provides five lanes in both eastbound and westbound directions. Ramps are located at L.A. Live Way, Flower Street, 18th Street, and 17th Street in the vicinity of the study area. This freeway provides access to the regional interstate system. This Freeway is identified as a Goods Movements – Truck Route.

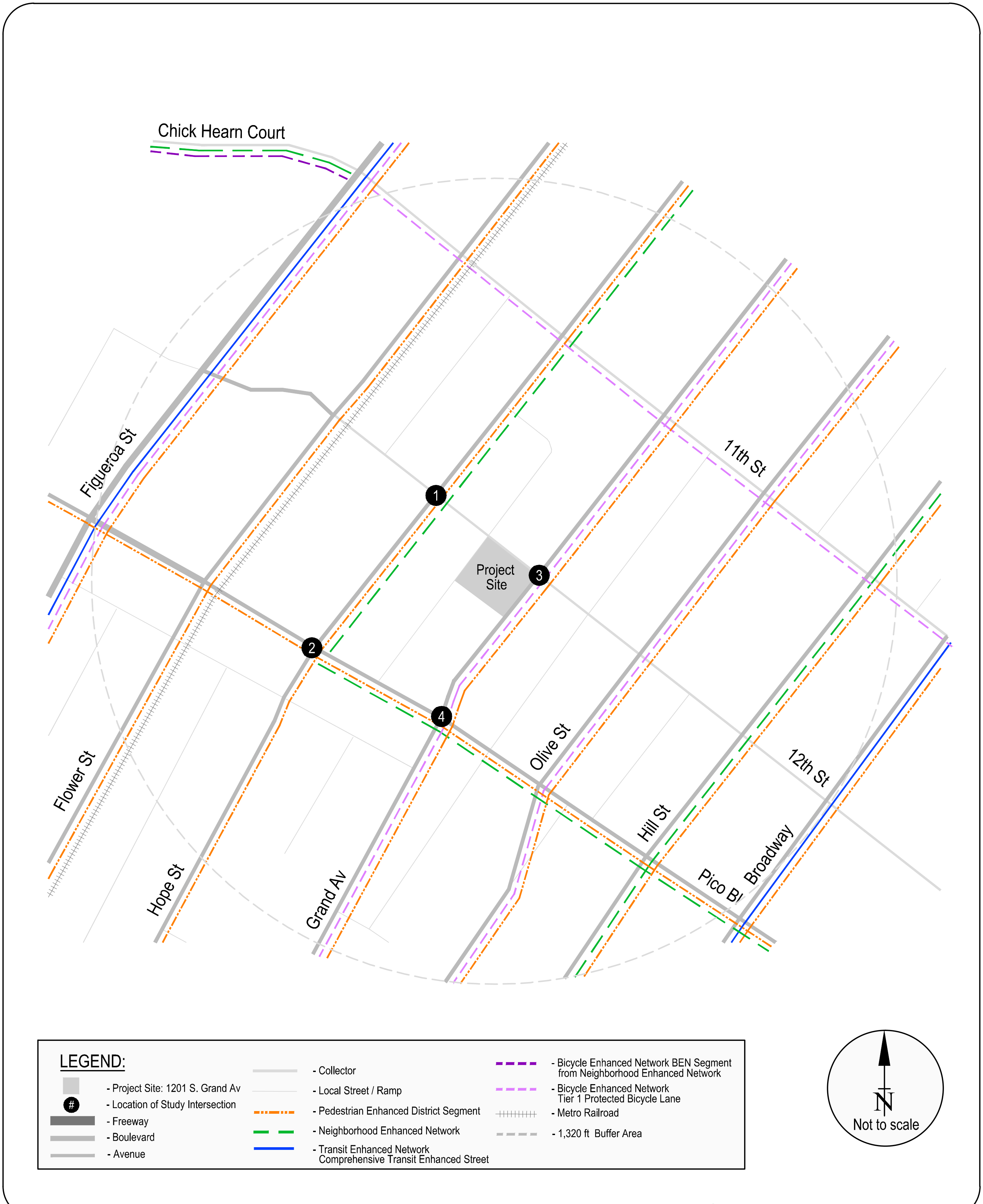

FIGURE 3
PROJECT STUDY AREA

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- Figueroa Street – Figueroa Street is classified as a Modified Boulevard II arterial roadway (between I-10 and Olympic Boulevard) and runs in a north-south direction. This roadway generally provides four travel lanes, two lanes in each direction south of Kobe Bryant Way/12th Street; and provides three lanes, two lanes in northbound direction and one lane in southbound direction between Kobe Bryant Way/12th Street and Olympic Boulevard. Bike lanes are generally provided on both sides of the street south of Olympic Boulevard. On-street parking is not allowed on Figueroa Street south of Olympic Boulevard. The posted speed limit is 30 miles per hour within the study area. Figueroa Street is designated as a Pedestrian Segment within the Pedestrian Enhanced District and is identified as a Comprehensive Transit Enhanced Street within the Transit Enhanced Network. Figueroa Street is identified as a Tier 1 Protected Bicycle Lane facility within the Bicycle Enhanced Network.

- Flower Street - Flower Street is classified as a Modified Avenue I arterial roadway between I-10 and 11th Street. It runs in a north-south direction and provides one-way southbound circulation. Within the study area, Flower Street generally provides three travel lanes south of Olympic Boulevard. Four-hour metered on-street parking is available on the east side of the street between Olympic Boulevard and 11th Street. One-hour unmetered on-street parking with afternoon peak hour restrictions is generally available on the west side of the street south of Pico Boulevard. The posted speed limit is 35 miles per hour. Flower Street is designated as a Pedestrian Segment within the Pedestrian Enhanced District. Metro Expo Line and Blue Line travel along Flower Street and have a station at Flower Street and Pico Boulevard.

- Hope Street – Hope Street is classified as a Collector roadway south of Venice Boulevard and as an Avenue II roadway between Venice Boulevard and 5th Street. It runs in a north-south direction. Between Olympic Boulevard and Pico Boulevard, Hope Street provides three lanes, two lanes in northbound direction and one lane in southbound direction. South of Pico Boulevard, one lane is provided for both directions on Hope Street. Two-hour and 4-hour metered on-street parking is generally available on Hope Street south of Olympic Boulevard within the study area. The prima facie speed limit is 25 miles per hour. Hope Street is designated as a Pedestrian Segment within the Pedestrian Enhanced District. North of Pico Boulevard, Hope Street is included in the Neighborhood Enhanced Network.

- Grand Avenue – Grand Avenue defines the eastern frontage of the Project site and is classified as a Modified Avenue II arterial roadway that transverses in the southbound direction. Grand Avenue is a one-way street providing three southbound lanes. A bike lane is generally provided on the west side of the street. Four-hour metered on-street parking is generally available on both sides of the street within the Study Area. The posted speed limit is 35 miles per hour. Grand Avenue is designated as a Pedestrian Segment within the Pedestrian Enhanced District. Grand Avenue is identified as a Tier 1 Protected Bicycle Lane facility within the Bicycle Enhanced Network.

- Olive Street – Olive Street is classified as a Modified Avenue II arterial roadway that runs in the northbound direction. Olive Street is a one-way street providing three northbound lanes. Bike lanes are generally provided on the east side of the street. Four-hour metered on-street parking is generally available on both sides of the street within the study area. The posted speed limit is 30 miles per hour. Olive Street is designated as a Pedestrian Segment within the Pedestrian Enhanced District. Olive Street is identified as a Tier 1 Protected Bicycle Lane facility within the Bicycle Enhanced Network.

- Hill Street – Hill Street is classified as a Modified Avenue II arterial roadway that runs in a north-south direction. This roadway provides four travel lanes, two lanes in each direction on commute peak hours. Four-hour metered on-street parking is generally available on both sides of the street. The posted speed limit is 30 miles per hour within the study area. Hill Street is designated as a Pedestrian Segment within the Pedestrian Enhanced District and is included in the Neighborhood Enhanced Network.

- Broadway – Broadway is classified as a Modified Avenue II arterial roadway that runs in a north-south direction. Within the study area, Broadway generally provides four travel lanes, two lanes in each direction. Bike route and sharrow roadway markings are provided on both sides of the street north of 11th Street. Four-hour metered on-street parking is generally available on both sides of the street south of Pico Boulevard. North of Pico Boulevard, four-hour metered on-street parking is only available on east side of the street. The posted speed limit is 35 miles per hour on Broadway south of Pico Boulevard, and 25 miles per hour north of Pico Boulevard. Broadway is designated as a Pedestrian Segment within the Pedestrian Enhanced District and is identified as a Comprehensive Transit Enhanced Street within the Transit Enhanced Network.

- Pico Boulevard – Pico Boulevard is classified as a Modified Boulevard II arterial roadway between Figueroa Street and Flower Street, as an Avenue I arterial roadway between Flower Street and Broadway. It traverses in an east-west direction. Between Figueroa Street and Broadway, Pico Boulevard provides four travel lanes, two lanes in each direction during peak commute hours. Four-hour or 2-hour metered on-street parking is generally available on both sides of the street east of Hope Street, with morning and afternoon peak hour restrictions. The posted speed limit is 30 miles per hour on Pico Boulevard west of Broadway. Within the study area, Pico Boulevard is designated as a Pedestrian Segment within the Pedestrian Enhanced District.

- 11th Street – 11th Street is classified as a Modified Collector roadway and traverses in an east-west direction. 11th Street provides two travel lanes, one in each direction between Figueroa Street and Flower Street. East of Flower Street, 11th Street provides one-way westbound circulation with one travel lane. Bike lanes are provided on the north side of the street along 11th Street. Two-hour metered on-street parking is available on the south side of 11th Street east of Flower Street. The prima facie speed limit is 25 miles per hour. 11th Street is identified as a Tier 1 Protected Bicycle Lane facility within the Bicycle Enhanced Network.

- 12th Street – 12th Street defines the northern frontage of the Project Site and is classified as an Avenue II arterial roadway between Figueroa Street and Flower Street and as a Modified Collector roadway between Flower Street and San Pedro Street. It traverses in an east-west direction. Two eastbound travel lanes are generally provided along 12th

Street. Two-hour and 4-hour metered on-street parking is generally available on both sides of the street east of Hope Street within the Study Area. The prima facie speed limit is 25 miles per hour. 12th Street is not included in any of the modal priority networks.

EXISTING PEDESTRIAN CONDITIONS

The pedestrian circulation system includes crosswalks, intersection traffic control, pedestrian signals, and sidewalks available to serve pedestrians. Figure 4 illustrates the pedestrian facilities within the study area defined by a distance of 1,320 feet radius of the Project site. Table 1 provides a summary of the sidewalk and sidewalk widths within the study area.

Grand Avenue and 12th Street offer pedestrian access and circulation possibilities to the Project site. Sidewalks are available on both sides of 12th Street and Grand Avenue, adjacent to and in the vicinity of the Project site. The sidewalk along 12th Street adjacent to the Project site is approximately 10 feet wide. The sidewalk along Grand Avenue adjacent to the Project site is approximately 17 feet wide. Pedestrian crosswalks are available at intersections adjacent to the Project site. As noted in the Project Description, the Project proposes to dedicate 2 feet along its 12th Street frontage in order to provide a standard 12-foot wide sidewalk and an easement of 3 feet along its Grand Avenue frontage, providing a 20-foot wide sidewalk.

Sidewalks are generally provided along all streets within the study area. However, certain segments of streets within the study area have sidewalks that are currently closed due to construction. Figure 4 shows these segments of streets where sidewalks are currently not available due to existing construction within the study area. They include the following:

- <u>Flower Street</u>: Sidewalks are not currently available on the west side of Flower Street between 11th Street and 12th Street, due to construction activities associated with the Oceanwide Plaza project.

- <u>12th Street</u>: Sidewalks are not currently available on the north side of 12th Street between Figueroa Street and Flower Street, due to construction activities associated with the Oceanwide Plaza project.

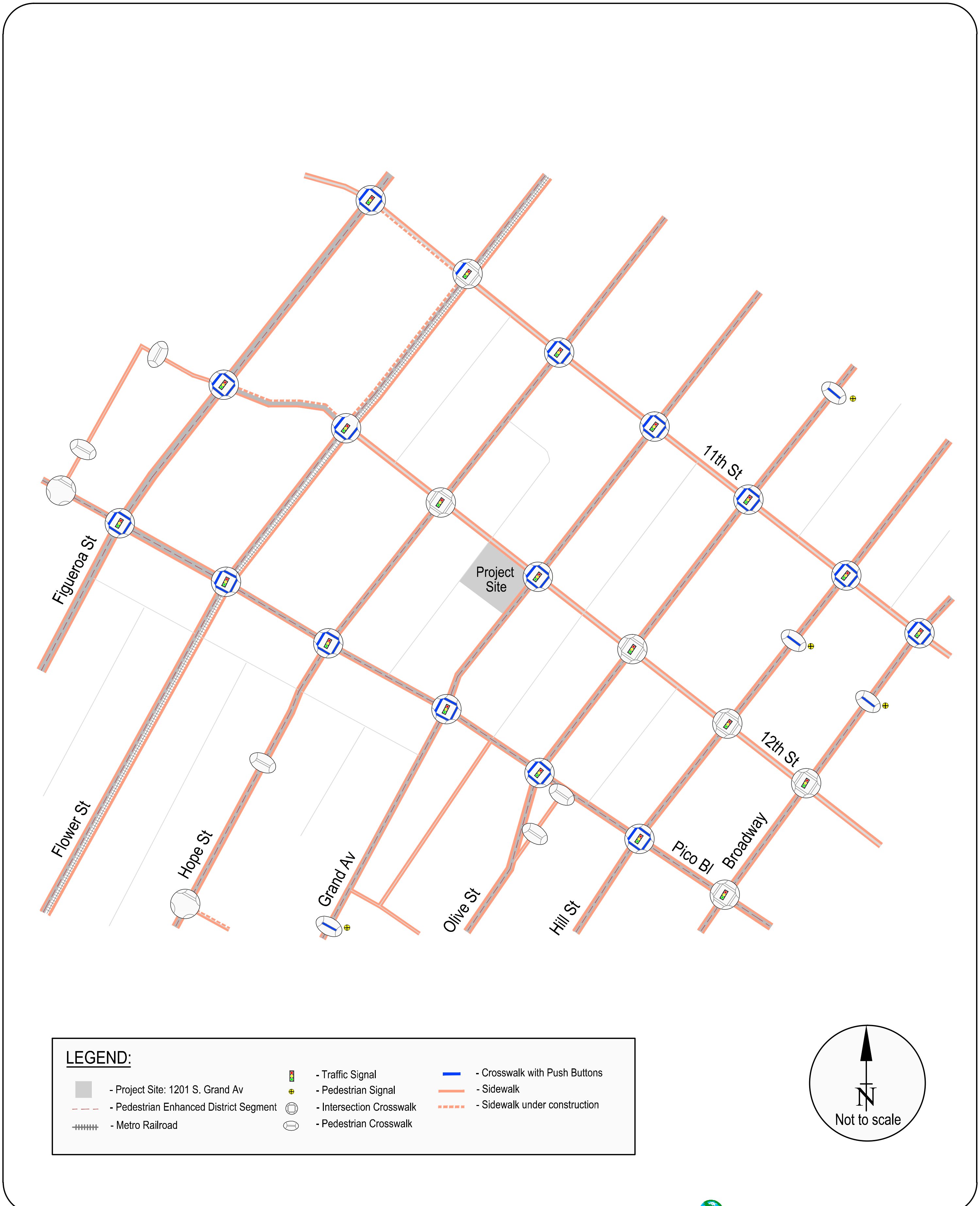

FIGURE 4
INVENTORY OF EXISTING PEDESTRIAN FACILITIES

RAJU Associates, Inc.

TABLE 1
SIDEWALK INVENTORY AND CONDITIONS WITHIN THE STUDY AREA

Street	Segment To	Segment From	Street Classification	Right-of-Way Width Designated [1]	Roadway Width Designated [1]	Side of Street	Sidewalk Available	Sidewalk Width [2]	Condition [3] Adequate or Substandard
Figueroa Street	11th Street	12th Street	Modified Boulevard II	116'	86'	West	Yes	28'	Adequate
						East	Yes	[4]	Currently under construction - Temp. sidewalk available
	12th Street	Pico Boulevard	Modified Boulevard II	116'	86'	West	Yes	18'	Adequate
						East	Yes	[5]	Adequate
Flower Street	Olympic Boulevard	11th Street	Modified Avenue II	90'	66'	West	Yes	22'	Adequate
						East	Yes	12'	Adequate
	11th Street	12th Street	Modified Avenue I	105'	75'	West	Yes	[4]	Currently under construction - Sidewalk not available
						East	Yes	10'	Adequate
	12th Street	Pico Boulevard	Modified Avenue I	105'	75'	West	Yes	[5]	Adequate
						East	Yes	10'	Adequate
	Pico Boulevard	Venice Boulevard	Modified Avenue I	105'	75'	West	Yes	10'	Adequate
						East	Yes	10'	Adequate
Hope Street	Olympic Boulevard	11th Street	Avenue II	86'	56'	West	Yes	12'	Adequate
						East	Yes	12'	Adequate
	11th Street	12th Street	Avenue II	86'	56'	West	Yes	12'/21'	Adequate
						East	Yes	12'/15'	Adequate
	12th Street	Pico Boulevard	Avenue II	86'	56'	West	Yes	12'	Adequate
						East	Yes	12'	Adequate
	Pico Boulevard	15th Street	Avenue II	86'	56'	West	Yes	12'	Adequate
						East	Yes	12'	Adequate
Grand Avenue	Olympic Boulevard	11th Street	Modified Avenue II	90'	56'	West	Yes	17'	Adequate
						East	Yes	15'/22'	Adequate
	11th Street	12th Street	Modified Avenue II	90'	56'	West	Yes	22'	Adequate
						East	Yes	17'	Adequate
	12th Street	Pico Boulevard	Modified Avenue II	90'	56'	West	Yes	17'	Adequate
						East	Yes	17'	Adequate
	Pico Boulevard	14th Street	Modified Avenue II	90'	56'	West	Yes	12'	Adequate
						East	Yes	12'	Adequate
Olive Street	Olympic Boulevard	11th Street	Modified Avenue II	90'	56'	West	Yes	17'	Adequate
						East	Yes	17'	Adequate
	11th Street	12th Street	Modified Avenue II	90'	56'	West	Yes	17'	Adequate
						East	Yes	17'/21'	Adequate
	12th Street	Pico Boulevard	Modified Avenue II	90'	56'	West	Yes	17'	Adequate
						East	Yes	17'	Adequate
	Pico Boulevard	14th Street	Modified Avenue II	90'	56'	West	Yes	12'	Adequate
						East	Yes	12'	Adequate
Hill Street	11th Street	12th Street	Modified Avenue II	92'	56'	West	Yes	18'	Adequate
						East	Yes	18'	Adequate
	12th Street	Pico Boulevard	Modified Avenue II	92'	56'	West	Yes	18'	Adequate
						East	Yes	12'	Adequate
	Pico Boulevard	14th Street	Modified Avenue II	90'	56'	West	Yes	17'	Substandard - uneven
						East	Yes	17'/24'	Adequate
Broadway	11th Street	12th Street	Modified Avenue II	90'	56'	West	Yes	17'	Adequate
						East	Yes	16'	Adequate
	12th Street	Pico Boulevard	Modified Avenue II	90'	56'	West	Yes	10'	Adequate
						East	Yes	16'	Adequate
11th Street	Figueroa Street	Flower Street	Modified Collector	N/A	N/A	North	Yes	15'	Adequate
						South	Yes	[4]	Currently under construction - Temp. sidewalk available
	Flower Street	Hope Street	Modified Collector	64'	40'	North	Yes	12'	Adequate
						South	Yes	12'	Adequate
	Hope Street	Grand Avenue	Modified Collector	64'	40'	North	Yes	10'/18'	Adequate
						South	Yes	12'	Adequate
	Grand Avenue	Olive Street	Modified Collector	64'	40'	North	Yes	17'	Adequate
						South	Yes	10'	Adequate

TABLE 1 (continued)
SIDEWALK INVENTORY AND CONDITIONS WITHIN THE STUDY AREA

Street	Segment To	Segment From	Street Classification	Right-of-Way Width Designated [1]	Roadway Width Designated [1]	Side of Street	Sidewalk Available	Sidewalk Width [2]	Condition [3] Adequate or Substandard
11th Street	Olive Street	Hill Street	Modified Collector	64'	40'	North	Yes	17'	Adequate
						South	Yes	10'	Adequate
12th Street	Figueroa Street	Flower Street	Avenue II	86'	56'	North	Yes	N/A	Currently under construction - Sidewalk not available
						South	Yes	[5]	Adequate
	Flower Street	Hope Street	Modified Collector	64'	40'	North	Yes	10'	Adequate
						South	Yes	[4]	Currently under construction - Temp. sidewalk available
	Hope Street	Grand Avenue	Modified Collector	64'	40'	North	Yes	10'	Adequate
						South	Yes	10'	Adequate
	Grand Avenue	Olive Street	Modified Collector	64'	40'	North	Yes	10'	Adequate
						South	Yes	10'	Adequate
	Olive Street	Hill Street	Modified Collector	64'	40'	North	Yes	10'	Adequate
						South	Yes	10'	Adequate
	Hill Street	Broadway	Modified Collector	64'	40'	North	Yes	10'	Adequate
						South	Yes	18'	Adequate
Pico Boulevard	Figueroa Street	Flower Street	Modified Boulevard II	114'	84'	North	Yes	18'	Adequate
						South	Yes	10'	Adequate
	Flower Street	Hope Street	Avenue I	100'	70'	North	Yes	12'/20'	Adequate
						South	Yes	12'	Adequate
	Hope Street	Grand Avenue	Avenue I	100'	70'	North	Yes	12'	Adequate
						South	Yes	8'/12'	Adequate
	Grand Avenue	Olive Street	Avenue I	100'	70'	North	Yes	10'/15'	Adequate
						South	Yes	8'	Adequate
	Olive Street	Hill Street	Avenue I	100'	70'	North	Yes	15'	Adequate
						South	Yes	10'	Adequate
	Hill Street	Broadway	Avenue I	100'	70'	North	Yes	10'/12'	Adequate
						South	Yes	10'	Adequate

Street classifications from City of Los Angeles' *Mobility Plan 2035* .
[1] Designated right-of-way and designated roadway widths from Navigate LA website.
[2] Existing sidewalk widths measured from Google Maps aerial view. Measurements are approximate.
[3] Sidewalk conditions based on Google Maps street views.
[4] Sidewalk is currently under construction. Unable to determine sidewalk width and condition.
[5] Aerial view showing sidewalk under construction. Unable to determine sidewalk width. However, a newly constructed sidewalk has been completed and is adequate.

An inventory of pedestrian crossing locations and amenities is provided in Table 2. As indicated in Table 2, all intersections within the study area are signalized and generally provided adequate pedestrian amenities. At these locations, crosswalks are generally provided at each leg of the intersection with curb ramps and are considered adequate. A brief description of the pedestrian crossing locations and amenities, including traffic signals, pedestrian signals, intersection crosswalks, pedestrian crosswalks, and crosswalks with push buttons, within the study area follows:

Pedestrian Crossings along Figueroa Street

- Intersection of Figueroa Street/Kobe Bryant Way-12th Street: The intersection is signalized with traffic control devices. Continental crosswalks are available on the north, south and east legs of the intersection. A crosswalk with a decorative design (stamped concrete) is provided on the west leg. Pedestrian call pushbuttons are provided on all approaches.

- Intersection of Figueroa Street /Pico Boulevard: The intersection is signalized with traffic control devices. Continental crosswalks are available on all four approaches. Pedestrian call pushbuttons are provided on all approaches.

Pedestrian Crossings along Flower Street

- Intersection of Flower Street/11th Street: The intersection is signalized with traffic control devices. Continental crosswalks are available on all four approaches. Pedestrian call pushbutton is provided on the west leg of the intersection.

- Intersection of Flower Street/12th Street: The intersection is signalized with traffic control devices. Crosswalks with decorative designs (stamped concrete) are provided on the west and south legs of the intersection and a standard parallel crosswalk is provided on the east leg. A crosswalk is not provided on the north leg of the intersection. Pedestrian call pushbutton is provided for the three approaches with crosswalks.

- Intersection of Flower Street/Pico Boulevard: The intersection is signalized with traffic control devices. Continental crosswalks are available on all four approaches. Pedestrian call pushbuttons are provided on all approaches.

Pedestrian Crossings along Hope Street

- Intersection of Hope Street/11th Street: The intersection is signalized with traffic control devices. Continental crosswalks are available on all four approaches. Pedestrian call pushbuttons are provided on all approaches.

TABLE 2
INVENTORY OF PEDESTRIAN CROSSING LOCATIONS AND AMENITIES WITHIN THE STUDY AREA

Intersection	Crosswalk Type				Curb Access Ramp Provided				Tactile Warning Strip Provided				Curb Extension/Bulbout Provided				Overall Assessment of Quality
	North Leg	West Leg	South Leg	East Leg	NW Corner	NE Corner	SE Corner	SW Corner	NW Corner	NE Corner	SE Corner	SW Corner	NW Corner	NE Corner	SE Corner	SW Corner	
Figueroa Street & 12th Street	Continental	Decorative	Continental	Continental	Yes	Yes	Yes	Yes	No	No	Yes	No	No	No	No	No	Adequate
Figueroa Street & Pico Boulevard	Continental	Continental	Continental	Continental	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	No	No	Adequate
Flower Street & 11th Street	Continental	Continental	Continental	Continental	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	Adequate
Flower Street & 12th Street	None	Standard	Decorative	Decorative	N/A	Yes	Yes	Yes	N/A	No	No	Yes	No	No	No	No	Adequate
Flower Street & Pico Boulevard	Continental	Continental	Continental	Continental	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	Adequate
Hope Street & 11th Street	Continental	Continental	Continental	Continental	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Adequate
Hope Street & 12th Street	Standard	Standard	Standard	Standard	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	Adequate
Hope Street & Pico Boulevard	Decorative	Decorative	Decorative	Decorative	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	Yes	No	Adequate
Grand Avenue & 11th Street	Continental	Continental	Continental	Continental	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	Adequate
Grand Avenue & 12th Street	Continental	Continental	Continental	Continental	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	Adequate
Grand Avenue & Pico Boulevard	Continental	Continental	Continental	Continental	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	Adequate
Olive Street & 11th Street	Yellow School	Yellow School	Yellow School	Yellow School	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Adequate
Olive Street & 12th Street	Standard	Standard	Standard	Standard	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	Adequate
Olive Street & Pico Boulevard	Continental	Continental	Continental	Continental	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Adequate
Hill Street & 11th Street	Yellow School	Yellow School	Yellow School	Yellow School	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Adequate
Hill Street & 12th Street	Continental	Continental	Continental	Continental	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	Adequate
Hill Street & Pico Boulevard	Continental	Continental	Continental	Continental	Yes	Yes	Yes	No	Yes	No	No	No	No	No	No	No	Adequate
Broadway & 12th Street	Standard	Standard	Standard	Standard	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	No	No	Adequate
Broadway & Pico Boulevard	Standard	Standard	Standard	Standard	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	Adequate

Mid-Block Crossing Locations	Signal Provided	Crosswalk Type	Curb Access Ramp Provided		Tactile Warning Strip Provided		Curb Extension/ Bulbout Provided		Overall Assessment of Quality
			NSide/WSide	SSide/ESide	NSide/WSide	SSide/ESide	NSide/WSide	SSide/ESide	
Hope Street between Cameron Ln & 15th St	No	Decorative	Yes	Yes	Yes	Yes	No	No	Substandard
Grand Avenue between 14th St & 15th St	Yes	Continental	Yes	Yes	No	No	Yes	Yes	Adequate
Olive Street between Olympic Bl & 11th St	Yes	Continental	Yes	Yes	Yes	Yes	No	No	Adequate
Hill Street between 11th St & 12th St	Yes	Continental	Yes	Yes	No	Yes	No	No	Adequate

[1] Based on Google Maps aerial view and street views.

- Intersection of Hope Street/12th Street: The intersection is signalized with traffic control devices. Standard parallel crosswalks are available on all four approaches. Pedestrian call pushbuttons are not provided at this intersection. Pedestrian signal calls are actuated/automatic.

- Intersection of Hope Street/Pico Boulevard: The intersection is signalized with traffic control devices. Crosswalks with decorative (intricate) design are available on all four approaches. Pedestrian call pushbuttons are provided on all approaches.

- The pedestrian crossing on Hope Street between Cameron Lane and 15th Street: An unsignalized pedestrian crossing is provided in front of the entrance of Dignity Health - California Hospital Medical Center. There are stop sign controls at this highlighted crosswalk (decorative with intricate design).

<u>Pedestrian Crossings along Grand Avenue</u>

- Intersection of Grand Avenue/11th Street: The intersection is signalized with traffic control devices. Continental crosswalks are available on all four approaches. Pedestrian call pushbuttons are provided on all approaches.

- Intersection of Grand Avenue/12th Street: The intersection is signalized with traffic control devices. Continental crosswalks are available on all four approaches. Pedestrian call pushbuttons are provided on all approaches.

- Intersection of Grand Avenue/Pico Boulevard: The intersection is signalized with traffic control devices. Continental crosswalks are available on all four approaches. Pedestrian call pushbuttons are provided on all approaches.

- The pedestrian crossing on Grand Avenue between 14th Street and 15th Street: This mid-block crossing connects two of the Dignity Health - California Hospital Medical Center buildings. This pedestrian crossing is controlled by a pedestrian-activated signal. Pedestrian call pushbuttons are provided at the pedestrian crossing. A continental crosswalk is provided across Grand Avenue.

<u>Pedestrian Crossings along Olive Street</u>

- The pedestrian crossing on Olive Street between Olympic Boulevard and 11th Street: This pedestrian crossing is controlled by a pedestrian-activated signal with pedestrian call pushbuttons. A continental crosswalk is provided across Olive Street.

- Intersection of Olive Street/11th Street: The intersection is signalized with traffic control devices. Continental yellow school crosswalks are available on all four approaches. Pedestrian call pushbuttons are provided on all approaches.

- Intersection of Olive Street/12th Street: The intersection is signalized with traffic control devices. Standard parallel crosswalks are available on all four approaches, but no pedestrian call pushbuttons are provided. Pedestrian signal calls are automatic.

- Intersection of Olive Street/Pico Boulevard: The intersection is signalized with traffic control devices. Continental crosswalks are available on all four approaches. Pedestrian call pushbuttons are provided on all approaches.

Pedestrian Crossings along Hill Street

- Intersection of Hill Street/11th Street: The intersection is signalized with traffic control devices. Continental yellow school crosswalks are available on all four approaches. Pedestrian call pushbuttons are provided on all approaches.

- The pedestrian crossing on Hill Street between 11th Street and 12th Street: The pedestrian crossing is signalized with pedestrian control devices and “Ped Xing” signs. Pedestrian call pushbuttons are provided at the pedestrian crossing. A continental crosswalk is provided across Hill Street.

- Intersection of Hill Street/12th Street: The intersection is signalized with traffic control devices. Continental crosswalks are available on all four approaches. No pedestrian call pushbuttons are provided at this intersection. Pedestrian signal calls are automatic.

- Intersection of Hill Street/Pico Boulevard: The intersection is signalized with traffic control devices. Continental crosswalks are available on all four approaches. Pedestrian call pushbuttons are provided on all approaches.

Pedestrian Crossings along Broadway

- Intersection of Broadway/12th Street: The intersection is signalized with traffic control devices. Standard parallel crosswalks are available on all four approaches. No pedestrian call pushbuttons are provided at this intersection. Pedestrian signal calls are automatic.

- Intersection of Broadway/Pico Boulevard: The intersection is signalized with traffic control devices. Standard parallel crosswalks are available on all four approaches. No pedestrian call pushbuttons are provided at this intersection. Pedestrian signal calls are automatic.

As shown in Figure 4, Figueroa Street, Flower Street, Hope Street, Grand Avenue, Olive Street, Hill Street, Broadway, and Pico Boulevard are designated as Pedestrian Enhanced District street segments in the City of Los Angeles’s 2035 Mobility Plan.

Potential Pedestrian Destinations

The pedestrian network consisting of sidewalks, intersections with signalized crossing and crosswalks provide pedestrian connectivity of the potential pedestrian destinations within the study area. These potential pedestrian destinations are shown in Figure 5 and summarized in Table 3. Table 3 indicates the facility types, the names, and the locations for the potential destinations including a total of the following facility types:

- 36 Bus Stops and 1 Metro LRT Station
- 3 Schools / Medical Centers (Hospitals)
- 3 Churches
- 3 Major Entertainment Venues (Stadium / Theater)
- 2 Government Offices / Convention Center

As shown in Table 3, the destinations within the study area include Staples Center, Los Angeles Convention Center, Microsoft Theater, several (36) bus stops, the Metro Rail Station at Flower Street, and other facilities including medical offices, religious facilities, a school and government office.

EXISTING BICYCLE CONDITIONS

The City of Los Angeles 2010 Bicycle Plan (*2010 Bicycle Plan, A Component of the City of Los Angeles Transportation Element*; Los Angeles Department of City Planning; 2011) documents the existing bicycle facilities within the City of Los Angeles. These facilities are classified as Bicycle Paths (Class I), Bicycle Lanes (Class II) and Bicycle Routes/Bicycle-Friendly Street (Class III). A brief description of these facilities follows:

- Class I - Bicycle Paths provide an exclusive paved right-of-way separated from the street or highway.

- Class II - Bicycle Lane provide a striped and signed bike lane for one-way travel on a street or highway.

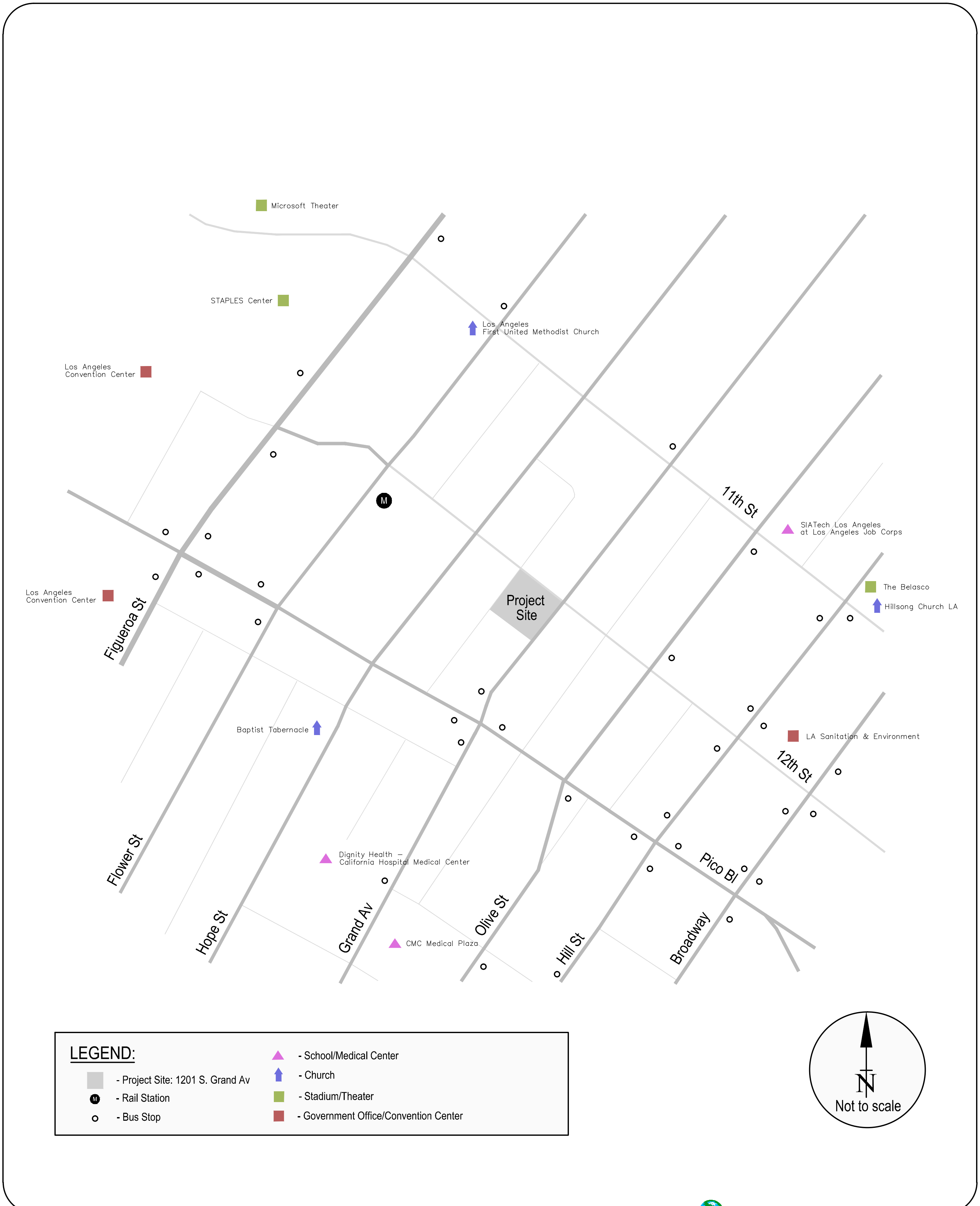

FIGURE 5
POTENTIAL PEDESTRIAN DESTINATIONS

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TABLE 3
POTENTIAL PEDESTRIAN DESTINATIONS

Facility Type	Name	Location
Bus Stop	Figueroa / 11th - Northbound Figueroa / 12th - Southbound, Staples Center - Southbound Staples Center - Northbound Pico / Figueroa - Westbound Figueroa / Pico - Southbound Pico / Figueroa - Eastbound Figueroa / Pico - Northbound Flower / 11th - Southbound Pico / Flower - Westbound Flower / Pico - Southbound Grand / 11th - Southbound Grand / Pico - Southbound Pico / Grand - Eastbound Grand / Pico - Southbound Pico / Grand - Westbound Grand / 14th - Southbound Olive / 11th - Northbound Olive / 12th - Northbound Olive / Pico - Northbound Olive / 14th - Northbound Hill / 11th - Southbound Hill / 11th - Northbound Hill / 12th - Southbound Hill / 12th - Southbound Hill / 12th - Northbound Hill / Pico - Southbound Pico / Hill - Eastbound Hill / Pico - Northbound Pico / Hill - Westbound Hill / 14th - Southbound Broadway / 12th - Southbound Broadway / 12th - Northbound Broadway / 12th - Northbound Broadway / Pico - Southbound Broadway / Pico - Northbound Broadway / Pico - Northbound	NE corner of Figueroa Street & Chick Hearn Court / 11th Street NW corner of Figueroa Street & Kobe Bryant Way / 12th Street SE corner of Figueroa Street & Kobe Bryant Way / 12th Street NW corner of Figueroa Street & Pico Boulevard SW corner of Figueroa Street & Pico Boulevard SE corner of Figueroa Street & Pico Boulevard NE corner of Figueroa Street & Pico Boulevard NW corner of Flower Street & 11th Street NW corner of Flower Street & Pico Boulevard SW corner of Flower Street & Pico Boulevard NW corner of Grand Avenue & 11th Street NW corner of Grand Avenue & Pico Boulevard SW corner of Grand Avenue & Pico Boulevard SW corner of Grand Avenue & Pico Boulevard NE corner of Grand Avenue & Pico Boulevard NW corner of Grand Avenue & 14th Street SE corner of Olive Street & 11th Street NE corner of Olive Street & 12th Street SE corner of Olive Street & Pico Boulevard SE corner of Olive Street & 14th Street SW corner of Hill Street & 11th Street SE corner of Hill Street & 11th Street NW corner of Hill Street & 12th Street SW corner of Hill Street & 12th Street NE corner of Hill Street & 12th Street NW corner of Hill Street & Pico Boulevard SW corner of Hill Street & Pico Boulevard SE corner of Hill Street & Pico Boulevard NE corner of Hill Street & Pico Boulevard NW corner of Hill Street & 14th Street SW corner of Broadway & 12th Street SE corner of Broadway & 12th Street NE corner of Broadway & 12th Street NW corner of Broadway & Pico Boulevard SE corner of Broadway & Pico Boulevard NE corner of Broadway & Pico Boulevard
Light Rail Station	Pico Station -Metro A Line (Blue) and the Metro E Line (Expo)	1250 S Flower Street, Los Angeles, CA 90015
School	SIATech Los Angeles at Los Angeles Job Corps	221 W 11th Street, Los Angeles, CA 90015
Medical Center	Dignity Health - California Hospital Medical Center CMC Medical Plaza	1401 S Grand Avenue, Los Angeles, CA 90015 1414 S Grand Avenue, Los Angeles, CA 90015
Church	Los Angeles First United Methodist Church Hillsong Church LA Baptist Tabernacle	714 W Olympic Boulevard #920, Los Angeles, CA 90015 1050 S Hill Street, Los Angeles, CA 90015 1329 S Hope Street, Los Angeles, CA 90015
Stadium	STAPLES Center	1111 S Figueroa Street, Los Angeles, CA 90015
Theater	The Belasco Microsoft Theater	1050 S Hill Street, Los Angeles, CA 90015 777 Chick Hearn Court, Los Angeles, CA 90015
Convention Center	Los Angeles Convention Center	1201 S Figueroa Street, Los Angeles, CA 90015
Government Office	LA Sanitation & Environment	1149 S Broadway 9th floor, Los Angeles, CA 90015

- Class III - Bicycle Routes are generally located along collector and lower volume arterial streets. Bicycle-Friendly Streets (BFS) are a new Class III type of routes that are generally located on lower volume residential local and collector streets and that introduce traffic calming measures. Bicycle routes provide for a shared use of the roadway with posted signage for bicycle use which can include ‘sharrow’ pavement markings.

Figure 6 shows the existing and planned bicycle facilities in the study area. As shown in the figure, bicycle facilities are provided on the following streets:

- Figueroa Street: Class II - Bicycle Lanes are provided along Figueroa Street from Cesar Estrada Chavez Avenue to Martin Luther King Jr Boulevard.

- Grand Avenue: Class II - Bicycle Lanes are provided along Grand Avenue from Wilshire Boulevard to 39th Street.

- Olive Street: Class II - Bicycle Lanes are provided along Olive Street from 7th Street to Washington Boulevard.

- 11th Street: Class II - Bicycle Lanes are provided along 11th Street from Figueroa Street to Wall Street.

- Broadway: Class III – Bicycle Routes are provided along Broadway from 11th Street to 3rd Street.

Future Bicycle Conditions

Future planned bicycle facilities are included in the City of Los Angeles’ Mobility Plan document. The City of Los Angeles’ Mobility Plan includes a Bicycle Enhanced Network (BEN) and Bicycle Lane Network.

The Bicycle Enhanced Network is a network of streets that will receive treatments that prioritize bicyclists. The Bicycle Enhanced Network consists of:

- Bicycle Paths – Bicycle facilities outside of the roadway that provide paved pathway separated from motorized vehicular traffic by an open space or barrier and either within the highway rights-of-way or within an independent alignment.

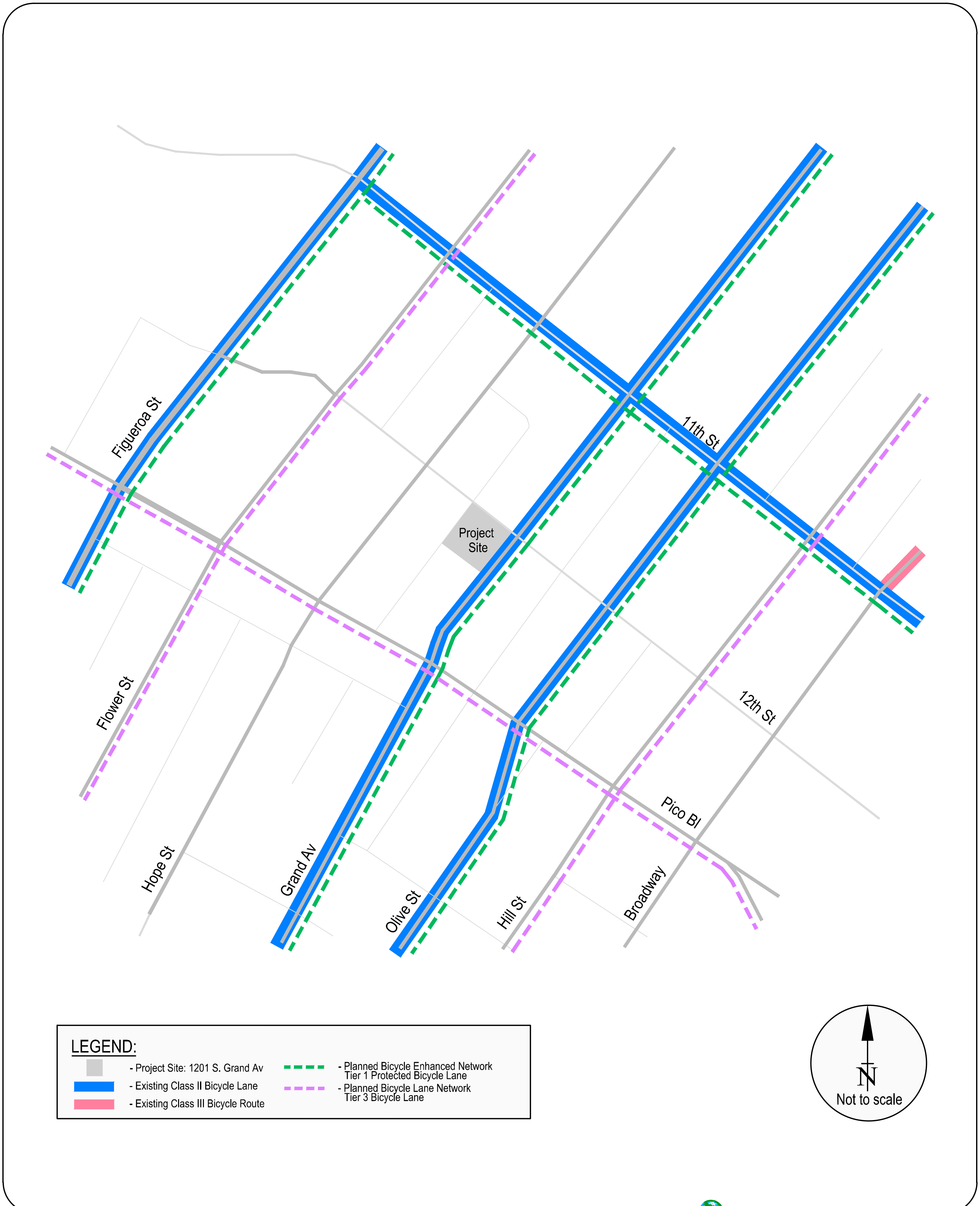

FIGURE 6
EXISTING AND PLANNED BICYCLE FACILITIES WITHIN THE STUDY AREA

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- Tier 1 Protected Bicycle Lanes – Bicycle facilities on arterial roadways with physical separation that provide a higher level of protection from vehicle traffic than just a striped bicycle lane.

- Neighborhood Enhanced Network Streets – Bicycle facilities on neighborhood that are identified to provide gap closures to the protected bicycle lane system within the Bicycle Enhanced Network.

The Bicycle Lane Network is a proposed network of bicycle lanes on arterial roadways with striped separation. The Bicycle Lane Network is comprised of Tier 2 and Tier 3 Bicycle Lanes. Tier 2 bicycle lanes are more likely than Tier 3 bicycle lanes to be built by 2035.

The future planned bicycle facilities are also shown in Figure 6. As shown in the figure, the future planned bicycle facilities include following streets.

- Figueroa Street: Bicycle Enhanced Network – Tier 1 Protected Bicycle Lanes are proposed along Figueroa Street between 7th Street and Martin Luther King Jr Boulevard.

- Flower Street: Bicycle Lane Network – Tier 3 Bicycle Lanes are proposed along Flower Street between 1st Street and Exposition Boulevard.

- Grand Avenue: Bicycle Enhanced Network – Tier 1 Protected Bicycle Lanes are proposed along Grand Avenue between Wilshire Boulevard and Washington Boulevard.

- Olive Street: Bicycle Enhanced Network – Tier 1 Protected Bicycle Lanes are proposed along Olive Street between 7th Street and Washington Boulevard.

- Hill Street: Bicycle Lane Network – Tier 3 Bicycle Lanes are proposed along Hill Street between 4th Street and Washington Boulevard.

- 11th Street: Bicycle Enhanced Network – Tier 1 Protected Bicycle Lanes are proposed along 11th Street between Figueroa Street and Main Street.

- Pico Boulevard: Bicycle Lane Network – Tier 3 Bicycle Lanes are proposed along Pico Boulevard between Gateway Boulevard and Central Avenue.

EXISTING TRANSIT CONDITIONS

Table 4 summarizes the transit lines operated in the study area, the type of service (local, express, rapid, transit way, and rail), the days and times of operation, frequency of service during peak hours, and the service origin and destination for the transit lines. As shown in Table 4, forty-seven bus lines and two light rail lines currently serve the study area.

A summary of the number of transit lines provided by each transit operator is summarized below:

- Los Angeles County Metropolitan Transportation Authority (MTA) – 2 light-rail lines (Metro A Line and Metro E Line) and 30 bus lines
- LADOT – 11 Commuter Express (CE) bus lines and 2 DASH bus lines
- Foothill Transit (FT) – 6 bus lines
- Orange County Transportation Authority (OCTA) – 2 bus lines
- City of Santa Monica Big Blue Bus (BBB) – 1 bus line
- City of Commerce Municipal Bus Lines (CO) – 1 bus line
- City of Montebello Bus Lines (M) – 1 bus line
- Torrance Transit (TT) – 1 bus lines

As indicated in the table, Los Angeles County MTA provides the majority of service within the study area. The transit lines serving the study area are shown in Figure 7. A robust network of transit lines currently serves the study area.

The City of Los Angeles *Mobility Plan 2035* includes a network of transit enhanced streets to improve line performance and reliability. Enhancements range from streetscape improvements to make walking safer and easier, to transit stop shelters, or bus lanes. Streets prioritized for transit service improvements in the study area include:

- Comprehensive Transit Enhanced Streets: Figueroa Street, and Broadway.

TABLE 4
EXISTING TRANSIT LINES

Carrier	Line	Line Type	Direction	Street	Days of Operation	Weekday - Hours of Service	Saturday - Hours of Service	Sunday - Hours of Service	Weekday Peak Hour Headways (Minutes)				Origin	Destination
									AM Peak Period		PM Peak Period			
									NB/EB	SB/WB	NB/EB	SB/WB		
MTA	2	Local	E/W	Hill Street, Broadway	Monday-Friday, Saturday, Sunday	4:12-4:03	4:12-4:03	4:12-4:03	14	10	18	13	Westwood	Downtown Los Angeles
	4	Local	E/W	Hill Street, Broadway	Monday-Friday, Saturday, Sunday	4:37-4:34	4:42-4:36	4:43-4:34	13	11	10	14	Santa Monica	Downtown Los Angeles
	14	Local	E/W	Grand Avenue, Olive Street	Monday-Friday, Saturday, Sunday	4:54-4:19	4:53-4:19	4:53-4:19	7	7	7	7	Beverly Hills	Downtown Los Angeles
	30	Local	E/W	Pico Boulevard, Broadway	Monday-Friday, Saturday, Sunday	3:40-3:34	3:40-3:34	3:40-3:35	11	13	14	12	West Hollywood	East Los Angeles
	35	Local	E/W	Broadway	Monday-Friday, Saturday, Sunday	4:13-12:42	4:30-12:42	4:40-12:42	11	12	12	12	West Los Angeles	Downtown Los Angeles
	40	Local	N/S	Broadway, 11th Street	Monday-Friday, Saturday, Sunday	4:31-12:56	4:42-12:56	4:44-12:56	12	12	15	13	Redondo Beach	Downtown Los Angeles
	45	Local	N/S	Broadway, 11th Street	Monday-Friday, Saturday, Sunday	3:05-2:59	3:05-2:58	3:05-2:58	7	12	10	8	Rosewood	Lincoln Heights
	70	Local	E/W	Grand Avenue, Olive Street	Monday-Friday, Saturday, Sunday	4:50-4:33	5:03-4:33	5:04-4:33	14	13	15	21	El Monte	Downtown Los Angeles
	71	Local	E/W	Grand Avenue, Olive Street	Monday-Friday, Saturday, Sunday	5:37-20:54	5:19-20:38	5:19-20:35	17	20	35	35	El Sereno	Downtown Los Angeles
	76	Local	E/W	Grand Avenue, Olive Street	Monday-Friday, Saturday, Sunday	3:51-3:35	3:58-3:35	3:58-3:35	17	18	17	18	El Monte	Downtown Los Angeles
	78	Local	E/W	Grand Avenue, Olive Street	Monday-Friday, Saturday, Sunday	4:03-2:10	4:10-2:10	5:02-2:10	24	13	23	19	South Arcadia	Downtown Los Angeles
	79	Local	E/W	Grand Avenue, Olive Street	Monday-Friday, Saturday, Sunday	4:34-1:13	5:38-1:15	5:32-1:15	25	19	27	28	Arcadia	Downtown Los Angeles
	81	Local	N/S	Figueroa Street, Flower Street, 11th Street	Monday-Friday, Saturday, Sunday	4:30-1:43	4:43-1:43	4:42-1:43	8	10	12	9	South Los Angeles	Eagle Rock
	83	Local	N/S	Hill Street	Monday-Friday, Saturday, Sunday	4:16-4:01	4:05-4:01	4:05-4:01	35	23	23	31	Glendale	Downtown Los Angeles
	90	Local	N/S	Hill Street	Monday-Friday, Saturday, Sunday	4:48-23:35	4:51-23:35	6:11-23:24	27	31	31	30	Sylmar	Downtown Los Angeles
	91	Local	N/S	Hill Street	Monday-Friday, Saturday, Sunday	4:17-12:22	5:26-12:22	5:10-12:22	30	30	30	30	Sunland	Downtown Los Angeles
	94	Local	N/S	Hill Street	Monday-Friday, Saturday, Sunday	4:21-2:45	4:32-2:45	5:16-2:45	19	18	26	23	Sylmar	Downtown Los Angeles
	96	Local	N/S	Grand Avenue, Olive Street	Monday-Friday, Saturday, Sunday	4:22-21:18	5:35-21:22	6:16-20:06	30	28	30	32	Burbank	Downtown Los Angeles
	302	Limited	E/W	Broadway	Monday-Friday	5:51-19:40 (No mid-day service)	N/A	N/A	N/A	15	10	N/A	Westwood	Downtown Los Angeles
	330	Limited	E/W	Pico Boulevard, Broadway	Monday-Friday	5:47-19:02 (No mid-day service)	N/A	N/A	12	15	14	12	West Hollywood	Downtown Los Angeles
	378	Limited	E/W	Grand Avenue, Olive Street	Monday-Friday	5:51-19:48 (No mid-day service)	N/A	N/A	N/A	23	21	N/A	South Arcadia	Downtown Los Angeles
	442	Express	N/S	Figueroa Street, Flower Street, 11th Street	Monday-Friday	5:37-18:37 (No mid-day service)	N/A	N/A	39	N/A	N/A	44	Hawthorne	Downtown Los Angeles
	456	Express	N/S	Figueroa Street, Flower Street	Monday-Friday	6:00-18:55 (No mid-day service)	N/A	N/A	30	N/A	N/A	30	Long Beach	Downtown Los Angeles
	460	Express	N/S	Figueroa Street, Flower Street	Monday-Friday, Saturday, Sunday	4:00-1:53	4:30-1:53	4:30-1:53	22	22	21	22	Anaheim	Downtown Los Angeles
	745	Rapid	N/S	Broadway, 11th Street	Monday-Friday, Saturday, Sunday	4:49-21:15	5:30-20:15	5:53-20:08	9	10	10	10	South Los Angeles	Downtown Los Angeles
	770	Rapid	E/W	Grand Avenue, Olive Street	Monday-Friday, Saturday	4:51-21:12	6:20-19:46	N/A	16	16	15	19	El Monte	Downtown Los Angeles
	794	Rapid	N/S	Hill Street	Monday-Friday	4:36-21:37	N/A	N/A	24	26	27	25	Sylmar	Downtown Los Angeles
	910 (Silver Line)	Transit Way	N/S	Figueroa Street, Flower Street	Monday-Friday, Saturday, Sunday	4:00-3:19	3:30-3:19	3:30-3:19	7	6	8	7	Harbor Gateway	El Monte
	950 (Silver Line)	Transit Way	N/S	Figueroa Street, Flower Street	Monday-Friday, Saturday, Sunday	3:30-21:37	5:33-21:37	5:33-21:37	13	22	18	13	San Pedro	El Monte
	E Line (Expo)	Rail	E/W	Flower Street	Monday-Friday, Saturday, Sunday	3:27-2:52	3:27-2:52	3:27-2:52	6	6	6	6	Santa Monica	Downtown Los Angeles
	A Line (Blue)	Rail	N/S	Flower Street	Monday-Friday, Saturday, Sunday	3:53-3:03	3:53-3:03	3:53-3:03	6	6	6	6	Long Beach	Downtown Los Angeles
	DS	Express	N/S	Figueroa Street	Dodgers Home Game Days	From Union Station: Starting 90 mins before game time through the end of the 2nd inning			10				Union Station	Dodger Stadium
						To Union Station: Starting after the final out for 45 mins or 20 mins after post-game events			5				Dodger Stadium	Union Station
LADOT	409	Express	N/S	Hill Street	Monday-Friday	6:10-19:26 (No mid-day service)	N/A	N/A	N/A	17	18	N/A	Sylmar	Downtown Los Angeles
	419	Express	E/W	Figueroa Street, Flower Street, 11th Street	Monday-Friday	5:40-20:24 (No mid-day service)	N/A	N/A	N/A	19	18	N/A	Chatsworth	Downtown Los Angeles
	422	Express	E/W	Figueroa Street, Flower Street, 11th Street	Monday-Friday	5:10-20:17 (No mid-day service)	N/A	N/A	N/A	15	22	N/A	Thousand Oaks	Downtown Los Angeles
	423	Express	E/W	Figueroa Street, Flower Street, 11th Street	Monday-Friday	6:05-19:52 (No mid-day service)	N/A	N/A	N/A	18	21	N/A	Thousand Oaks	Downtown Los Angeles
	431	Express	E/W	Grand Avenue, Olive Street	Monday-Friday	6:40-19:19 (No mid-day service)	N/A	N/A	32	N/A	N/A	30	Westwood	Downtown Los Angeles
	437	Express	E/W	Grand Avenue, Olive Street	Monday-Friday	6:14-19:22 (No mid-day service)	N/A	N/A	15	N/A	N/A	22	Venice/Playa Vista	Downtown Los Angeles
	438	Express	N/S	Figueroa Street, Flower Street	Monday-Friday	6:00-19:11 (No mid-day service)	N/A	N/A	11	N/A	N/A	11	Redondo Beach	Downtown Los Angeles
	439	Express	N/S	Figueroa Street, Flower Street	Monday-Friday	6:40-19:48 (No mid-day service)	N/A	N/A	N/A	50	50	N/A	El Segundo	Downtown Los Angeles
	448	Express	N/S	Figueroa Street, Flower Street	Monday-Friday	5:45-18:59 (No mid-day service)	N/A	N/A	16	N/A	N/A	16	Rancho Palos Verdes	Downtown Los Angeles
	Route D	Local	N/S	Grand Av, Olive St, Hill St, 12th St, Pico Bl	Monday-Friday, Saturday, Sunday	6:00-18:30	9:00-18:00	9:00-18:00	6	6	6	6	South Park	Union Station
	Route F	Local	N/S	Figueroa Street	Monday-Friday, Saturday, Sunday	6:00-18:30	9:00-18:00	9:00-18:00	10	10	10	10	Financial District	Exposition Park
FT	Silver Streak	Rapid	E/W	Figueroa Street, Flower Street	Monday-Friday, Saturday, Sunday	0:00-23:56	0:00-23:53	0:00-23:53	15	8	10	15	Montclair/West Covina	Downtown Los Angeles
OCTA	701	Express	N/S	Figueroa Street, Flower Street	Monday-Friday	5:30-18:36 (No mid-day Service)	N/A	N/A	25	N/A	N/A	50	Huntington Beach	Downtown Los Angeles
	721	Express	N/S	Figueroa Street, Flower Street	Monday-Friday	5:15-19:20 (No mid-day Service)	N/A	N/A	45	57	45	48	Fullerton	Downtown Los Angeles
BBB	R10	Express	E/W	Grand Avenue, Olive Street	Monday-Friday	6:00-19:10 (No mid-day service)	N/A	N/A	30	N/A	N/A	30	Santa Monica	Downtown Los Angeles
TT	4X	Express	N/S	Figueroa Street, Flower Street	Monday-Friday, Saturday	5:09-19:56 (No mid-day service)	9:45-19:27	N/A	32	52	37	30	Torrance	Downtown Los Angeles
MBL	50	Local	E/W	Hill Street	Monday-Friday, Saturday	4:02-22:50	4:54-22:30	N/A	34	34	31	35	La Mirada	Downtown Los Angeles

Sources:
(1) City of Montebello Bus Lines (MBL) Website
(2) City of Santa Monica Big Blue Bus (BBB) Website
(3) City of Torrance Transit (TT) Website
(4) Foothill Transit (FT) Website
(5) Los Angeles County Metropolitan Transit Authority (MTA) Website
(6) Los Angeles Department of Transportation (LADOT) Transit Services Website
(7) Orange County Transportation Authority (OCTA) Website

LEGEND:

- Project Site: 1201 S. Grand Av
- Santa Monica's Big Blue Bus (BBB)
- Los Angeles Department of Transportation Commuter Express (CE)
- Los Angeles Department of Transportation DASH (DASH)
- Dodger Shuttle (DS)
- Foothill Transit (FT)
- Orange County Transportation Authority (OCTA)
- Montebello Bus Lines (MBL)
- Los Angeles County Metropolitan Transportation Authority (MTA) Bus
- Los Angeles County Metropolitan Transportation Authority (MTA) Rail
- Torrance Transit (TT)

FIGURE 7
EXISTING TRANSIT LINES

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EXISTING TRAFFIC VOLUMES AND LEVELS OF SERVICE

The following sections present the existing intersection peak hour traffic volumes, a description of the methodology utilized to analyze the intersection traffic conditions, and the resulting level of service conditions at each of the study intersections.

Existing Traffic Volumes

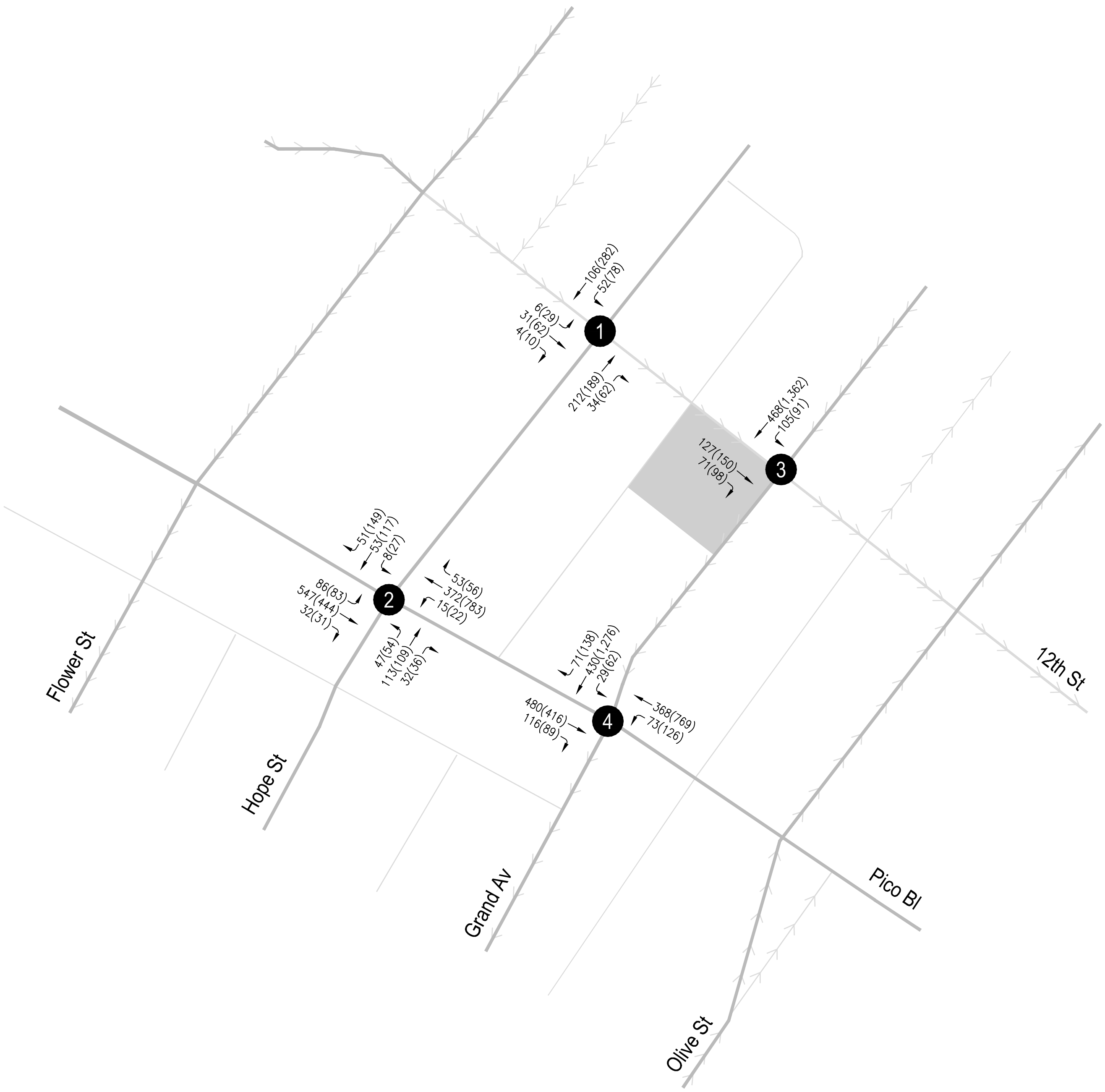
Weekday morning (AM) and evening (PM) peak hour traffic counts were compiled from data collected at the four study (non-CEQA) intersections in 2017 and 2018. In consultation with LADOT, these traffic counts were factored (1% per year) up to reflect 2020 conditions. These traffic volumes reflect typical weekday operations during current year 2020 conditions. The traffic volumes in Figure 8 represent, for the purposes of this analysis, the Existing 2020 conditions during the AM and PM peak hours. The raw data showing the traffic counts are attached in Appendix C.

Level of Service Methodology

LOS is a qualitative measure used to describe the condition of traffic flow, ranging from excellent conditions at LOS A to overloaded conditions at LOS F. LOS D is typically recognized as the minimum acceptable level of service in urban areas. The LOS definitions for signalized intersections are provided in Table 5. All four study intersections are controlled by traffic signals.

Consistent with the City of Los Angeles' *Transportation Assessment Guidelines*, the intersection capacity analysis was conducted using the Highway Capacity Manual, 6th Edition (Transportation Research Board, 2016) (HCM) signalized methodologies. The HCM signalized methodology calculates the average control delay, in seconds, for each vehicle passing through the intersections. Table 5 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 intersections.

The four study intersections under City of Los Angeles jurisdiction are currently controlled by the City of Los Angeles' Automated Traffic Surveillance and Control (ATSAC) System and Adaptive Traffic Control System (ATCS).



LEGEND:

- Project Site: 1201 S. Grand Av
- XXX(XXX) - AM (PM) Peak Hour Traffic Volumes
- # - Location of Study Intersection

N

Not to scale

FIGURE 8
EXISTING (2020) CONDITIONS - PEAK HOUR TRAFFIC VOLUMES

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TABLE 5
LEVEL OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS
HCM OPERATIONAL METHODOLOGY

Level of Service	Average Stopped Delay per Vehicle (seconds)	Definition
A	≤ 10.0	EXCELLENT. No vehicle waits longer than one red light and no approach phase is fully used.
B	> 10.0 and ≤ 20.0	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	> 20.0 and ≤ 35.0	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	> 35.0 and ≤ 55.0	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.
E	> 55.0 and ≤ 80.0	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 80.0	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.

Source: Highway Capacity Manual, Transportation Research Board, 2016

Existing Levels of Service

The existing traffic volumes presented in Figure 8 for AM and PM peak hours were used in conjunction with the level of service methodologies described above, and the current intersection characteristics illustrated in Appendix B, to determine the existing operating conditions at the analyzed intersections.

Table 6 summarizes the results of the intersection capacity analysis for existing conditions at each of the four intersections in the study area. The table indicates the existing average control delay during the morning and evening peak hours and the corresponding LOS at the study intersections. As illustrated in the table, all four study intersections are currently operating at LOS C or better during both the morning and evening peak hours for Existing (2020) conditions.

The operational calculation worksheets for Existing (2020) conditions are provided in Appendix D of the report.

ALIGNMENT WITH VISION ZERO PROGRAM

The City of Los Angeles' Vision Zero Program aims to decrease transportation related fatality rate to zero by the year 2035 through a number of strategies including modifying the design of streets to improve the safety for vulnerable road users. This policy was adopted as part of the City of Los Angeles' 2035 Mobility Plan (*Mobility Plan 2035, An Element of the General Plan*; Los Angeles Department of City Planning; 2016), and the City of Los Angeles' Vision Zero Action Plan (*Vision Zero Action Plan 2015-2025*; Los Angeles Department of Transportation; 2017).

The City of Los Angeles identified the High Injury Network, where a relatively small number of streets had a disproportionate number of traffic collision. Future improvement projects, policies, and programs have been prioritized at intersections and along corridors identified within the High Injury Network to reduce traffic violence.

Figure 9 shows the City's High Injury Network within the study area. A description of the streets included in High Injury Network follows.

TABLE 6
EXISTING (2020) INTERSECTION LEVEL OF SERVICE ANALYSIS

Map No.	Intersection	AM Peak Hour		PM Peak Hour	
		Delay (s)	LOS	Delay (s)	LOS
1.	Hope Street & 12th Street	15.4	B	11.3	B
2.	Hope Street & Pico Boulevard	11.0	B	18.2	B
3.	Grand Avenue & 12th Street	11.6	B	17.0	B
4.	Grand Avenue & Pico Boulevard	11.2	B	23.7	C

* Average intersection control delay and LOS based on HCM 6th Edition signalized methodology. The HCM signalized methodology calculates the average delay, in seconds, for each vehicle passing through the intersection.

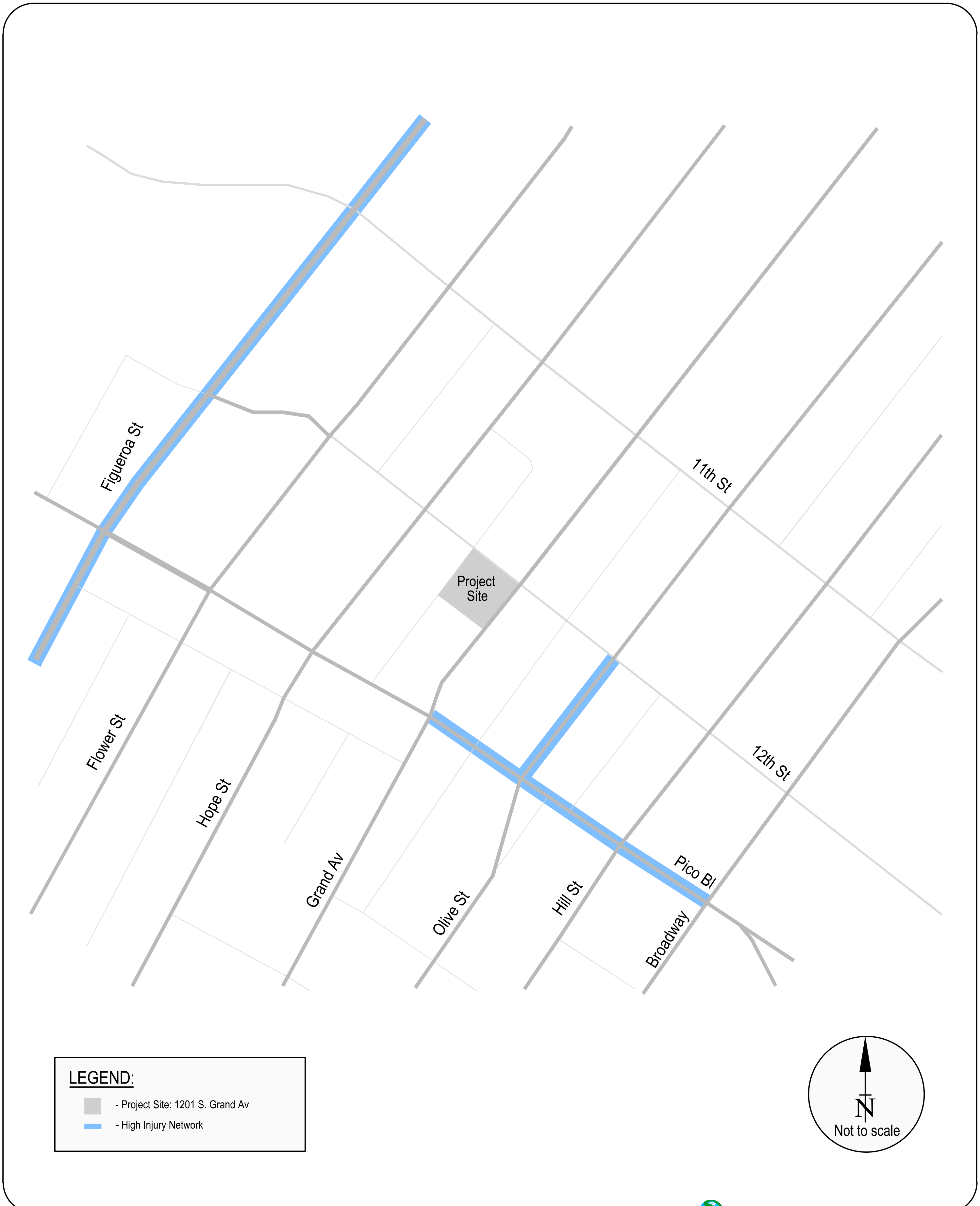

FIGURE 9
CITY OF LOS ANGELES VISION ZERO - HIGH INJURY NETWORK

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- Figueroa Street: Figueroa Street between 1st Street and Imperial Highway is included in High Injury Network.

- Olive Street: Olive Street between 12th Street and Pico Boulevard is included in High Injury Network.

- Pico Boulevard: Pico Boulevard between Grand Avenue and Broadway is included in High Injury Network.

As shown in Figure 9, the Project site is not located along a roadway identified within the City's High Injury Network.

III. CEQA ANALYSIS OF TRANSPORTATION IMPACTS

The analysis of transportation impacts associated with the proposed Project was prepared utilizing the methodologies and assumptions per the City of Los Angeles' *Transportation Assessment Guidelines* (July 2019). The results were then used to assess the potential impact of the Project based on the significance thresholds established by the City of Los Angeles. This chapter includes a summary of the screening criteria, impact criteria, methodology and mitigation (if needed) for each City established threshold.

The CEQA evaluation consists of analysis of transportation impacts for the following City established thresholds for development projects:

- Threshold T-1 – Conflicting with Plans, Programs, Ordinances or Policies
- Threshold T-2.1 – Causing Substantial Vehicle Miles Traveled (VMT), and
- Threshold T-3 – Substantially Increasing Hazards Due to a Geometric Design Feature or Incompatible Use.

Additionally, the section includes evaluation of a freeway safety analysis.

THRESHOLD T-1 – CONFLICTING WITH PLANS, PROGRAMS, ORDINANCES OR POLICIES

Per the City's Transportation Assessment Guidelines, "*The City of Los Angeles aims to achieve an accessible and sustainable transportation system that meets the needs of all users. The City's adopted transportation-related plans and policies affirm that streets should be safe and convenient for all users of the transportation system, including pedestrians, bicyclists, motorists, public transit riders, disabled persons, senior citizens, children, and movers of commercial goods. Therefore, the transportation requirements and mitigations for proposed developments should be consistent with the City's transportation goals and policies.*

Specifically, proposed projects shall be analyzed to identify potential conflicts with adopted City plans and policies and, if there is a conflict, improvements that prioritize access for and improve the comfort of people walking, bicycling, and riding transit in order to provide safe and convenient streets for all users should be identified. Projects designed to encourage sustainable travel help to reduce vehicle miles traveled. This section provides project criteria to identify which projects must check for consistency with major City plans and policies, and provides updated references that should be consulted to evaluate how proposed projects and plans relate to adopted City projects and plans."

Screening Criteria

If the project requires a discretionary action, and the answer is yes to any of the following questions, further analysis will be required to assess whether the proposed project would negatively affect existing pedestrian, bicycle, or transit facilities:

- *Does the project require a discretionary action?*
    - Project Response: Yes. The Project requires a discretionary action.
- *Would the project generate a net increase of 250 or more daily vehicle trips?*
    - *For the purpose of screening for daily vehicle trips, a proposed project's daily vehicle trips are estimated using the VMT Calculator tool or the most recent edition of the ITE Trip Generation Manual.*
    - *TDM strategies are not to be considered for the purposes of screening.*
    - *If existing land uses are present on the project site or there were previously terminated land uses that meet the criteria for trip credits, the daily vehicle trips generated by the existing or qualified terminated land uses are to be estimated using the VMT Calculator tool and subtracted from the Project's daily vehicle trips to determine the increase in daily vehicle trips.*
    - Project Response: Yes. The Project is estimated to generate a total of 1,309 daily trips.
- *Is the project proposing to, or required to make any voluntary or required, modifications to the public right-of-way (i.e., street dedications, reconfigurations of curb line, etc.)?*
    - Project Response: Yes. The Project would provide an easement of 3 feet from the southerly property line to approximately 120 feet north, and increased easement

north of that location along the building frontage. This would allow for a 20-foot wide sidewalk along the Project's Grand Avenue frontage. The Project would provide a 2-foot dedication along its 12th Street frontage. The sidewalk along the Project's 12th Street frontage would be widened to the required dimension of 12 feet. The Project would provide 15 feet by 15 feet corner dedication, per Los Angeles BOE requirements. However, the Project is not proposing to, or required to make any voluntary or required, modifications to the public right-of-way for street dedications or reconfigurations of curb lines.

- *Is the project on a lot that is 0.5-acre or more in total gross area, or is the project's frontage along a street classified as an Avenue or Boulevard (as designated in the City's General Plan), 250 linear feet or more, or is the project's building frontage encompassing an entire block along a street classified as an Avenue or Boulevard by the City's General Plan?*
    - <u>Project Response</u>: Yes. The Project is on a 0.584-acre lot.

Based on the responses to the screening criteria, the Project is required to assess whether the project would conflict with an adopted program, policy, plan, or ordinance that is adopted to protect the environment. In general, transportation policies or standards adopted to protect the environment are those that support multimodal transportation options and a reduction in VMT.

<u>Impact Criteria</u>

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 threshold test is conducted to assess whether a project would conflict with an adopted program, policy, plan, or ordinance that is adopted to protect the environment. In general, transportation policies or standards adopted to protect the environment are those that support multimodal transportation options and a reduction in VMT. Conversely, a project would not be shown to result in an impact merely based on whether a project would not implement a particular program, plan, policy, or ordinance. Many of these programs must be implemented by the City itself over time, and over a broad area, and it is the intention of this threshold test to ensure that proposed development projects and plans do not preclude the City from implementing adopted programs, plans and policies.

<u>Methodology</u>

The following includes the methodology for analyzing Threshold T-1, per the City's Transportation Assessment Guidelines:

- *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 Applicant should review the documents and ordinances listed in the City's Transportation Assessment Guidelines, Table 2.1-1 - City Documents that Establish the Regulatory Framework, for City plans, policies, programs, ordinances and standards relevant to determining project consistency. The City's Transportation Assessment Guidelines, Table 2.1-2: Questions to Determine Project Applicability to Plans, Policies and Programs, lists questions that shall be answered in order to help guide whether the project conflicts with City circulation system policies. A 'yes' or 'no' answer to these questions does not determine a conflict. Rather, as indicated in Table 2.1-2, the Project Applicant shall review relevant policies and programs corresponding to the questions to assess whether the proposed project precludes the City's implementation of any adopted policy and/or program.*

- *If vacation of a public right-of-way, or relief from a required street dedication is sought as part of a proposed project, an assessment should be made as to whether the right-of-way in question is necessary to serve a long-term mobility need, as defined in the Mobility Plan 2035, transportation specific plan, or other planned improvement in the future.*

Cumulative Impacts. *The analysis of cumulative impacts may be quantitative or qualitative. Each of the plans, ordinances and policies reviewed to assess potential conflicts with proposed projects should be reviewed to assess cumulative impacts that may result from the proposed project in combination with other development projects in the study area.*

Consider whether there would be a significant impact to which both the proposed project and other projects contribute. For instance, a cumulative impact could occur if the project as well as other future development projects located on the same block were to preclude the City's ability to serve transportation user needs as defined by the City's transportation policy framework.

Analysis/Project Impact

Utilizing the methodology described above, Table 7 indicates the responses to the list of questions provided in the City's *Transportation Assessment Guidelines Table 2.1-2*. The table includes two sections with lists of questions. The first section includes questions regarding "*Existing Plan Applicability*", while the second section includes questions regarding "*Access: Driveways and Loading*". The Project responses to these questions, shown in the last column of Table 7, have been prepared based on the Project Site Plan's review and consideration of specific elements detailed in the planning and policy documents referenced in the *Table 2.1-2*. The following includes a summary of the Project's consistency with each plan:

- Los Angeles Municipal Code Section 12.37: Waivers of Dedications and Improvement – As indicated in Table 7, the Project site is a corner lot, located at the south-west corner of S. Grand Avenue (Modified Avenue II)/W. 12th Street (Modified Collector). Per ZIMAS, Project site is zoned R5. The Project does not 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. Therefore, the Project is consistent with Los Angeles Municipal Code Section 12.37: Waivers of Dedications and Improvement.

- City of Los Angeles' *Mobility Plan 2035 – Mobility Plan 2035* provides the policy foundation for achieving a transportation system that balances the needs of all road users. The Plans five goals includes "Safety First, Access for all Angelenos, World Class Infrastructure, Collaboration, Communication, and Informed Choices, and Clean Environments & Healthy Communities". As indicated in Table 7, the Project has been found to be consistent with the policies of the *Mobility Plan 2035.* More specifically, the Project is within the Pedestrian Enhanced Network and Bicycle Enhance Network. It is identified as a Tier 4 Transit Oriented Community. The Project does not propose paving, narrowing or shifting existing parkway. The Project is providing 18 short-term bicycle racks on Grand Avenue along the Project's frontage, as well as 156 long term bicycle spaces. The Project does not create a cul-de-sac and is not located adjacent to an existing cul-de-sac. The Alley will provide the primary access to the Project site via two driveways. The driveways and loading area will be designed consistent with the *Mobility Plan 2035.* Lastly, the Project will be providing the required sidewalk widths along the Project's Grand Avenue and 12th Street frontages, consistent with the *Mobility Plan 2035* and the City's *Downtown Design Standards*.

TABLE 7

CEQA ANALYSIS THRESHOLD T-1 - RESPONSE TO *TABLE 2.1-2: QUESTIONS TO DETERMINE PROJECT APPLICABILITY TO PLANS, POLICIES AND PROGRAMS*

No.	Guiding Questions	Relevant Plans, Policies, and Programs	Supporting/Complementary City Plans, Policies, and Programs to Consult	Project Response
Existing Plan Applicability				
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? (screening question)	LAMC Section 12.37		No. Note: 1. The Project site is a corner lot, located at the south-west corner of S. Grand Avenue (Modified Avenue II)/W. 12th Street (Modified Collector). 2. Per ZIMAS, Project site is zoned R5.
2.	Is project site along any network identified in the City's Mobility Plan?	MP 2.3 through 2.7		Yes. The Project site is included within: 1. Bicycle Enhanced Network - Tier 1 Protected Bicycle Lanes: Grand Avenue from Wilshire Boulevard to Washington Boulevard 2. Pedestrian Enhanced Network - Pedestrian Segments: Grand Avenue from Cesar Estrada Chavez Avenue to 39th Street
3.	Are dedications or improvements needed to serve long-term mobility needs identified in the Mobility Plan 2035?	MP - Street Classifications; MP - Street Designations and Standard Roadway Dimensions	MP - 2.17 Street Widenings	Yes. The Project is located on the south-west corner of Grand Avenue/12th Street. Grand Avenue is classified as a Modified Avenue II. Per the City's Mobility Plan 2035, the designated street dimensions for a Modified Avenue II is 90-foot roadway. In other words, 28-foot half roadway and 17-foot sidewalk. Grand Avenue along the property line has a half roadway of 28 feet and a 17-foot sidewalk. The Project is providing a 3-feet easement along its Grand Avenue frontage to provide a 20-foot sidewalk. The Project is also providing a 15 feet by 15 feet corner dedication. 12th Street is classified as a Modified Collector with a street dimension of 40-feet. 12th Street has approximately 40-foot curb to curb with approximately 10 feet sidewalks. The Project is providing a 2' dedication along the property line on the south side of 12th Street along its frontage to provide a 12-foot sidewalk/parkway.
4.	Does the project require placement of transit furniture in accordance with City's Coordinated Street Furniture and Bus Bench Program?			No. There are no bus stops along the Project frontage.
5.	Is project site in an identified Transit Oriented Community (TOC)?	MP - TEN; MP - PED; MP - BEN; TOC Guidelines		Yes. The Project site is identified as Transit Oriented Community - Tier 4.
6.	Is project site on a roadway identified in City's High Injury Network?	Vision Zero	Mobility Plan 2035	No. The Project is not located along a roadway identified in the City's High Injury Network.
7.	Does project propose repurposing existing curb space? (Bike corral, car-sharing, parklet, electric vehicle charging, loading zone, curb extension, etc.)	MP - 2.1 Adaptive Reuse of Streets; MP - 2.10 Loading Areas; MP - 3.5 Multi-Modal Features; MP - 3.8 Bicycle Parking; MP - 4.13 Parking and Land Use Management; MP - 5.4 Clean Fuels and Vehicles	MP - 2.3 Pedestrian Infrastructure; MP - 2.4 Neighborhood Enhanced Network; MP - 3.2 People with Disabilities; MP - 4.1 New Technologies; MP 5.1 Sustainable Transportation; MP - 5.5 Green Streets	No. The Project does not propose repurposing existing curb space.
8.	Does project propose narrowing or shifting existing sidewalk placement?	MP 2.3 Pedestrian Infrastructure; MP 3.1 - Access for All; MP -PED; MP - ENG 19; MP 2.17 Street Widenings	Healthy LA; Vision Zero; Sustainability pLAn	No. The Project does not propose paving, narrowing or shifting existing sidewalk placement.
9.	Does project propose paving, narrowing, shifting or removing an existing parkway?	MP - 5.5 Green Streets; Sustainability pLAn		No. The Project does not propose paving, narrowing or shifting existing parkway.
10.	Does project propose modifying, removing or otherwise affect existing bicycle infrastructure? (ex: driveway proposed along street with bicycle facility)	MP - BEN; MP - 4.15 Public Hearing Process	Vision Zero	No. The Project is providing short-term bicycle racks on Grand Avenue along the Project's frontage.
11.	Is project site adjacent to an alley? If yes, will project make use of, modify, or restrict alley access?	MP - 3.9 Increased Network Access; MP - ENG.9; MP - PL.1; MP - PL.13; MP - PS.3		Yes. The project site is adjacent to an alley. The Alley will provide the primary access to the Project site via two driveways. The Project will not modify or restrict alley access.

TABLE 7 (continued)

CEQA ANALYSIS THRESHOLD T-1 - RESPONSE TO *TABLE 2.1-2: QUESTIONS TO DETERMINE PROJECT APPLICABILITY TO PLANS, POLICIES AND PROGRAMS*

No.	Guiding Questions	Relevant Plans, Policies, and Programs	Supporting/Complementary City Plans, Policies, and Programs to Consult	Project Response
12.	Does project create a cul-de-sac or is project site located adjacent to existing cul-de-sac? If yes, is cul-de-sac consistent with design goal in Mobility Plan 2035 (maintain through bicycle and pedestrian access)?	MP - 3.10 Cul-de-sacs		No. The Project does not create a cul-de-sac and is not located adjacent to an existing cul-de-sac.
Access: Driveways and Loading				
13.	Does project site introduce a new driveway or loading access along an arterial (Avenue or Boulevard)?	MP - PL.1; MP - PK.10, CDG 4.1.02	Vision Zero	No. The adjacent alley will provide primary access to the Project site.
14.	If yes to 13, Is a non-arterial frontage or alley access available to serve the driveway or loading access needs?	MP - PL.1; MPP 321	Vision Zero	N/A
15.	Does project site include a corner lot? (avoid driveways too close to intersections)	CDG 4.1.01		Yes. The Project site is included on a corner lot. Consistent with CDG Guideline 2, the Project's parking and driveways are located toward the rear or side of buildings and away from the public right-of-way and oriented as far from the corner as possible.
16.	Does project propose driveway width in excess of City standard?	MPP Sec. 321	Vision Zero, Sustainability pLAn, MP - PED, MP - BEN, CDG 4.1.04	No. The Project is proposing two driveways along the alley measuring no more than 30' wide.
17.	Does project propose more driveways than required by City maximum standard?	MPP - Sec No. 321 Driveway Design	Vision Zero, MP, Healthy LA	No. The Project does not propose more driveways than required by City maximum standard.
18.	Are loading zones proposed as a part of the project?	MP - 2.10 Loading Areas; MP - PK.1; MP - PK.7; MP - PK.8; MPP 321		No. The Project is not proposing loading zones on public rights-of-way. The Project is providing a loading area on site accessible from the alley. All loading/unloading will occur on site.
19.	Does project include "drop-off" zones or areas? If yes, are such areas located to the side or rear of the building?	MP - 2.10 Loading Areas		No.
20.	Does project propose modifying, limiting/restricting, or removing public access to a public right-of-way (e.g., vacating public right-of-way?)	MP - 2.3 Pedestrian Infrastructure; MP - 3.9 Increased Network Access		No. The Project is not proposing to modify, limiting/restricting or removing public access to a public right-of-way.

- Vision Zero – The Project is not located along a roadway identified in the City's High Injury Network. However, the Project has taken measures to align with Vision Zero policies. As such, the Project does not propose paving, narrowing or shifting existing sidewalk placement. The Project is providing short-term bicycle racks on Grand Avenue along the Project's frontage. The adjacent alley will provide primary access to the Project site.

- City Design Guidelines (CDG) – The Project site is included on a corner lot. Consistent with CDG Guideline 2, the Project's parking and driveways are located toward the rear or side of buildings and away from the public right-of-way and oriented as far from the corner as possible. The adjacent alley will provide primary access to the Project site and the Project does not introduce a new driveway or loading access along an arterial (Avenue or Boulevard).

- LADOT's Manual of Policies and Procedures Section 321: Driveway Design - Per LADOT's Manual of Policies and Procedures, Section 321, it is recommended that two-way driveways serving multi-family and commercial uses are no more than 30 feet in width. Consistent with Section 321, the Project's driveway will be installed according to LADOT standards. The Project is proposing two driveways along the alley measuring no more than 30' wide. The Project does not propose more driveways than required by City maximum standard.

- *Designing A Healthty LA – Designing A Healthy LA* emphasizing a shift from the current primary mobility mode, single-passenger vehicles, to favoring multiple modes of mobility, including rail, bus, bikes, and walking. This document contains recommendations that affect the physical design of the City including walkability, bikeability, active transit and public open space. A brief summary of these recommendations include: sidewalks that provide for a safe pedestrian mobility route, pedestrian amenities to create a pedestrian friendly environment; visual interest promotes pedestrian activity; bike networks comprised of a variety of types of bike paths for the different conditions needed throughout Los Angeles; safer bike routes to attract more users and limit injuries; bike parking to accommodate long-term and short-term use; transit stops incorporating adequate facilities to ensure that the user has a positive experience; appropriate land use and activity to support transit bolsters functionality; and strengthening the relationship and connectivity between multiple modes of transportation to increase its functionality.

  In alignment with *Designing A Healthy LA*, the Project does not propose paving, narrowing or shifting existing sidewalk placement. Nor does the Project propose more driveways than required by City maximum standard. Therefore, the Project does not obstruct the policies and standard of the *Designing A Healthy LA*.

- *Sustainability pLAn 2019* – Mobility goals of *Substainablity pLAn 2019* include increasing the percentage of all trips made by walking, biking, micro-mobility / matched rides or transit; reduce VMT per Capita; and Ensure Los Angeles is prepared for Autonomous Vehicles (AV) by the 2028 Olympic and Paralympic Games. The Project does not propose paving, narrowing or shifting existing sidewalk placement. Therefore, the Project does not obstruct the policies and standard of the *Sustainability pLAn 2019*.

- *Transit Oriented Communities Affordable Housing Incentive Program Guidelines (TOC Guidelines)* – The *TOC Guidelines* provide the eligibility standards, incentives, and other necessary components of the TOC Program consistent with LAMC 12.22 A.31. The Project site is identified as Transit Oriented Community - Tier 4 and when applicable the Project will be consistent with *TOC Guidelines*.

Based on the responses to the questions and review of relevant policies and programs corresponding to the questions to assess whether the proposed project precludes the City's implementation of any adopted policy and/or program, the Project generally conforms with, and does not obstruct or impede the City's development policies and standards generally considered to be consistent. Further, the Project does not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle, and pedestrian facilities. Therefore, the Project does not cause a significant impact relative to Threshold T-1.

Cumulative Impact

It was observed that there are two related projects located along the same block as the proposed Project. Based on a review of the site plans for these related projects and those of the Project, it was observed that cumulatively, they generally conform with and do not obstruct or impede the City's development policies and standards. Further, cumulatively the Project and related projects do not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle, and pedestrian facilities. Therefore, the Project does not cause a cumulative significant impact relative to Threshold T-1.

THRESHOLD T-2.1 – CAUSING SUBSTANTIAL VEHICLE MILES TRAVELED (VMT)

As cited in the City's *Transportation Assessment Guidelines, "The Governor's Office of Planning and Research (OPR) issued proposed updates to the CEQA guidelines in November 2017 and an accompanying technical advisory guidance in April 2018 ("OPR Technical Advisory") that amends the Appendix G question for transportation impacts to delete reference to vehicle delay and level of service and instead refer to Section 15064.3, subdivision (b)(1) of the CEQA Guidelines asking if the project will result in a substantial increase in Vehicle Miles Travelled (VMT).*

For land use projects, the intent of this threshold is to assess whether a land use project or plan causes substantial vehicle miles traveled. The Los Angeles Mobility Plan 2035 sets forth the following objective, regarding VMT:

- Decrease VMT per capita by 5% every five years [from 2015 baseline conditions], to 20% by 2035.

Accordingly, the City set new significance criteria for transportation impacts based on VMT for land use projects and plans in accordance with the amended Appendix G question. The City has established the following screening and impact criteria for Threshold T-2.1. The City's criteria are based on the OPR technical advisory but reflect local considerations.

<u>Screening Criteria</u>

The screening and impact evaluation should be conducted for the following types of development projects:

- Residential – Single-family housing, multi-family housing, and affordable housing.
- Office – General office and medical office. Light industrial, manufacturing, warehousing/ self-storage, K-12 schools, college/university, and hotel/motel land uses should be treated as office for screening and analysis.
- Retail – General retail, furniture store, pharmacy/drugstore, supermarket, bank, health club, restaurant, auto repair, home improvement superstore, discount store, and movie theater.

If the project requires a discretionary action, and the answer is no to either T-2.1-1 or T-2.1-2, further analysis will not be required for Threshold T-2.1, and a "no impact" determination can be made for that threshold:

- *Does the project require a discretionary action?*

    - Project Response: Yes. The Project requires a discretionary action.

- T-2.1-1: Would the project generate a net increase of 250 or more daily vehicle trips?
    - *For the purpose of screening for daily vehicle trips, a proposed project's daily vehicle trips should be estimated using the VMT Calculator tool or the most recent edition of the ITE Trip Generation Manual.*
    - *TDM strategies should not be considered for the purpose of screening.*
    - *If existing land uses are present on the project site or there were previously terminated land uses that meet the criteria for trip credits, the daily vehicle trips generated by the existing or qualified terminated land uses can be estimated using the VMT Calculator tool and subtracted from the Project's daily vehicle trips to determine the increase in daily vehicle trips*.

    - Project Response: Yes. The Project is estimated to generate a total of 1,309 net daily trips.

- *T-2.1-2: Would the project generate a net increase in daily VMT?*
    - *For the purpose of screening for VMT, a project's daily VMT should be estimated using the VMT Calculator tool or the City's Travel Demand Forecasting (TDF) model.*
    - *TDM strategies should not be considered for the purpose of screening.*
    - *If existing land uses are present on the project site or there were previously terminated land uses that meet the criteria for trip credits, the daily VMT generated by the existing or qualified terminated land uses can be estimated using the VMT Calculator tool and subtracted from the Project's daily VMT to determine the increase in daily VMT.*

    - Project Response: Yes. The Project is estimated to generate a total of 7,185 net daily VMT.

In addition to the above screening criteria, the portion of, or the entirety of a project that contains small-scale or local serving retail uses are assumed to have less than significant VMT impacts. If the answer to the following question is no, then that portion of the project meets the screening criteria and a no impact determination can be made for the portion of the project that contains *retail uses. However, if the retail project is part of a larger mixed-use project, then the remaining portion of the project may be subject to further analysis in accordance with the above screening criteria. Projects that include retail uses in excess of the screening criteria would need to evaluate the entirety of the project's vehicle miles traveled, as specified in Section 2.2.4.*

- *If the project includes retail uses, does the portion of the project that contain retail uses exceed a net 50,000 square feet?*
  - o <u>Project Response</u>: No, the Project does not contain retail uses exceeding a net of 50,000 square feet. The Project includes 7,100 square feet of retail/restaurant use.

Based on the responses to the screening criteria, the Project is required to assess whether the Project's proposed land uses cause substantial vehicle miles traveled.

<u>Impact Criteria</u>

Threshold T-2.1: For a land use project, would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1)?

Per impact criteria established the City, development projects will have a potential impact if the project meets the following:

- For residential projects, the project 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 the project is located. (see table below)

- For office projects, the project would generate work VMT per employee exceeding 15% below the existing average work VMT per employee for the APC in which the project is located. (see table below)

- For regional serving retail projects, the project would result in a net increase in VMT.

- For other land use types, VMT impacts measured for the work trip element result in metric that exceeds the criteria for office projects above.

The City of Los Angeles' *Transportation Assessment Guidelines Table 2.2-1* provides the following significance thresholds based on the location of a project within a specific Area Planning Commission (APC) area:

VMT Impact Criteria (15% Below APC Average)

Area Planning Commission	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	15.2
South LA	6.0	11.6
South Valley	9.4	11.6
West LA	7.4	11.1

Source: Table 2.2-1, City of Los Angeles Transportation Assessment Guidelines, July 2019.
Note: The Daily Household VMT per Capita and Daily Work VMT per Employee numbers in the table incorporates a 15% reduction of the APC Average Daily Household VMT per Capita and Average Daily Work VMT per Employee numbers.

The Project is located within the Central APC area. Based on the City's VMT impact criteria table, the significance thresholds for project impact are daily household VMT per capita of 6.0 and the daily work VMT per employee of 7.6.

Methodology

The following includes the methodology for analyzing the Project's impacts relative to Threshold T-2.1, per the City's Transportation Assessment Guidelines:

- *Residential Projects - Daily vehicle trips, daily VMT, and daily household VMT per capita for residential projects should be estimated using the VMT Calculator tool. Transportation demand management strategies to be included as project design features should be considered in the estimation of a project's daily vehicle trips and VMT.*

- *Redevelopment Projects Near Transit that Reduce Total Housing Supply - For projects that are located within a one-half mile of a fixed-rail transit station and result in a net* *decrease of housing units, the project should be evaluated to determine if aggregate VMT impacts may result from existing residents that are displaced to higher VMT areas. While conclusive findings of displacement impacts on VMT is uncertain, methodologies will continue to evolve. The analysis should indicate if there is available housing supply near the project to meet the needs of existing residents. If replacement housing is shown to be not available within the project area, the VMT analysis should include the additional average daily VMT of the existing residents that would be expected to be displaced in the numerator of the total VMT per capita assessed for the project.*

- *Office Projects - Daily vehicle trips, daily VMT, and daily work VMT per employee for office projects should be estimated using the VMT Calculator tool. A guide to using the tool and be found here. Transportation demand management strategies to be included as project design features should be considered in the estimation of a project's daily vehicle trips and VMT.*

- *Regional Serving Retail Projects - Retail projects should be evaluated to determine whether the project would result in a net increase in total VMT. Local-serving retail development tends to shorten trips and reduce VMT whereas regional-serving retail development can lead to substitution of longer trips for shorter ones and could increase VMT.*

- *Mixed-Use Projects - The project VMT impact should be considered significant, if any one (or all) of the project land uses exceed the impact criteria for that particular land use, taking credit for internal capture. In such cases, mitigation options that reduce the VMT generated by any or all of the land uses could be considered.*

Cumulative Impacts*.* *Analyses should consider both short- and long-term project effects on VMT. Short-term effects will be evaluated in the detailed project-level VMT analysis described above. Long-term, or cumulative, effects will be determined through a consistency check with the SCAG RTP/SCS. The RTP/SCS is the regional plan that demonstrates compliance with air quality conformity requirements and GHG reduction targets. As such, projects that are consistent with this plan in terms of development location, density, and intensity, are part of the regional solution for meeting air pollution and GHG goals. Projects that are deemed to be consistent would have a less than significant cumulative impact on VMT. Development in a location where the RTP/SCS does not specify any development may indicate a significant impact on transportation. However, for projects that do not demonstrate a project impact by applying an efficiency-based impact threshold (i.e. VMT per capita or VMT per employee) in the project impact analysis, a less than significant project impact conclusion is sufficient in* *demonstrating there is no cumulative VMT impact. Projects that fall under the City's efficiency-based impact thresholds are already shown to align with the long-term VMT and greenhouse gas reduction goals of SCAG's RTP/SCS.*

Analysis/Project Impact

The Project includes development of up to 312 multifamily dwelling units and approximately 7,100 square feet of high-turnover restaurant use. The Project would provide a total of 352 vehicle parking spaces and 174 bicycle parking spaces (156 long-term spaces and 18 short-term spaces). The existing uses on site includes a three-story, approximately 44,769 square-foot commercial building and an adjacent surface parking lot that would be demolished. Approximately 8,000 square feet of 44,769 square feet of office use is currently occupied.

Utilizing the City's VMT Calculator Tool (V1.2), the VMT analysis for the Project was prepared. The Project's proposed land uses along with the existing land use were input into the City's VMT Calculator Tool. Table 8 presents the results of the Project's VMT analysis. As indicated in the table, the Project would result in a daily VMT of 7,602 and a household VMT per capita of 5.6. Since the Project's resulting household VMT per capita of 5.6 is less than the impact criteria threshold of 6.0, the Project would not cause a significant impact relative to this Threshold T-2.1.

The City of Los Angeles' VMT Calculator (V1.2) worksheets are included Appendix E.

Cumulative Impacts

Per cumulative impact methodology, projects that do not demonstrate a project impact by applying an efficiency-based impact threshold (i.e. VMT per capita or VMT per employee) in the project impact analysis, a less than significant project impact conclusion is sufficient in demonstrating there is no cumulative VMT impact. Projects that fall under the City's efficiency-based impact thresholds are already shown to align with the long-term VMT and greenhouse gas reduction goals of SCAG's RTP/SCS. Therefore, the Project would not cause a cumulative significant impact relative to Threshold T-2.1.

TABLE 8
CEQA ANALYSIS THRESHOLD T-2.1 - PROJECT VMT SUMMARY

	Size		Daily VMT	Household VMT per Capita	Household VMT Impact (6.0)?	Work VMT per Employee	Work VMT Impact (7.6)?
Project Land Uses							
Apartments	312	d.u.	7,602	5.6	No	N/A	No
High-Turnover Restaurant	7,100	s.f.					

*VMT result from City of Los Angeles' VMT Calculator (version 1.2).

THRESHOLD T-3 – SUBSTANTIALLY INCREASING HAZARDS DUE TO GEOMETRIC DESIGN FEATURE OR INCOMPATIBLE USE

As stated in the City's *Transportation Assessment Guidelines,* "*Impacts regarding the potential increase of hazards due to a geometric design feature generally relate to the design of access points to and from the project site, and may include safety, operational, or capacity impacts. Impacts can be related to vehicle/vehicle, vehicle/bicycle, or vehicle/pedestrian conflicts as well as to operational delays caused by vehicles slowing and/or queuing to access a project site. These conflicts may be created by the driveway configuration or through the placement of project driveway(s) in areas of inadequate visibility, adjacent to bicycle or pedestrian facilities, or too close to busy or congested intersections. Evaluation of access impacts require details relative to project land use, size, design, location of access points, etc. These impacts are typically evaluated for permanent conditions after project completion but can also be evaluated for temporary conditions during project construction.*"

Screening Criteria

If the project requires a discretionary action, and the answer is 'yes' to any of the following questions, further analysis will be required to assess whether the project would result in impacts due to geometric design hazards or incompatible uses:

- Does the project require a discretionary action?
    - Project Response: Yes. The Project requires a discretionary action.
- Is the project proposing new driveways, or introducing new vehicle access to the property from the public right-of-way?
    - Project Response: Yes. The Project is proposing new driveways along the adjacent alley located on the west side of the Project site.
- Is the project proposing to, or required to make any voluntary or required, modifications to the public right-of-way (i.e., street dedications, reconfigurations of curb line, etc.)?
    - Project Response: Yes. The Project would provide an easement of 3 feet from the southerly property line to approximately 120 feet north, and increased easement north of that location along the building frontage. This would allow for a 20-foot wide sidewalk along the Project's Grand Avenue frontage. The Project would

provide a 2-foot dedication along its 12th Street frontage. The sidewalk along the Project's 12th Street frontage would be widened to the required dimension of 12 feet. The Project would provide 15 feet by 15 feet corner dedication, per Los Angeles BOE requirements. However, the Project is not proposing to, or required to make any voluntary or required, modifications to the public right-of-way for street dedications or reconfigurations of curb lines.

Based on the responses to the screening criteria, the Project is required to evaluate if it substantially increases hazards due to a geometric design feature or incompatible use.

Impact Criteria

Threshold T-3: Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Per impact criteria established by the City, preliminary project access plans are to be reviewed in light of commonly-accepted traffic engineering design standards to ascertain whether any deficiencies are apparent in the site access plans which would be considered significant. The determination of significance shall be on a case-by-case basis, considering the following factors:

- *The relative amount of pedestrian activity at project access points.*
- *Design features/physical configurations that affect the visibility of pedestrians and bicyclists to drivers entering and exiting the site, and the visibility of cars to pedestrians and bicyclists.*
- *The type of bicycle facilities the project driveway(s) crosses and the relative level of utilization.*
- *The physical conditions of the site and surrounding area, such as curves, slopes, walks, landscaping or other barriers, that could result in vehicle/pedestrian, vehicle/bicycle, or vehicle/vehicle impacts.*
- *The project location, or project-related changes to the public right-of-way, relative to proximity to the High Injury Network or a Safe Routes to School program area.*
- *Any other conditions, including the approximate location of incompatible uses that would substantially increase a transportation hazard.*

Methodology

The following includes the methodology for analyzing the Project's impacts relative to Threshold T-3, per the City's Transportation Assessment Guidelines:

Project Impacts*. For vehicle, bicycle and pedestrian safety impacts, review all project access points, internal circulation, and parking access from an operational and safety perspective (for example, turning radii, driveway queuing, line of sight for turns into and out of project driveway[s]). Where project driveways would cross pedestrian facilities or bicycle facilities (bike lanes or bike paths), consider operational and safety issues related to the potential for vehicle/pedestrian and vehicle/bicycle conflicts and the severity of consequences that could result. In areas with moderate to high levels of pedestrian or bicycle activity, the collection of pedestrian or bicycle count data may be required.*

Cumulative Impacts. *Review project site access plans for related projects with access points proposed along the same block(s) as the proposed project. Determine the combined impact and the project's contribution.*

Analysis/Project Impact

Current access to the Project site is provided by a driveway located along Grand Avenue and a driveway located along the adjacent alley. The Project does not propose any driveways along Grand Avenue and 12th Street. The Project proposes to remove the driveway along Grand Avenue and provide two driveways along an adjacent alley that connects Pico Boulevard and W. 12th Street and beyond, west of the Site. Pico Boulevard and 12th Street would provide access to the Project driveways both via the alley. The Project site plan is provided in Chapter 1, Figure 2.

As stated above, all vehicular access to the Project will be available from two full-access driveways along the adjacent alley on the west side of the Project site. Consistent with LADOT Manual of Policies and Procedures Section 321 – Driveway Design Guidelines, the Project is proposing two driveways along the alley measuring no more than 30' wide. The northerly driveway would provide access to the above-grade parking levels while the southerly driveway would provide access to the subterranean parking levels.

The City of Los Angeles' *Citywide Design Guidelines*, October 24, 2019, suggest that the Project driveway(s) be located as far away from the corner as possible and located potentially towards the side of the building (for a corner lot property), away from public right-of-way and major pedestrian thoroughfares, thereby enhancing walkability and pedestrian network connectivity. The proposed Project driveways are consistent with the Citywide Design Guidelines and enhance pedestrian walkability and safety by removing the existing driveway along Grand Avenue and providing them along the adjacent alley.

Pedestrian access to the Project site would be obtained from Grand Avenue and 12th Street. Grand Avenue currently provides a 17-foot sidewalk (designated width per City of Los Angeles' *Mobility Plan 2035)*. The Project would provide an easement of 3 feet from the southerly property line to approximately 120 feet north, and increased easement north of that location along the building frontage. This would allow for a 20-foot wide sidewalk along the Project's Grand Avenue frontage. Short-term bicycle racks would be provided adjacent to the curb along the Project's Grand Avenue frontage. The Project would provide 15 feet by 15 feet corner dedication, per Los Angeles BOE requirements.

12th Street currently provides a curb-to-curb roadway width of 40 feet and a 10-foot sidewalk along the Project's frontage. Per the City of Los Angeles' *Mobility Plan 2035*, a designated right-of-way width of 64 feet (half ROW of 32 feet) is identified for 12th Street. The Project would provide a 2-foot dedication along its 12th Street frontage. The sidewalk along the Project's 12th Street frontage would be widened to the required dimension of 12 feet. The Project would provide a 5-foot parkway/7-foot sidewalk along its 12th Street frontage.

A bike lane is currently available on the west-side of Grand Avenue along the Project frontage. The removal of the existing site driveway along Grand Avenue removes potential vehicle/bicycle, vehicle/pedestrian and vehicle/vehicle conflicts improving the overall safety along this section of Grand Avenue.

Per impact criteria established the City, preliminary Project access plans were reviewed using acceptable traffic engineering design standards to ascertain whether any deficiencies are apparent in the site access plans that could be considered significant. The following analysis is presented:

- The relative amount of pedestrian activity at project access points.
    - o Project Impact: The Project driveways would be located along the adjacent alley where minimal pedestrian activity is anticipated. No deficiencies are apparent and therefore, not considered significant.
- Design features/physical configurations that affect the visibility of pedestrians and bicyclists to drivers entering and exiting the site, and the visibility of cars to pedestrians and bicyclists.
    - o Project Impact: The Project driveways are located along an adjacent alley located on the west side of the proposed building. Pedestrian activity along the alley is very minimal at the Project access points. Further, the Project is providing a 15 feet by 15 feet corner dedication at the south-west corner of Grand Avenue and 12th Street that would improve visibility to pedestrians and bicyclists. Visibility of potential vehicle/bicycle, vehicle/pedestrian and vehicle/vehicle interactions are also improved. The Project would provide a 2-foot dedication along its 12th Street frontage, providing a 12-foot wide (required width) sidewalk/parkway. The Project design features/physical configurations do not negatively affect the visibility of pedestrians and bicyclists to drivers entering and exiting the site, and the visibility of cars to pedestrians and bicyclists. No deficiencies are apparent and therefore, Project impacts are not considered significant.
- The type of bicycle facilities the project driveway(s) crosses and the relative level of utilization.
    - o Project Impact: An existing driveway along Grand Avenue (where a bicycle lane exists and a Tier 1 Protected Bicycle Lane is proposed) will be removed as part of the Project, thereby removing a driveway crossing a bicycle lane. The Project driveways are located along an adjacent alley, west of the site and do not cross bicycle facilities. No deficiencies are apparent and therefore, Project impacts are not considered significant.
- The physical conditions of the site and surrounding area, such as curves, slopes, walks, landscaping or other barriers, that could result in vehicle/pedestrian, vehicle/bicycle, or vehicle/vehicle impacts.

- Project Impact: No physical conditions of the Project site and surrounding area, such as curves, slopes, walks, landscaping or other barriers, that could result in vehicle/pedestrian, vehicle/bicycle, or vehicle/vehicle impacts have been identified. No deficiencies are apparent and therefore, Project impacts are not considered significant.

- The project location, or project-related changes to the public right-of-way, relative to proximity to the High Injury Network or a Safe Routes to School program area.
    - Project Impact: The Project is not located along any High Injury Network streets nor are any project-related changes to the public right-of-way that would negatively affect Safe Routes to School program area. No deficiencies are apparent and therefore, Project impacts are not considered significant.

- Any other conditions, including the approximate location of incompatible uses that would substantially increase a transportation hazard.
    - Project Impact: No other conditions, including the presence of incompatible uses in the vicinity that would substantially increase a transportation hazard, have been identified. No deficiencies are apparent and therefore, Project impacts are not considered significant.

Based on a review and consideration of the proposed site plan, Project description and the above analysis, the Project would not substantially increase hazards due to a geometric design feature or incompatible uses. Therefore, the Project does not cause a significant impact relative to Threshold T-3.

Cumulative Impacts

A review of the site plans of the related projects in the vicinity and the Project was conducted. It was observed that the combined effects of these related projects and the Project would not substantially increase hazards due to a geometric design feature or incompatible uses. Therefore, the Project would not cause a cumulative significant impact relative to Threshold T-3.

FREEWAY SAFETY ANALYSIS

LADOT has provided an advisory memo, titled, *LADOT Transportation Assessments - Interim Guidance for Freeway Safety Analysis*. Per the Guidance, land use development projects within the City of Los Angeles required to prepare a transportation assessment are also required to conduct a freeway safety analysis. The purpose of the freeway safety analysis under CEQA is to determine if a project may potentially result in off-ramp queuing and differential travel speeds that could constitute a potential safety impact under CEQA. The initial step set forth in LADOT's memo includes the following determination:

- Identify the number of Project trips expected to be added to nearby freeway off ramps serving the site. If the Project adds 25 or more trips to any off ramp in either the morning or afternoon peak hour, then that ramp should be studied for potential queueing impacts as indicated in the Guidance Memo. If the project is not expected to generate more than 25 or more peak hour trips at any freeway off-ramps, then a freeway ramp analysis is not required.

Freeway Safety Evaluation

The nearest freeway off-ramps serving Project site include the I-10 Freeway Eastbound Off-Ramp to Grand Avenue and the I-10 Freeway Westbound Off-Ramp to Los Angeles Street. Utilizing the Project's trip generation estimates and trip distribution, the number of Project trips added to these freeway off ramps during the AM and PM peak hours were determined. Table 9 summarizes the Project trips added to the freeway off ramps. As indicated in the table, the Project adds 2 trips during the AM peak hour and 6 trips in the evening peak hour to the I-10 Freeway Eastbound Off-Ramp to Grand Avenue and adds 3 trips during the AM peak hour and 9 trips in the evening peak hour to the I-10 Freeway Westbound Off-Ramp to Los Angeles Street. Since the Project adds less than 25 trips in the peak hours at the nearby freeway off-ramps, no further freeway safety analysis is required.

TABLE 9
DETERMINATION OF PROJECT TRIPS AT FREEWAY OFF-RAMP LOCATIONS

Project Trip Generation (from Table 10)

	AM Peak Hour			PM Peak Hour		
	IN	OUT	Total	IN	OUT	Total
Residential Net Trip Generation Total	8	57	65	59	25	84
Commercial Net Trip Generation Total*	18	19	37	25	10	35

*Includes existing use trip credit.

Freeway Off-Ramp Screening

	Peak	Residential		Commercial		Overall Total
Off-Ramp	Hour	Project %Inbound	Project Trips	Project %Inbound	Project Trips	Project Trips
I-10 Eastbound Off-Ramp to Grand Avenue	AM	7%	1	6%	1	2
	PM	7%	4	6%	2	6
I-10 Westbound Off-Ramp to Los Angeles Street	AM	11%	1	11%	2	3
	PM	11%	6	11%	3	9

IV. FUTURE TRAFFIC PROJECTIONS

In order to address the non-CEQA assessment of the Project on the local street system, per the City's latest guidelines, estimates of the Existing (2020) with Project traffic volumes and Future Year (2025) traffic volumes both with and without the Project were developed. The traffic generated by the Project was estimated and assigned separately to the street system. The addition of Project traffic and the existing traffic volumes provides traffic volume estimates for the Existing (2020) with Project scenario.

The Future Year (2025) without the Project was first developed including estimates for background growth in area-wide trip making and trips generated by future developments (related projects) in the vicinity of the study area. The Future (2025) without Project traffic represents the cumulative base conditions. Next, the addition of Project traffic and the cumulative base traffic volumes provides traffic volume estimates for the Future Cumulative (2025) plus Project scenario. Each of these future traffic scenarios is described further in this chapter.

PROJECT TRAFFIC VOLUMES

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

Project Trip Generation

Implementation of the Project consists of constructing up to 312 multifamily dwelling units and approximately 7,100 square feet of retail/restaurant use. The site contains an existing three-story, approximately 44,769 square-foot commercial building and an adjacent surface parking lot that would be demolished. Approximately 8,000 square feet of 44,769 square feet of office use is currently occupied.

Utilizing the ITE's *Trip Generation Manual*, 10th Edition and City of Los Angeles' trip rates, the Project's peak hour trip generation was determined. Table 10 presents details of the Project's trip generation including type of use, size, applicable rate and trip generation estimates.

TABLE 10
ESTIMATED PROJECT TRIP GENERATION

	Size	Daily	AM Peak Hour			PM Peak Hour		
			IN	OUT	TOTAL	IN	OUT	TOTAL
Proposed Project								
Apartments	312 d.u.	-	9	63	72	66	28	94
Internal Capture (10%)			*(1)*	*(6)*	*(7)*	*(7)*	*(3)*	*(10)*
High-Turnover Restaurant	7,100 s.f.	-	39	32	71	43	26	69
Internal Capture (10%)			*(4)*	*(3)*	*(7)*	*(4)*	*(3)*	*(7)*
*Transit/Walk Credit (15%)**			*(5)*	*(4)*	*(9)*	*(6)*	*(3)*	*(9)*
*Pass-By Trips (20%)***			*(6)*	*(5)*	*(11)*	*(7)*	*(4)*	*(11)*
Project Trip Generation Total		1,366 [1]	32	77	109	85	41	126
Existing Uses								
Office	8,000 s.f.	57 [1]	6	1	7	1	6	7
Project Net Trip Generation Total		**1,309**	**26**	**76**	**102**	**84**	**35**	**119**
Trip Rates [2]								
Multifamily High-Rise [3]	Trips per d.u.	[1]	12%	88%	0.21	70%	30%	0.19
General Office (ITE Land Use 710)	Trips per 1,000 s.f.	[1]	86%	14%	0.83	17%	83%	0.87
High-Turnover Restaurant (ITE Land Use 932)	Trips per 1,000 s.f.	[1]	55%	45%	9.94	62%	38%	9.77

* Transit/walk trips determined after reduction of internal capture.
** Pass-by trips determined after reduction of internal capture and transit/walk trips.

[1] Project and existing daily trips calculated using the City of Los Angeles' VMT Calculator Tool (version 1.2).
[2] *Trip Generation Manual* , 10th Edition, ITE 2017, unless otherwise noted. For Land Use Code 710-General Office, trip rates for the Dense Multi-Use Urban setting were used. Therefore, no transit/walk adjustments are applied. For Land Use Code 932-High-Turnover Restaurant, trip rates for the General Urban/Suburban setting were used, as no rates are provided for the Dense Multi-Use Urban setting. Transit/walk adjustments were, therefore, only applied to the proposed High-Turnover (Sit-Down) Restaurant land use. Conservatively, high-turnover restaurant use is assumed for the Project and is intended to cover retail uses.
[3] Multifamily High-Rise trip generation rates from *Los Angeles Department of Transportation (LADOT) Transportation Guidelines, Table 3.3-1: Local Trip Generation Rates for Multifamily Mid-Rise and High-Rise Residential Land Uses in Dense Multi-Use Urban Areas,* July 2019. Trip generation rates for Multifamily High-Rise were utilized.

Other calculations within the tables also provide for trip generation reductions from existing use trips, internal capture, transit trip credit and pass-by trips per LADOT's transportation study guidelines.

From Table 10, it can be observed that the Project's trip generation would result in an additional net total of approximately 102 trips during the morning peak hour and 119 trips during the evening peak hour. Utilizing the City of Los Angeles' VMT Calculator Tool (version 1.2), the Project would have a net increase of 1,309 daily trips.

Project Trip Distribution

The geographic distribution for Project trips was assumed to be the following:

- To and From the North: 40% - Residential, 30% - Commercial
- To and From the South: 15% - Residential, 22% - Commercial
- To and From the East: 20% - Residential, 18% - Commercial
- To and From the West: 25% - Residential, 30% - Commercial

Intersection level trip distribution percentages are shown in Figures 10A and 10B for the Project's residential and commercial uses, respectively. Based on these distribution assumptions, location and points of access of the Project driveways, and trip generation estimates from the Project, traffic estimates of Project-only trips were developed. These Project-only trips are presented in Figure 11. It is worth noting that per the City of Los Angeles' *Transportation Assessment Guidelines*, a pass-by trip reduction was not applied to the adjacent intersections.

EXISTING (2020) WITH PROJECT TRAFFIC VOLUMES

Utilizing the Project-only traffic estimates developed for both AM and PM peak hours, traffic forecasts for the Existing (2020) with Project conditions were developed. The Existing (2020) traffic volumes were combined with the Project-only traffic volumes to obtain the Existing (2020) with Project traffic volume forecasts. The Existing (2019) with Project traffic volumes during both AM and PM peak hours are presented in Figure 12.

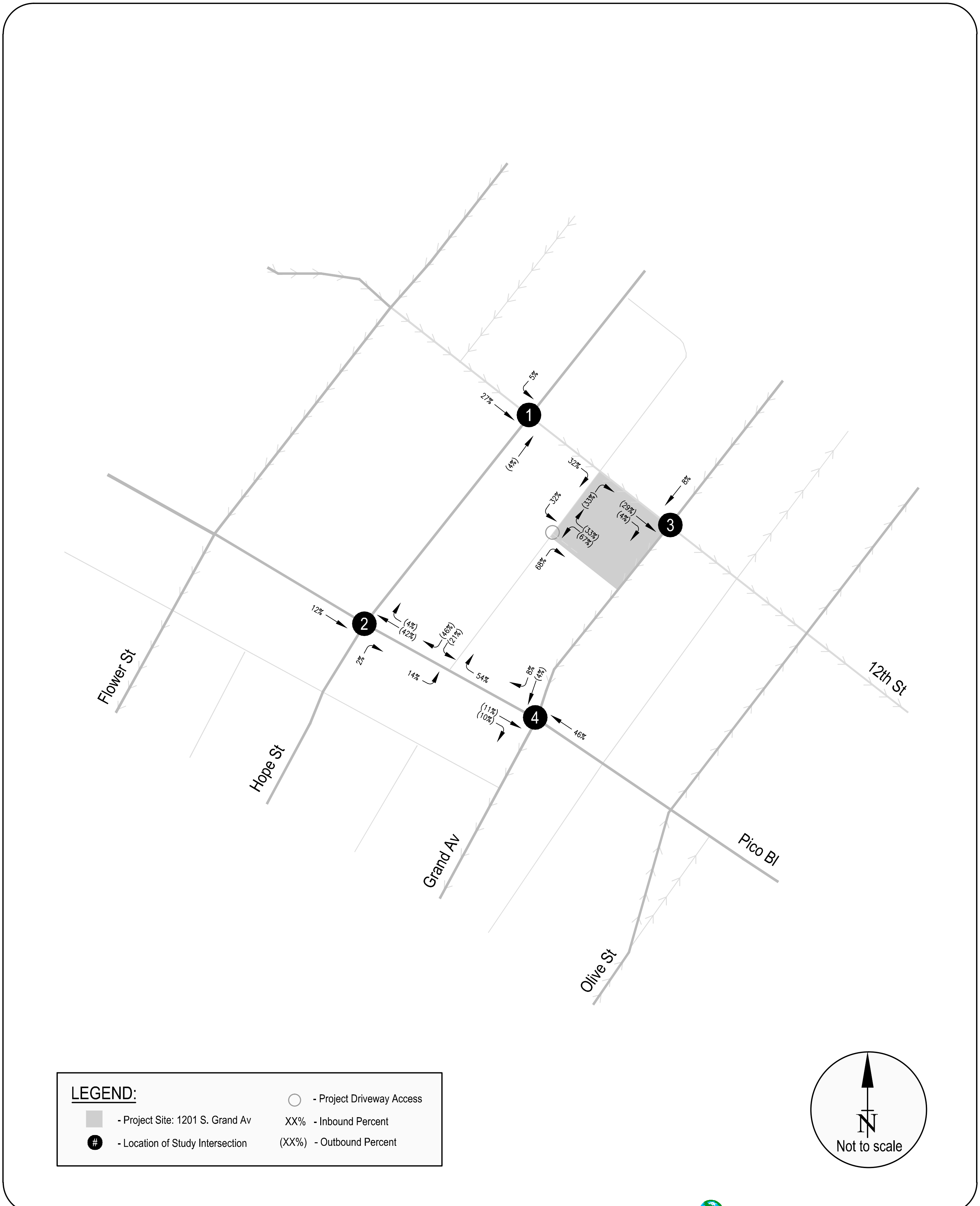

FIGURE 10A
PROJECT TRIP DISTRIBUTION - RESIDENTIAL USES

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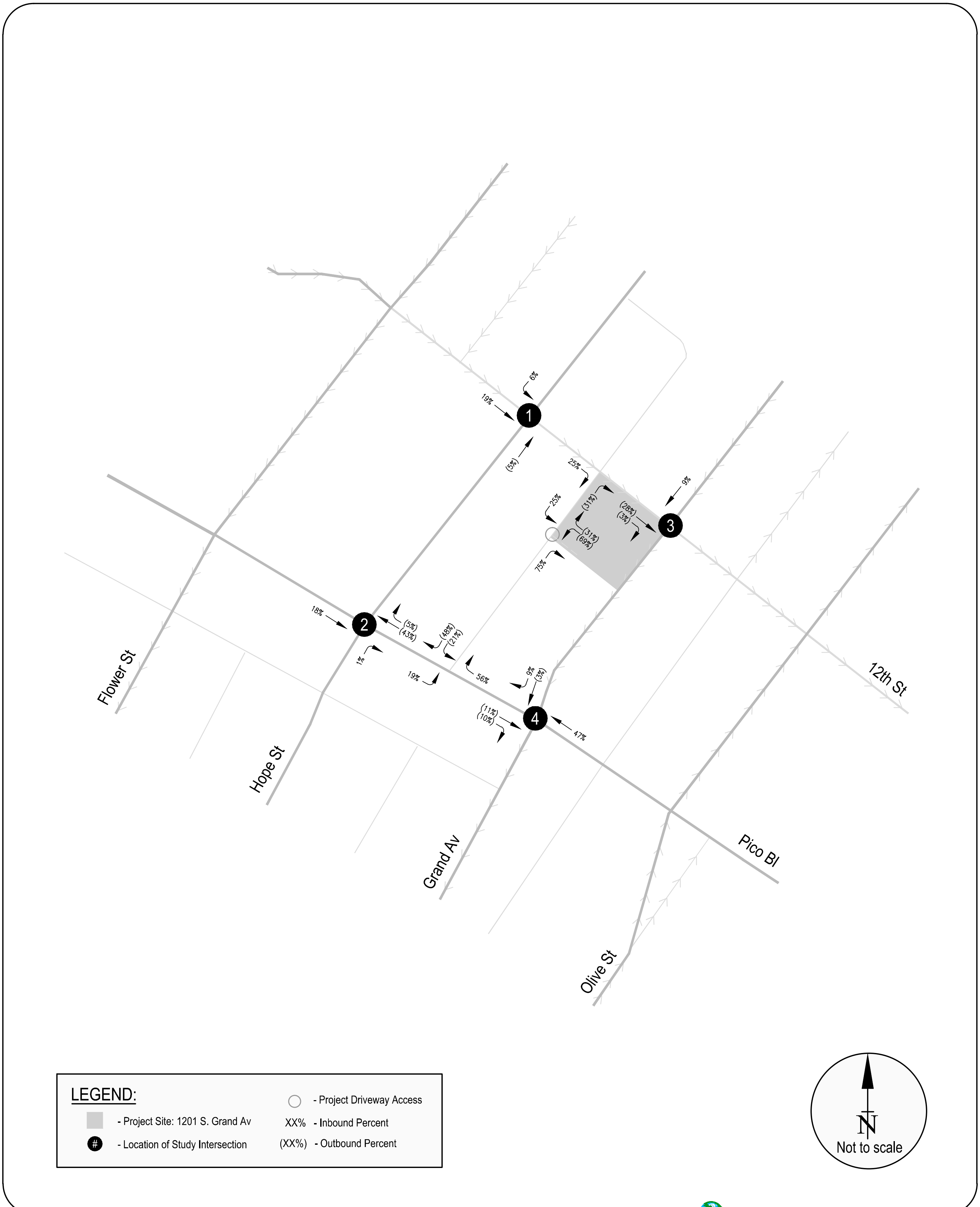

FIGURE 10B
PROJECT TRIP DISTRIBUTION - COMMERCIAL USES

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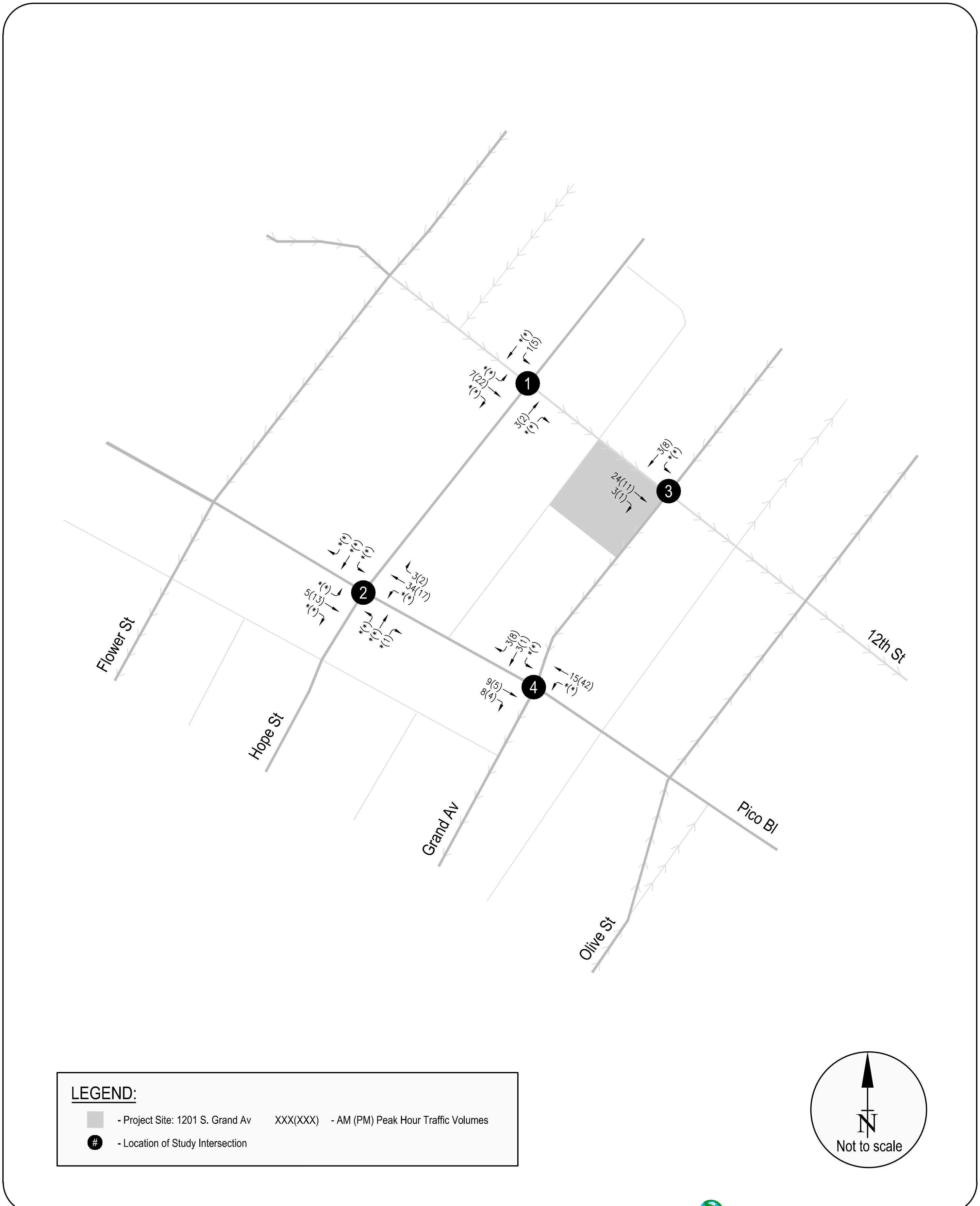

FIGURE 11
PROJECT ONLY - PEAK HOUR TRAFFIC VOLUMES

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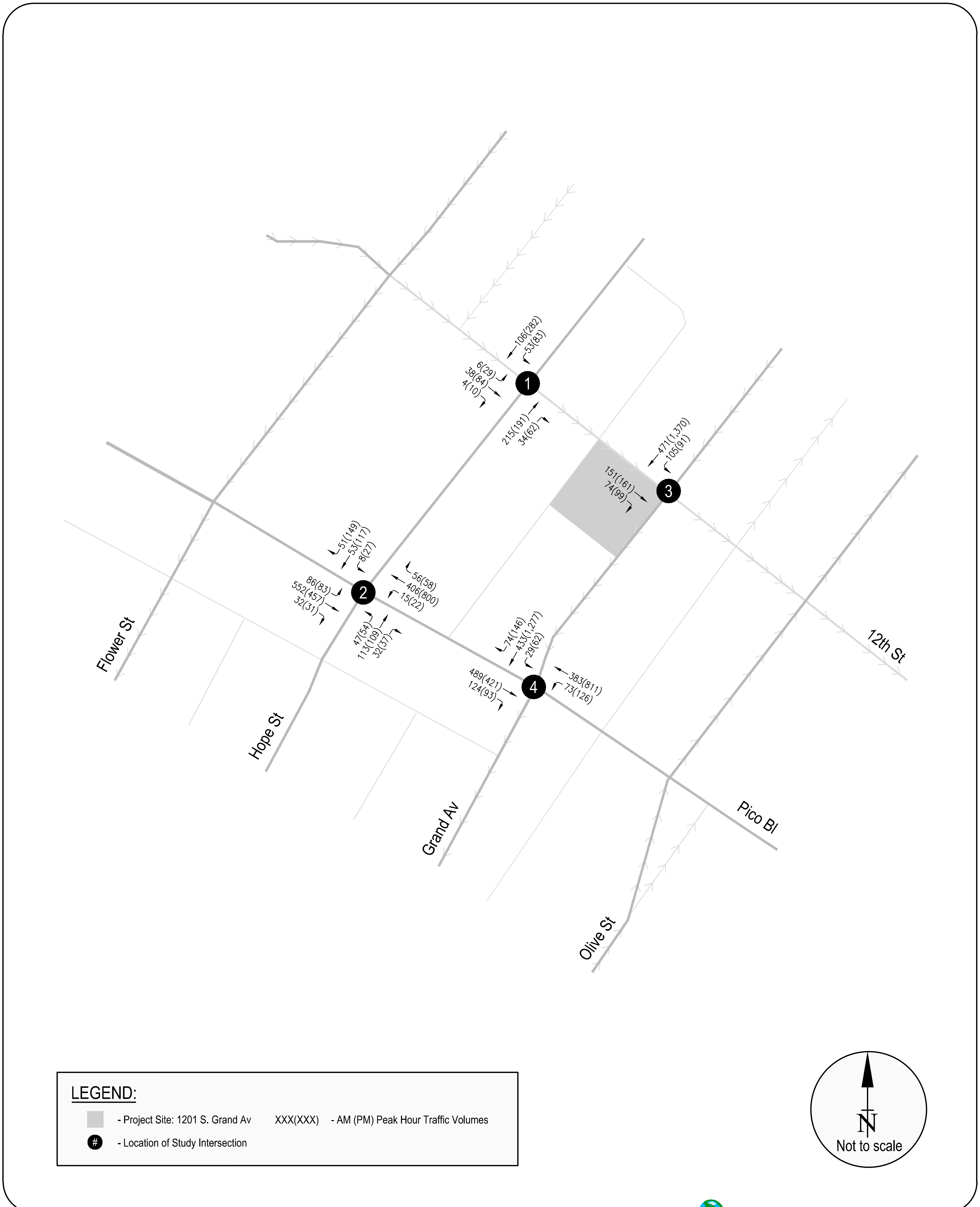

FIGURE 12
EXISTING (2025) PLUS PROJECT CONDITIONS - PEAK HOUR TRAFFIC VOLUMES

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CUMULATIVE (2025) BASE TRAFFIC PROJECTIONS

The Cumulative (2025) Base traffic projections reflect growth in traffic from two primary sources: Firstly, the background or ambient growth to reflect the effects of overall area-wide regional growth both within and outside the study area; and secondly, from traffic generated by specific related (cumulative) projects located within, or in the vicinity of, the study area. Each of these components is described below.

Area-wide Ambient Traffic Growth

The traffic in the vicinity of the study area was estimated to increase at a rate of about 1% per year per the approved LADOT Memorandum of Understanding. Future increases in background traffic volumes due to regional growth and development are expected to continue at this rate. With the assumed completion date of 2025, the Existing (2020) traffic volumes were adjusted upward by a factor of 5% to reflect this area-wide regional growth. The resulting Existing with Ambient Growth (2025) traffic volumes are illustrated in Figure 13.

Related Projects Traffic Generation and Assignment

As indicated, the second potential source of traffic growth in the study area is that expected from other future development projects in the vicinity. These related or "cumulative" projects are those developments that are planned and expected to be in place within the same timeframe as the Project. Per City of Los Angeles' *Transportation Assessment Guidelines,* selection for related projects information should include development projects that are within a quarter mile (1,320-foot) radius of the subject project. For the purposes of this study, related projects within a 1,320-foot radius from the Project site were included in the related projects list.

Data describing related projects in the area was obtained from the City of Los Angeles. Twenty-seven (27) related projects were identified within the study area and are listed in Table 11. The locations of these projects are shown in Figure 14.

The trip generation estimates for the related projects were based on trip generation estimates for the related projects within the City of Los Angeles provided by the City of Los Angeles Department

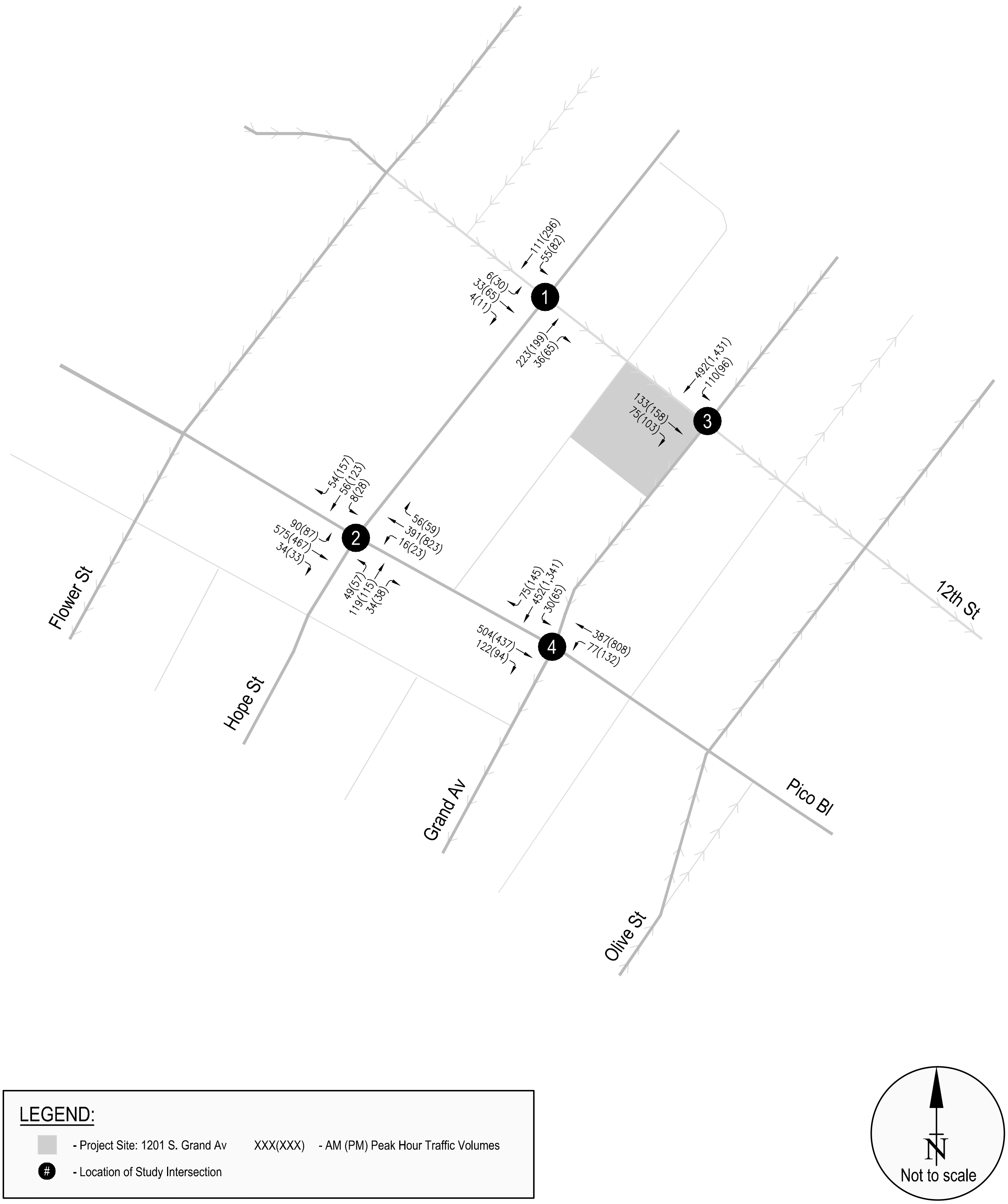

FIGURE 13
EXISTING WITH AMBIENT GROWTH (2025) CONDITIONS - PEAK HOUR TRAFFIC VOLUMES

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TABLE 11
ESTIMATED WEEKDAY TRIP GENERATION OF RELATED PROJECTS

Map No.	Project Name	Location	Description	Daily	AM Peak Hour			PM Peak Hour		
					IN	OUT	TOTAL	IN	OUT	TOTAL
City of Los Angeles [1]										
1	Mixed-Use Project	1111 S. Broadway	391-unit apartments, 41,140 s.f. office use, and 40,000 s.f. retail use.	5,198	144	176	320	258	274	532
2	Hotel Project	1138 S. Broadway	138-room hotel.	644	20	25	45	22	25	47
3	Mixed-Use Project	1148 S. Broadway	94-unit apartments and 2,500 s.f. retail use.	553	8	30	38	32	18	50
4	Luxe City Center Hotel Project	1020 S. Figueroa Street	300-room hotel, 650-unit condominiums, 40,000 s.f. retail use and 40,000 s.f. restaurant use.	6,583	204	274	478	312	227	539
5	Fig + Pico Conference Center Hotels	1248 S. Figueroa Street	1,162-room hotel, 6,573 s.f. restaurant use and 6,573 s.f. high-turnover restaurant use.	5,720	192	125	317	203	212	415
6	City Lights on Fig Hotel Project	1300 S. Figueroa Street	1,024-room hotel, replacing 100-unit apartments.	9,134	398	288	686	351	366	717
7	Residential Project	1400 S. Figueroa Street	106-unit apartments and 4,834 s.f. retail/restaurant use.	647	10	38	48	39	22	61
8	Mixed-Use Project	1212 S. Flower Street	730-unit condominiums, 10,500 s.f. commercial use and 70,465 s.f. office use.	3,956	78	233	311	229	121	350
9	Mixed-Use Project	1323 S. Flower Street	132-room hotel, 47-unit apartments and 4,000 s.f. bar/restaurant use.	1,287	33	40	73	61	39	100
10	Mixed-Use Project	1334 S. Flower Street	146-unit apartments and 6,270 s.f. retail/restaurant use.	796	-1	49	48	51	16	67
11	Residential Project	1400 S. Flower Street	147-unit apartments and 6,921 s.f. retail use.	798	-1	49	48	51	16	67
12	South Park Towers Project	1600 S. Flower Street	250-unit apartments, 300-room hotel and 13,120 s.f. commercial use.	1,788	77	91	168	55	36	91
13	Restaurant Project	1036 S. Grand Avenue	7,149 s.f. restaurant use.	492	2	3	5	99	35	134
14	DTLA South Park Site 1	1120 S. Grand Avenue	666-unit apartments and 20,690 s.f. retail use.	2,730	42	127	169	136	93	229
15	Grand Residence	1229 S. Grand Avenue	161-unit condominiums and 3,000 s.f. restaurant use.	1,116	23	62	85	62	33	95
16	Mixed-Use Project	1323 S. Grand Avenue	284-unit apartments, 5,200 s.f. retail use and 1,100 s.f. restaurant use.	2,158	33	118	151	125	74	199
17	Mixed-Use Project	1030 S. Hill Street	700-unit apartments, 7,000 s.f. retail use and 7,000 s.f. restaurant use.	3,392	49	193	242	181	104	285
18	11th & Hill Project	1115 S. Hill Street	172-unit condominiums and 6,850 s.f. restaurant use.	543	-45	40	-5	50	-7	43
19	14th/Hill St (DTLA) Mixed-Use Project	1340 S. Hill Street	235-unit apartments, 5,250 s.f. retail use and 4,000 s.f. restaurant use.	1,755	11	103	114	108	30	138
20	Amacon Project	1133 S. Hope Street	208-unit apartments and 5,029 s.f. retail use.	1,543	20	74	94	91	50	141
21	Hotel Project	1219 S. Hope Street	75-room hotel and 2,650 s.f. retail use.	613	24	16	40	23	22	45
22	The Morrison Hotel Project	1246 S. Hope Street	258-unit apartments, 265-room hotel and 6,000 s.f. retail use.	5,433	141	128	269	269	199	468
23	Mixed-Use Project	1300 S. Hope Street	419-unit apartments and 42,200 s.f. retail use.	4,280	88	105	193	136	102	238
24	Mixed-Use Project	1045 S. Olive Street	800-unit condominiums and 15,000 s.f. commercial use.	2,227	39	157	196	138	62	200
25	Mack Urban Project	1105 S. Olive Street	Site 2: 537-unit apartments, 3,800 s.f. restaurant use and 3,800 s.f. retail use. Site 3: 713-unit apartments, 7,100 s.f. restaurant use and 7,100 s.f. retail use.	5,241	122	278	400	258	160	418
26	Hotel Project	1155 S. Olive Street	258-room hotel, 1,896 s.f. retail use and 2,722 s.f. restaurant use.	2,008	77	56	133	77	72	149
27	Mixed-Use Project	1340 S. Olive Street	156-unit apartments, 5,000 s.f. retail use and 10,000 s.f. restaurant use.	1,700	51	82	133	89	57	146
			RELATED PROJECTS TRIP GENERATION TOTAL	72,335	1,839	2,960	4,799	3,506	2,458	5,964

* Includes related project 0.25 miles from the furthest study intersection.
[1] Source: Los Angeles Department of Transportation - March 31, 2020.

FIGURE 14
LOCATION OF RELATED PROJECTS

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of Transportation. The trip generation estimates for the related projects are shown in Table 11. As summarized in Table 11, the related projects are expected to generate approximately 4,799 trips during the morning peak hour and 5,964 trips during the evening peak hour.

Cumulative (2025) Base Traffic Volumes

Figure 15 illustrates the related projects traffic assignment. These related projects' traffic estimates were added to the Existing with Ambient Growth (2025) traffic to obtain the Cumulative (2025) Base traffic volumes. Figure 16 provides the Cumulative (2025) Base traffic volumes at each of the analysis intersections during both AM and PM peak hours. These volumes represent Future (2025) Cumulative Base (without project) conditions.

CUMULATIVE (2025) PLUS PROJECT TRAFFIC VOLUMES

Utilizing the Project-only traffic estimates developed for both AM and PM peak hours, traffic forecasts for the Future Year 2025 plus Project conditions were developed. The Cumulative (2025) Base traffic forecasts were combined with the Project-only traffic volumes to obtain the Future with Project traffic volume forecasts. The Future Year 2025 Cumulative plus Project traffic volumes during both AM and PM peak hours are presented in Figure 17 and will be evaluated in the Non-CEQA section.

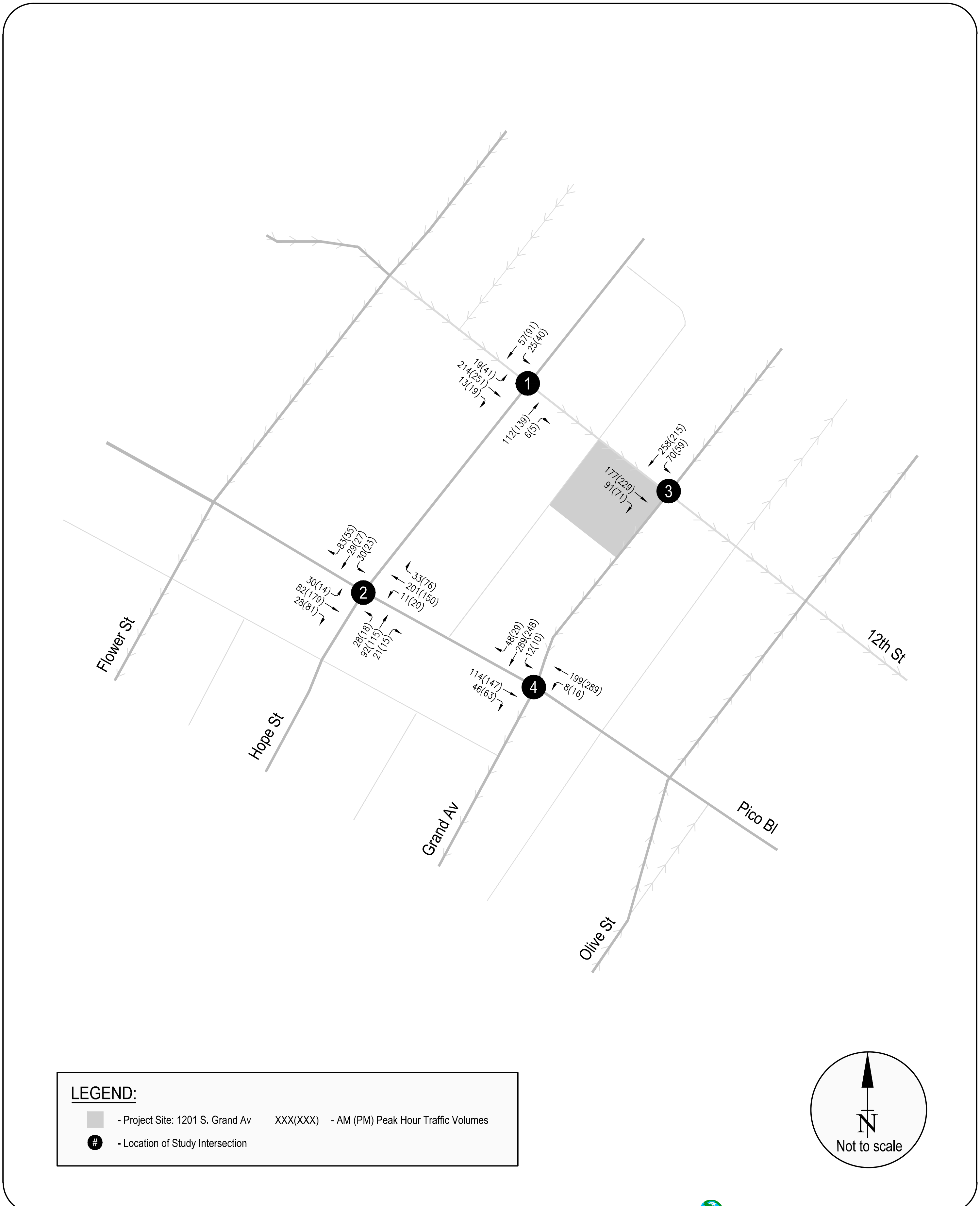

FIGURE 15
RELATED PROJECTS ONLY - PEAK HOUR TRAFFIC VOLUMES

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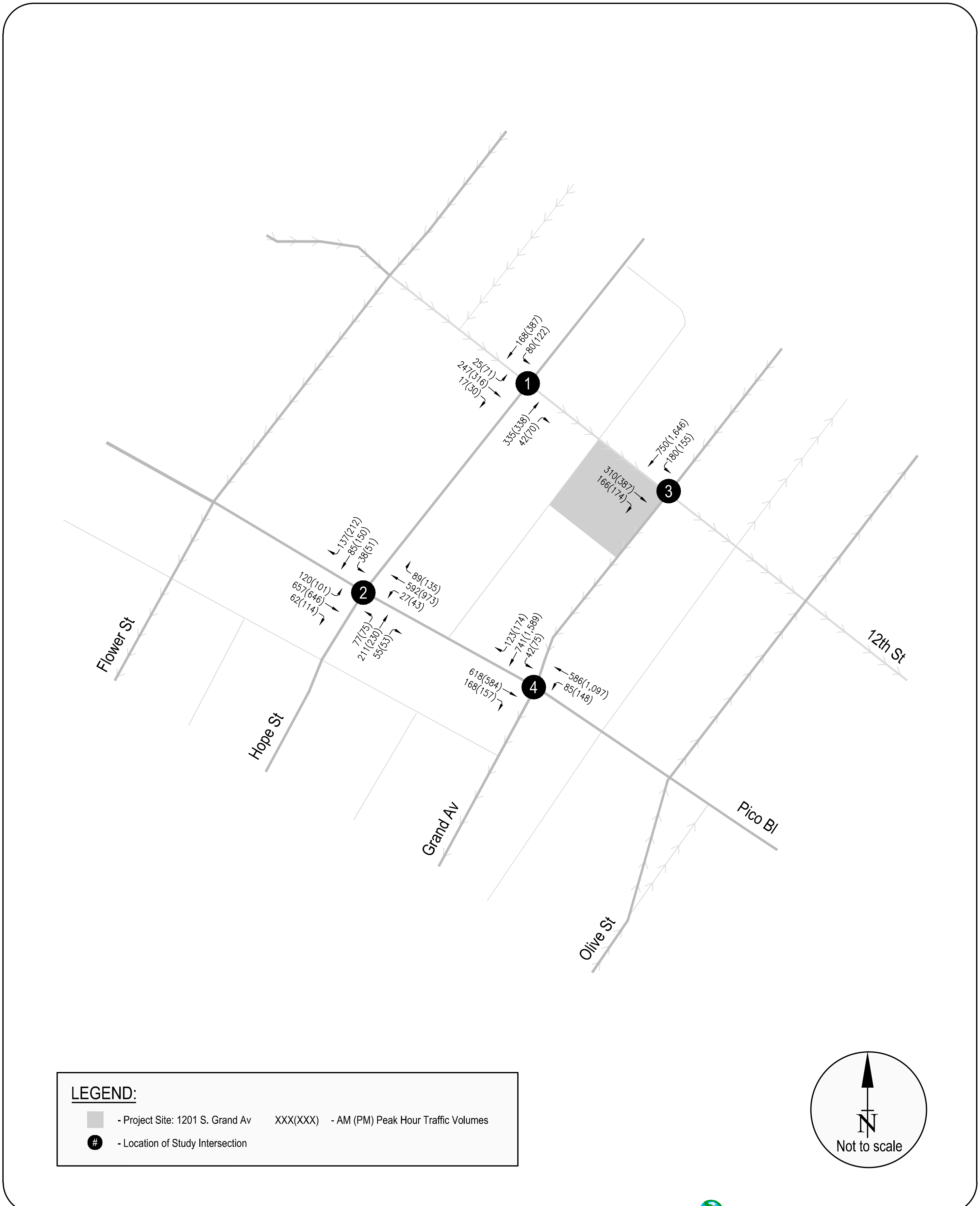

FIGURE 16
CUMULATIVE (2025) BASE CONDITIONS - PEAK HOUR TRAFFIC VOLUMES

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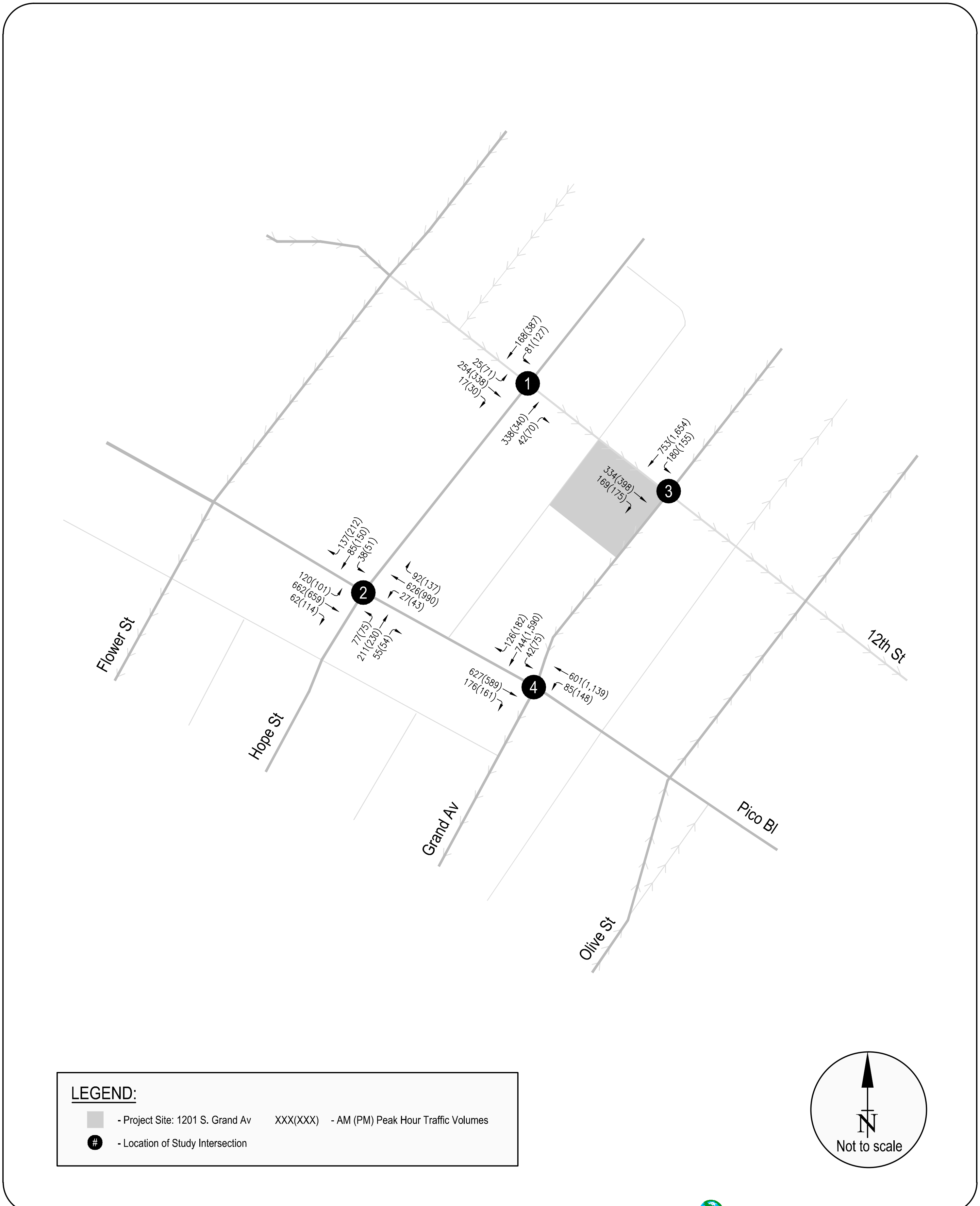

FIGURE 17

CUMULATIVE (2025) PLUS PROJECT CONDITIONS - PEAK HOUR TRAFFIC VOLUMES

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V. NON-CEQA TRANSPORTATION ANALYSIS

The non-CEQA transportation analyses associated with the Project were prepared utilizing the methodologies and assumptions per the City of Los Angeles' *Transportation Assessment Guidelines*, July 2019. The results were then used to assess the potential effects of the proposed Project based on evaluation criteria established by the City of Los Angeles. This chapter includes a summary of the screening criteria, evaluation criteria, methodology and recommended corrective actions (if needed) for each evaluation component.

The non-CEQA transportation analyses consist of assessment of transportation effects for the following City established evaluation criteria for development projects:

- Pedestrian, Bicycle and Transit Access Assessment
- Project Access, Safety and Circulation Evaluation, and
- Project Construction.

There are no residential/local streets within the study area that would provide a viable alternative route for traffic intrusion. Therefore, 'Residential Street Cut-Through Analysis' per the City's *Transportation Assessment Guidelines* is not applicable.

PEDESTRIAN, BICYCLE, AND TRANSIT ACCESS ASSESSMENT

This section includes an evaluation of the pedestrian, bicycle, and transit facilities and provides an assessment to determine the Project's potential effect on these transportation facilities in the vicinity of the proposed Project. Per the City's *Transportation Assessment Guidelines*, the potential effects could be physical (through removal, modification, or degradation of facilities) or demand-based (by adding pedestrian or bicycle demand to inadequate facilities).

Screening Criteria

Per the City's *Transportation Assessment Guidelines*, if the answer is yes to all of the following questions, further analysis will be required to assess whether the Project would negatively affect existing pedestrian, bicycle, or transit facilities:

- *Would the project generate a net increase of 250 or more daily vehicle trips?*
    - Project Response: Yes. The proposed Project is estimated to generate a total of 1,309 daily trips.

- *Does the land use project include the construction, or addition of: 50 dwelling units or guest rooms or combination thereof, or 50,000 square feet of non-residential space?*
    - Project Response: Yes. The Project is proposing to construct up to 312 dwelling units.

- *Is the project on a lot that is ½ acre or more in total gross area, or is the project's frontage along an Avenue or Boulevard (as designated in the City's General Plan), 250 linear feet or more, or is the project's building frontage encompassing an entire block along an Avenue or Boulevard (as designated in the City's General Plan)?*
    - Project Response: Yes. The Project is located on 0.584-acre lot.

Since the answer is 'Yes' to all three questions, further analysis will be required to assess whether the Project would negatively affect existing pedestrian, bicycle, or transit facilities.

Evaluation Criteria

The project's potential effect on pedestrian, bicycle and transit facilities should be assessed to determine if the project would directly or indirectly result in a permanent removal or modification that would lead to the degradation of pedestrian, bicycle, or transit facilities. Additionally, it should be assessed if the project would intensify use of existing pedestrian, bicycle, or transit facilities, such as: increase in pedestrian or vehicle volume, and thereby increase the need or attraction to cross a street at unmarked pedestrian crossings or unsignalized or uncontrolled intersections where a crossing is not available without significant rerouting; result in new pedestrian demand between project site entries/exits and major destinations or transit stops expected to serve the development where there are missing pedestrian facilities (e.g., gaps in the sidewalk network) or substandard pedestrian facilities (e.g., narrow or uneven sidewalks, no crosswalks at intersections or mid-block, no marked crossing, or push button crossing rather than actuated, etc.); and Increase transit demand at bus stops that lack marked crossings, with insufficient sidewalks, or are in isolated, unshaded, or unlit areas.

Methodology

The existing pedestrian conditions presented in Chapter 2 will be utilized to determine whether the Project would result in the removal or degradation of pedestrian, bicycle and/or transit facilities. Also, the Project will be assessed to determine the intensity of use. More specifically, the assessment includes if the project is expected to add pedestrians to an existing unmarked crossing or an uncontrolled crosswalk. Lastly, if the Project would result in increased pedestrian demand on streets identified as the High Injury Network (HIN), additional assessment will be required.

Pedestrian, Bicycle, and Transit Access Evaluation

Chapter 2 includes a description of the existing pedestrian, bicycle and transit facilities within the study area including location of sidewalks, sidewalk widths and conditions, an inventory of crosswalks and other pedestrian amenities (e.g., crosswalk type, pedestrian pushbuttons) as well as potential pedestrian destinations. For the ease of reading the report, some tables and figure from Chapter 2 are repeated in this section.

Pedestrian System Evaluation

As shown in Figure 18 and in Table 12, there are generally sidewalks provided on both sides of the streets within the study area and there are no gaps (missing facilities) in the pedestrian network. The sidewalks identified within the study area are generally in adequate physical conditions (i.e., not narrow or uneven). As indicated in Table 13, all intersections within the study area are signalized and generally provided with adequate pedestrian amenities. At these locations, crosswalks are generally provided at each leg of the intersection with curb ramps and are considered adequate. The majority of the intersections within the study area provide pushbutton pedestrian calls rather than actuated pedestrian indications. Per the City's *Transportation Assessment Guidelines,* crossing locations with pushbutton pedestrian calls are deemed substandard.

The pedestrian network consisting of sidewalks, intersections with signalized crossing and crosswalks, provide pedestrian connectivity to the potential pedestrian destinations within the study area as shown in Figure 19. These destinations within a quarter mile of the Project site

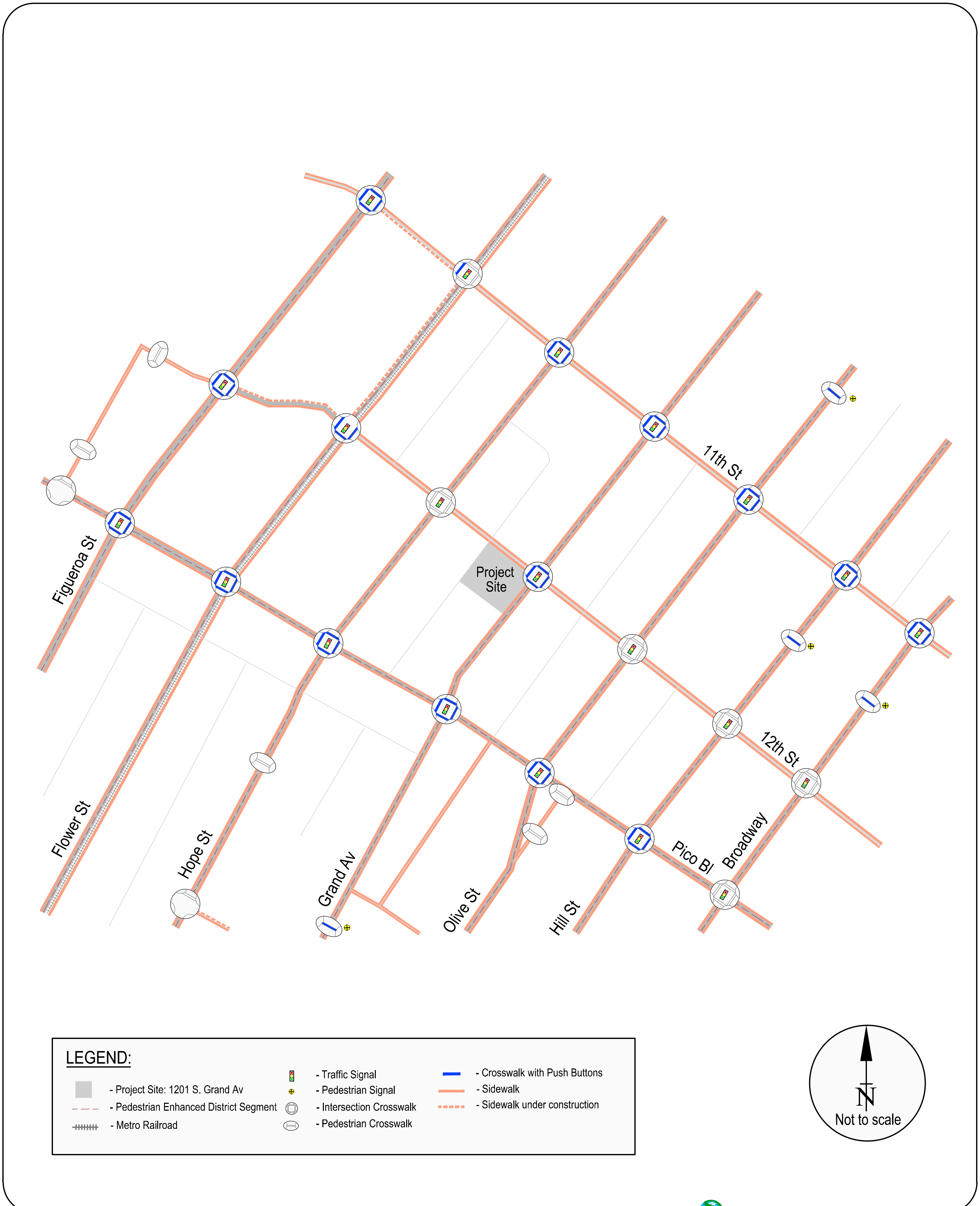

FIGURE 18
INVENTORY OF EXISTING PEDESTRIAN FACILITIES

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TABLE 12
SIDEWALK INVENTORY AND CONDITIONS WITHIN THE STUDY AREA

Street	Segment To	Segment From	Street Classification	Right-of-Way Width Designated [1]	Roadway Width Designated [1]	Side of Street	Sidewalk Available	Sidewalk Width [2]	Condition [3] Adequate or Substandard
Figueroa Street	11th Street	12th Street	Modified Boulevard II	116'	86'	West	Yes	28'	Adequate
						East	Yes	[4]	Currently under construction - Temp. sidewalk available
	12th Street	Pico Boulevard	Modified Boulevard II	116'	86'	West	Yes	18'	Adequate
						East	Yes	[5]	Adequate
Flower Street	Olympic Boulevard	11th Street	Modified Avenue II	90'	66'	West	Yes	22'	Adequate
						East	Yes	12'	Adequate
	11th Street	12th Street	Modified Avenue I	105'	75'	West	Yes	[4]	Currently under construction - Sidewalk not available
						East	Yes	10'	Adequate
	12th Street	Pico Boulevard	Modified Avenue I	105'	75'	West	Yes	[5]	Adequate
						East	Yes	10'	Adequate
	Pico Boulevard	Venice Boulevard	Modified Avenue I	105'	75'	West	Yes	10'	Adequate
						East	Yes	10'	Adequate
Hope Street	Olympic Boulevard	11th Street	Avenue II	86'	56'	West	Yes	12'	Adequate
						East	Yes	12'	Adequate
	11th Street	12th Street	Avenue II	86'	56'	West	Yes	12'/21'	Adequate
						East	Yes	12'/15'	Adequate
	12th Street	Pico Boulevard	Avenue II	86'	56'	West	Yes	12'	Adequate
						East	Yes	12'	Adequate
	Pico Boulevard	15th Street	Avenue II	86'	56'	West	Yes	12'	Adequate
						East	Yes	12'	Adequate
Grand Avenue	Olympic Boulevard	11th Street	Modified Avenue II	90'	56'	West	Yes	17'	Adequate
						East	Yes	15'/22'	Adequate
	11th Street	12th Street	Modified Avenue II	90'	56'	West	Yes	22'	Adequate
						East	Yes	17'	Adequate
	12th Street	Pico Boulevard	Modified Avenue II	90'	56'	West	Yes	17'	Adequate
						East	Yes	17'	Adequate
	Pico Boulevard	14th Street	Modified Avenue II	90'	56'	West	Yes	12'	Adequate
						East	Yes	12'	Adequate
Olive Street	Olympic Boulevard	11th Street	Modified Avenue II	90'	56'	West	Yes	17'	Adequate
						East	Yes	17'	Adequate
	11th Street	12th Street	Modified Avenue II	90'	56'	West	Yes	17'	Adequate
						East	Yes	17'/21'	Adequate
	12th Street	Pico Boulevard	Modified Avenue II	90'	56'	West	Yes	17'	Adequate
						East	Yes	17'	Adequate
	Pico Boulevard	14th Street	Modified Avenue II	90'	56'	West	Yes	12'	Adequate
						East	Yes	12'	Adequate
Hill Street	11th Street	12th Street	Modified Avenue II	92'	56'	West	Yes	18'	Adequate
						East	Yes	18'	Adequate
	12th Street	Pico Boulevard	Modified Avenue II	92'	56'	West	Yes	18'	Adequate
						East	Yes	12'	Adequate
	Pico Boulevard	14th Street	Modified Avenue II	90'	56'	West	Yes	17'	Substandard - uneven
						East	Yes	17'/24'	Adequate
Broadway	11th Street	12th Street	Modified Avenue II	90'	56'	West	Yes	17'	Adequate
						East	Yes	16'	Adequate
	12th Street	Pico Boulevard	Modified Avenue II	90'	56'	West	Yes	10'	Adequate
						East	Yes	16'	Adequate
11th Street	Figueroa Street	Flower Street	Modified Collector	N/A	N/A	North	Yes	15'	Adequate
						South	Yes	[4]	Currently under construction - Temp. sidewalk available
	Flower Street	Hope Street	Modified Collector	64'	40'	North	Yes	12'	Adequate
						South	Yes	12'	Adequate
	Hope Street	Grand Avenue	Modified Collector	64'	40'	North	Yes	10'/18'	Adequate
						South	Yes	12'	Adequate
	Grand Avenue	Olive Street	Modified Collector	64'	40'	North	Yes	17'	Adequate
						South	Yes	10'	Adequate

TABLE 12 (continued)
SIDEWALK INVENTORY AND CONDITIONS WITHIN THE STUDY AREA

Street	Segment To	Segment From	Street Classification	Right-of-Way Width Designated [1]	Roadway Width Designated [1]	Side of Street	Sidewalk Available	Sidewalk Width [2]	Condition [3] Adequate or Substandard
11th Street	Olive Street	Hill Street	Modified Collector	64'	40'	North	Yes	17'	Adequate
						South	Yes	10'	Adequate
12th Street	Figueroa Street	Flower Street	Avenue II	86'	56'	North	Yes	N/A	Currently under construction - Sidewalk not available
						South	Yes	[5]	Adequate
	Flower Street	Hope Street	Modified Collector	64'	40'	North	Yes	10'	Adequate
						South	Yes	[4]	Currently under construction - Temp. sidewalk available
	Hope Street	Grand Avenue	Modified Collector	64'	40'	North	Yes	10'	Adequate
						South	Yes	10'	Adequate
	Grand Avenue	Olive Street	Modified Collector	64'	40'	North	Yes	10'	Adequate
						South	Yes	10'	Adequate
	Olive Street	Hill Street	Modified Collector	64'	40'	North	Yes	10'	Adequate
						South	Yes	10'	Adequate
	Hill Street	Broadway	Modified Collector	64'	40'	North	Yes	10'	Adequate
						South	Yes	18'	Adequate
Pico Boulevard	Figueroa Street	Flower Street	Modified Boulevard II	114'	84'	North	Yes	18'	Adequate
						South	Yes	10'	Adequate
	Flower Street	Hope Street	Avenue I	100'	70'	North	Yes	12'/20'	Adequate
						South	Yes	12'	Adequate
	Hope Street	Grand Avenue	Avenue I	100'	70'	North	Yes	12'	Adequate
						South	Yes	8'/12'	Adequate
	Grand Avenue	Olive Street	Avenue I	100'	70'	North	Yes	10'/15'	Adequate
						South	Yes	8'	Adequate
	Olive Street	Hill Street	Avenue I	100'	70'	North	Yes	15'	Adequate
						South	Yes	10'	Adequate
	Hill Street	Broadway	Avenue I	100'	70'	North	Yes	10'/12'	Adequate
						South	Yes	10'	Adequate

Street classifications from City of Los Angeles' *Mobility Plan 2035* .
[1] Designated right-of-way and designated roadway widths from Navigate LA website.
[2] Existing sidewalk widths measured from Google Maps aerial view. Measurements are approximate.
[3] Sidewalk conditions based on Google Maps street views.
[4] Sidewalk is currently under construction. Unable to determine sidewalk width and condition.
[5] Aerial view showing sidewalk under construction. Unable to determine sidewalk width. However, a newly constructed sidewalk has been completed and is adequate.

TABLE 13
INVENTORY OF PEDESTRIAN CROSSING LOCATIONS AND AMENITIES WITHIN THE STUDY AREA

	Crosswalk Type				Curb Access Ramp Provided				Tactile Warning Strip Provided				Curb Extension/Bulbout Provided				Overall Assessment
Intersection	North Leg	West Leg	South Leg	East Leg	NW Corner	NE Corner	SE Corner	SW Corner	NW Corner	NE Corner	SE Corner	SW Corner	NW Corner	NE Corner	SE Corner	SW Corner	of Quality
Figueroa Street & 12th Street	Continental	Decorative	Continental	Continental	Yes	Yes	Yes	Yes	No	No	Yes	No	No	No	No	No	Adequate
Figueroa Street & Pico Boulevard	Continental	Continental	Continental	Continental	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	No	No	Adequate
Flower Street & 11th Street	Continental	Continental	Continental	Continental	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	Adequate
Flower Street & 12th Street	None	Standard	Decorative	Decorative	N/A	Yes	Yes	Yes	N/A	No	No	Yes	No	No	No	No	Adequate
Flower Street & Pico Boulevard	Continental	Continental	Continental	Continental	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	Adequate
Hope Street & 11th Street	Continental	Continental	Continental	Continental	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Adequate
Hope Street & 12th Street	Standard	Standard	Standard	Standard	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	Adequate
Hope Street & Pico Boulevard	Decorative	Decorative	Decorative	Decorative	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	Yes	No	Adequate
Grand Avenue & 11th Street	Continental	Continental	Continental	Continental	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	Adequate
Grand Avenue & 12th Street	Continental	Continental	Continental	Continental	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	Adequate
Grand Avenue & Pico Boulevard	Continental	Continental	Continental	Continental	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	Adequate
Olive Street & 11th Street	Yellow School	Yellow School	Yellow School	Yellow School	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Adequate
Olive Street & 12th Street	Standard	Standard	Standard	Standard	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	Adequate
Olive Street & Pico Boulevard	Continental	Continental	Continental	Continental	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Adequate
Hill Street & 11th Street	Yellow School	Yellow School	Yellow School	Yellow School	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Adequate
Hill Street & 12th Street	Continental	Continental	Continental	Continental	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	Adequate
Hill Street & Pico Boulevard	Continental	Continental	Continental	Continental	Yes	Yes	Yes	No	Yes	No	No	No	No	No	No	No	Adequate
Broadway & 12th Street	Standard	Standard	Standard	Standard	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	No	No	Adequate
Broadway & Pico Boulevard	Standard	Standard	Standard	Standard	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	Adequate

Mid-Block Crossing Locations	Signal Provided	Crosswalk Type	Curb Access Ramp Provided		Tactile Warning Strip Provided		Curb Extension/ Bulbout Provided		Overall Assessment of Quality
			NSide/WSide	SSide/ESide	NSide/WSide	SSide/ESide	NSide/WSide	SSide/ESide	
Hope Street between Cameron Ln & 15th St	No	Decorative	Yes	Yes	Yes	Yes	No	No	Substandard
Grand Avenue between 14th St & 15th St	Yes	Continental	Yes	Yes	No	No	Yes	Yes	Adequate
Olive Street between Olympic Bl & 11th St	Yes	Continental	Yes	Yes	Yes	Yes	No	No	Adequate
Hill Street between 11th St & 12th St	Yes	Continental	Yes	Yes	No	Yes	No	No	Adequate

[1] Based on Google Maps aerial view and street views.

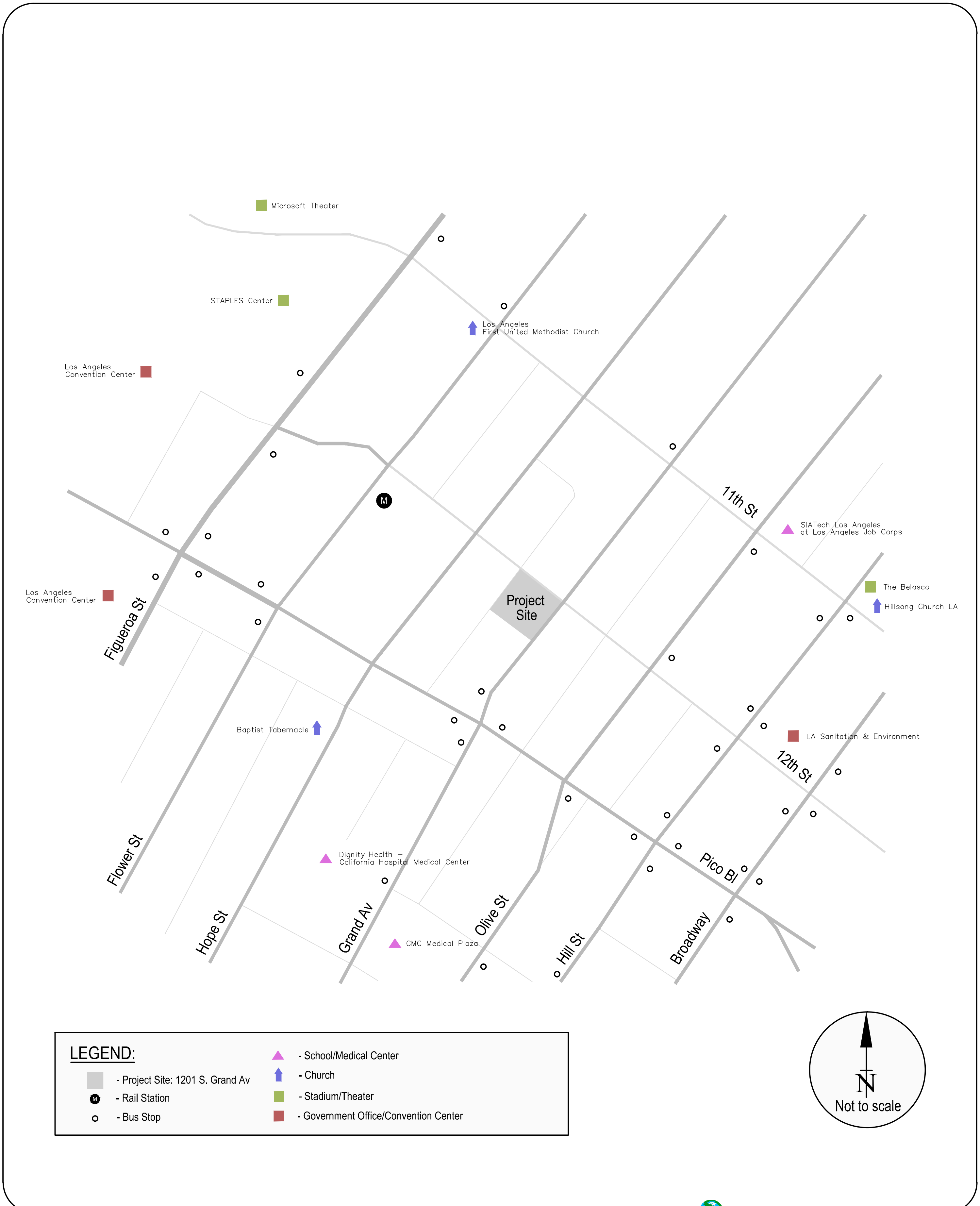

FIGURE 19
POTENTIAL PEDESTRIAN DESTINATIONS

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include Staples Center, Los Angeles Convention Center, Microsoft Theater, several bus stops (36 of them), the Metro Rail Station along Flower Street south of 12th Street, and other facilities including medical offices, religious facilities, a school and government office(s).

The Project site is located on the south-west corner of the intersection of Grand Avenue and 12th Street. As indicated in Table 12, Grand Avenue currently provides a 17-foot sidewalk along the Project's eastern frontage, while 12th Street provides a 10-foot sidewalk along the Project's northern frontage. A review of the Project's site plan (shown in Figure 2) indicates that the Project would provide wider sidewalks along Grand Avenue and 12th Street. As proposed, the Project would provide an easement of 3 feet from the southerly property line to approximately 120 feet north, and increased easement north of that location along the building frontage. This would allow for a 20-foot wide sidewalk along the Project's Grand Avenue frontage. The Project would also provide a 2-foot dedication along its 12th Street frontage, providing a 12-foot wide sidewalk/parkway. Further, the Project would provide 15 feet by 15 feet corner dedication at the south-west corner of Grand Avenue and 12th Street that would improve visibility to pedestrians and bicyclists.

The adjacent pedestrian crossing locations to site are located at the intersections of Grand Avenue/12th Street, Grand Avenue Pico Boulevard and Hope Street/12th Street, Hope Street/Grand Ave. These intersections provide crosswalks across all legs of the intersections with curb ramp access. High visibility crosswalks are provided at Grand Avenue/12th Street, Grand Avenue/Pico Boulevard and Hope Street/Grand Avenue.

In summary, existing pedestrian system elements such as sidewalks, crosswalks and controlled pedestrian crossings are available and will continue to be available to serve pedestrians between the Project and major destinations within the study area. The Project will provide enhanced and widened sidewalks along its 12th Street and Grand Avenue frontages. Therefore, the Project would not have any negative effect on the pedestrian circulation system within the study area.

Bicycle System Evaluation

Figure 20 illustrates the existing and planned bicycle facilities within the study area. As shown in the figure, the Project would have direct access to the existing bike lane and proposed

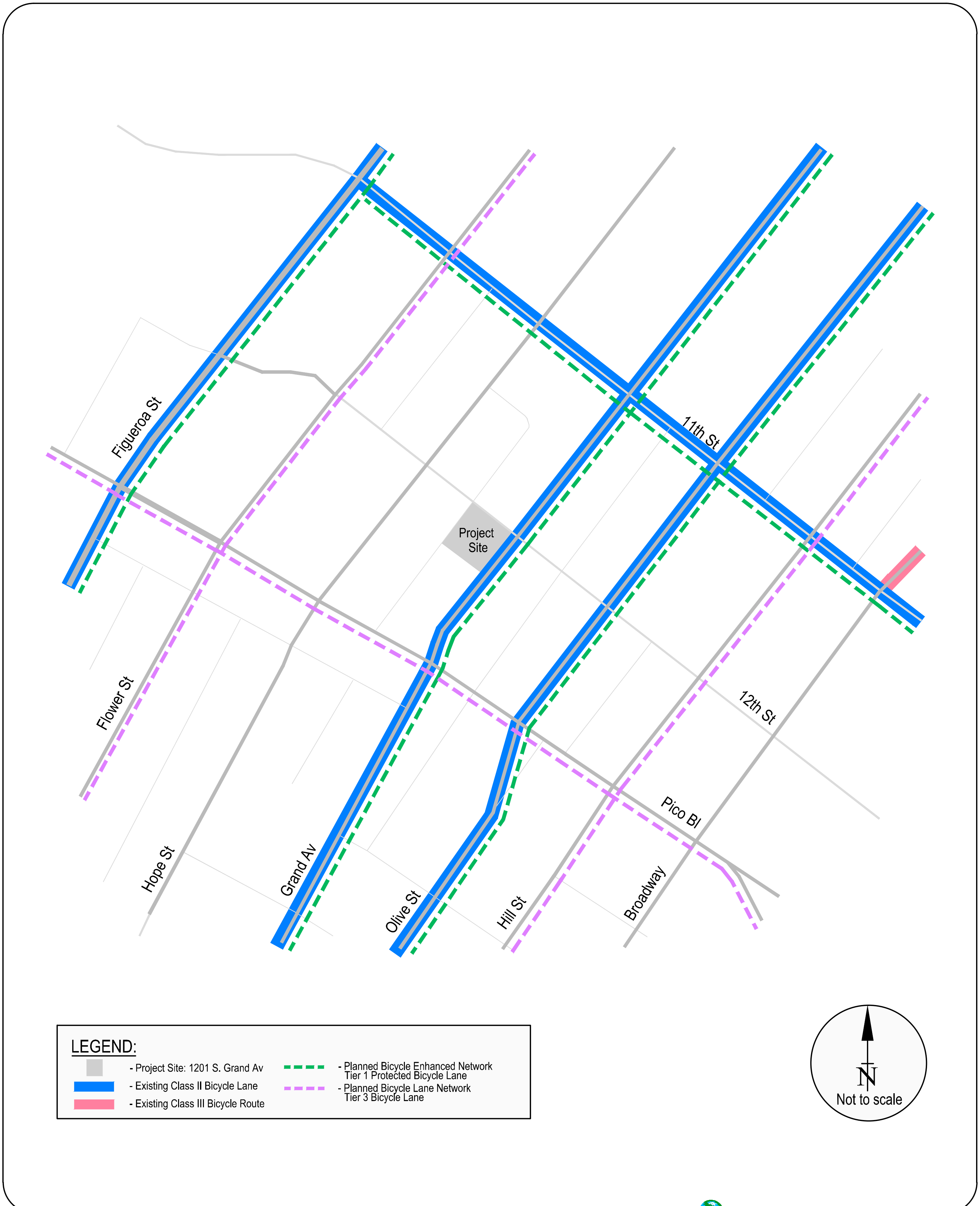

FIGURE 20
EXISTING AND PLANNED BICYCLE FACILITIES WITHIN THE STUDY AREA

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Tier 1 – Protected Bike Lane along Grand Avenue. Olive Street, located one block east of the Project site, also provides an existing bike lane (proposed Tier 1 – Protected Bike Lane). Within the study area, these bike lanes provide connectivity to the existing bike lane along 11th Street and the planned Tier 3 – Bike Lane along Pico Boulevard.

Grand Avenue currently provides a driveway to the existing site. The Project is providing its access to and from the site from the alley located on the west side of the Project and would remove the existing site driveway along Grand Avenue. The removal of this existing driveway removes potential vehicle/bicycle, vehicle/pedestrian and vehicle/vehicle conflicts improving the overall safety along this section of Grand Avenue. The Project is also proposing to provide bicycle racks along Grand Avenue in front of the Project site. These bicycle racks would complement the bike lane.

The Project would not have a negative effect on the bicycle circulation system within the study area.

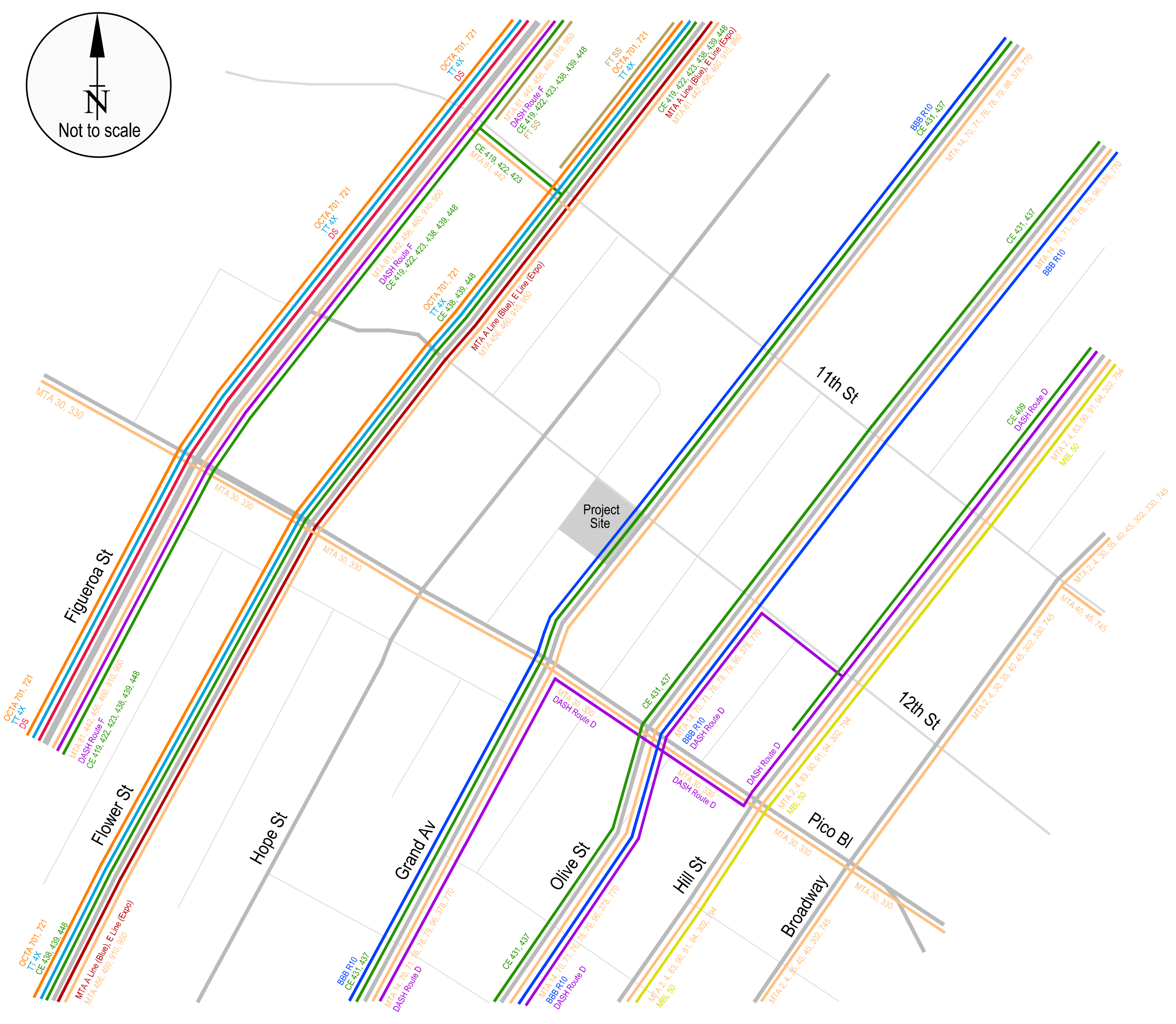
Transit System Evaluation

As shown in Figure 21, there are no bus stops located along either Grand Avenue or 12th Street Project's frontages. The nearest bus stops to the Project site are located at all corners of the intersection of Grand Avenue and Pico Boulevard, serving eastbound/westbound and southbound transit lines.

The Project would not have a negative effect on the transit system.

Removal or Degradation of Facilities

Based on a review of the Project site plan in conjunction with an assessment of the existing pedestrian, bicycle, and transit facilities discussed above, the Project does not propose removal of facilities nor would the Project contribute to the degradation of facilities. Per the City's *Transportation Assessment Guidelines* evaluation criteria, the following summary is provided:



LEGEND:

- Project Site: 1201 S. Grand Av
- Santa Monica's Big Blue Bus (BBB)
- Los Angeles Department of Transportation Commuter Express (CE)
- Los Angeles Department of Transportation DASH (DASH)
- Dodger Shuttle (DS)
- Foothill Transit (FT)
- Orange County Transportation Authority (OCTA)
- Montebello Bus Lines (MBL)
- Los Angeles County Metropolitan Transportation Authority (MTA) Bus
- Los Angeles County Metropolitan Transportation Authority (MTA) Rail
- Torrance Transit (TT)

FIGURE 21
EXISTING TRANSIT LINES

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- The Project does not include the removal or degradation of existing sidewalks, crosswalks, pedestrian refuge islands, and/or curb extensions/bulbouts. The Project will provide wider sidewalks along Grand Avenue and 12th Street. As proposed, the Project would provide an easement of 3 feet from the southerly property line to approximately 120 feet north, and increased easement north of that location along the building frontage. This would allow for a 20-foot wide sidewalk along the Project's Grand Avenue frontage. The Project would also provide a 2-foot dedication along its 12th Street frontage, providing a 12-foot wide sidewalk/parkway. Further, the Project would provide 15 feet by 15 feet corner dedication at the south-west corner of Grand Avenue and 12th Street that would improve visibility to pedestrians and bicyclists.

- The Project does not include permanent removal or degradation of existing bikeways and/or supporting facilities (e.g., bikeshare stations, on-street bike racks/parking, bike corrals, etc.). The Project is enhancing the existing bikeway by providing bicycle racks along Grand Avenue and by providing 174 bicycle spaces on-site.

- The Project does not include permanent removal or degradation of existing transit and/or local circulator facilities including stop, bench, shelter, concrete pad, bus lane, or other amenities.

- The Project does not include permanent removal of other existing transportation system elements supporting sustainable mobility.

- The Project does not increase street crossing distance for pedestrians; increase in number of travel/turning lanes; increase in turning radius or turning speeds

- The Project does not include permanent removal, degradation, or narrowing of an existing sidewalk, path, crossing, or pedestrian accessway. As noted above, the Project will provide wider sidewalks along its Grand Avenue and 12th Street frontages.

- The Project does not include permanent removal or narrowing of existing sidewalk-street buffering elements (e.g., curb extension, parkway, planting strip, street trees, etc.)

In conclusion, the Project would not directly or indirectly result in a permanent removal or modification that would lead to the degradation of pedestrian, bicycle, or transit facilities. No recommended actions are required for the Project.

Intensification of Use

Given the nature of any residential project, the Project, as well, would intensify the use of existing pedestrian, bicycle and transit facilities within the study area. However, as discussed above, there is a robust pedestrian network within the study area. This includes sidewalks on both sides of the streets (no gaps in the pedestrian network), and signalized intersections that provide crosswalks with curb ramp access as summarized in Table 13. Therefore, consistent with the City's *Transportation Assessment Guidelines*, the Project would not increase the need to cross a street at unmarked pedestrian crossings or unsignalized or uncontrolled intersections where a crossing is not available without significant rerouting. Also, the Project would not result in new pedestrian demand between Project site entries/exits and major destinations or transit stops expected to serve the development where there are missing pedestrian facilities or substandard pedestrian facilities.

The nearest bus stops to the Project site are located on the corners of the intersection of Grand Avenue/Pico Boulevard as shown in Figure 19. Due to the Project's proximity to these bus stops and robust transit line options, the majority of potential transit users from the Project would access these transit facilities with the available and enhanced pedestrian facilities. One bus stop is located on the west side of Grand Avenue (along near side southbound approach) and provides a bus shelter. This bus stop serves several transit lines including Metro Bus Lines (70, 70, 76, 78, 79, 96, 378), LADOT Bus Lines 431 and 437, and Santa Monica Big Blue Bus Rapid Bus Line 10. Another bus stop with a shelter is provided on the south side of Pico Boulevard (along the near side eastbound approach), serving Metro Bus Lines 30 and 330. Of the remaining bus stops, one is located on the west side of Grand Avenue south of Pico Boulevard and serves Metro Rapid Bus Line 770; while the other bus stop is located on the north side of Pico Boulevard (along the near side westbound approach) and serves Metro Bus Lines 30 and 330.

The intersection of Grand Avenue/Pico Boulevard provides pedestrian access to these bus stop that includes signalized pedestrian crossing with continental crosswalks and curb access ramps on each corner. Ample street lighting is provided on each corner of the intersection and along the streets. Additionally, adequate sidewalk widths are provided on both sides of Pico Boulevard and Grand Avenue.

Given the overall conditions of the pedestrian and transit facilities that would serve potential Project transit users, the Project would not increase transit demand at bus stops that lack marked crossings, with insufficient sidewalks, or are in isolated, unshaded, or unlit areas. Therefore, the Project conditions present all elements consistent with the evaluation criteria established by the City's *Transportation Assessment Guidelines* and no recommended actions would be required for the Project.

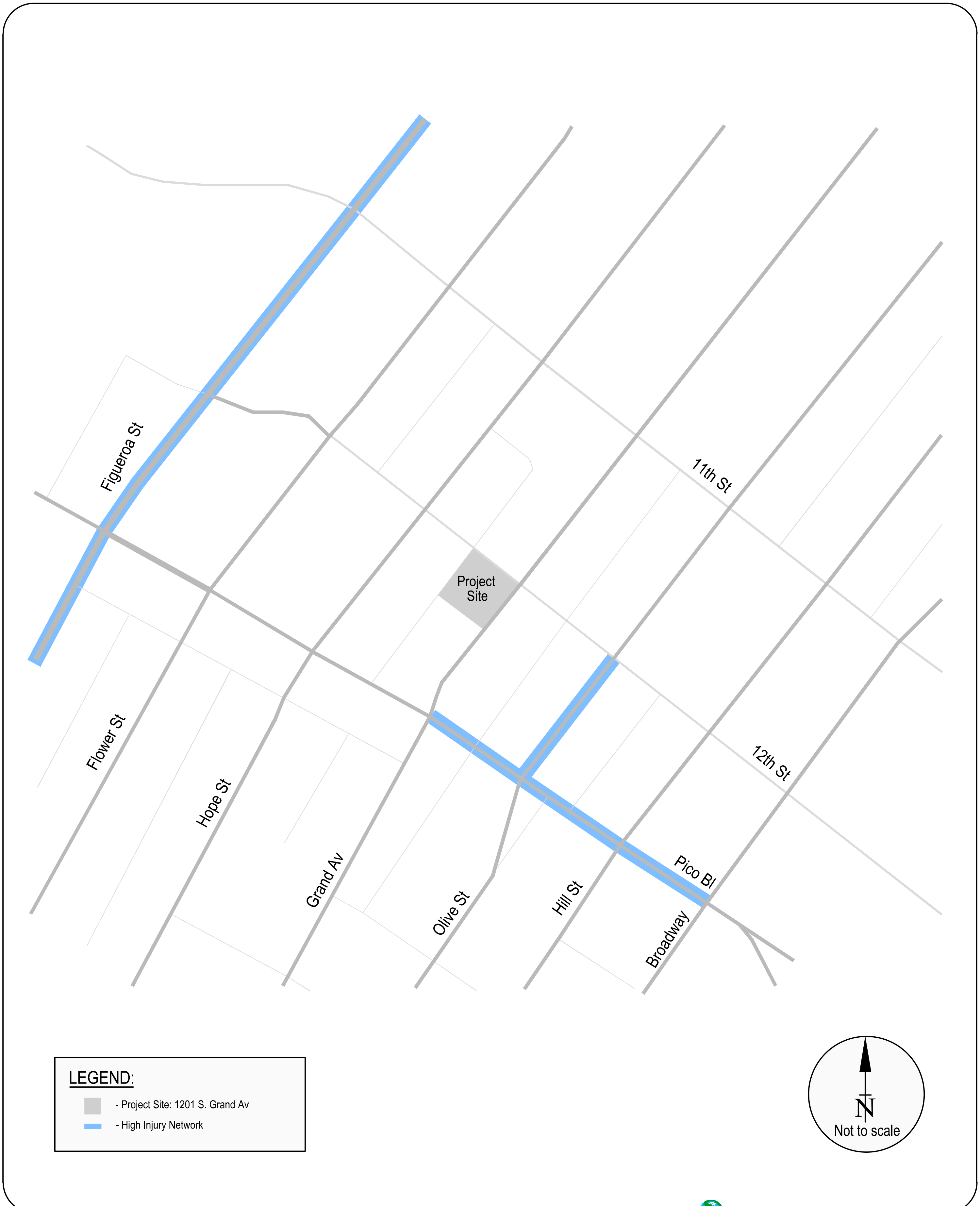

FIGURE 22
CITY OF LOS ANGELES VISION ZERO - HIGH INJURY NETWORK

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High Injury Network

The Project is not located along a street within the High Injury Network as shown in Figure 22. The Project design confirms in alignment with Vision Zero policies. The Project plans to provide 174 bicycle parking spaces (18 short-term and 156 long-term spaces), thereby encouraging residents and employees of the Project to travel via bicycle and creating a bicycle-friendly environment surrounding the Project. Additionally, the Project proposes to remove the existing site driveway along Grand Avenue and provides its proposed access driveways along a north-south alley bordering the western edge of the Project site, away from major pedestrian thoroughfares, enhancing walkability and connectivity. Removal of the existing driveway along Grand Avenue removes potential vehicle/bicycle, vehicle/pedestrian and vehicle/vehicle conflicts in addition to enhancing sight-distances, improving the overall safety along this section of Grand Avenue. Further, the Project will feature street-facing commercial uses proximate to adjacent residential and commercial uses, enriching the existing pedestrian experience and activating the block as a pedestrian-safe environment.

PROJECT ACCESS, SAFETY AND CIRCULATION EVALUATION

This section includes an evaluation of the Project's access and circulation constraints related to the provision of access to and from the Project site based on the screening criteria, evaluation criteria and methodology established in the City's *Transportation Assessment Guidelines*.

Screening Criteria

If the project requires a discretionary action, and the answer is yes to all of the following questions, further analysis will be required to assess whether the project would negatively affect project access and circulation:

- *Does the project require a discretionary action?*
  - Project Response: Yes. The Project requires a discretionary action.

- *Would the project generate a net increase of 250 or more daily vehicle trips?*

    - Project Response: Yes. The Project is estimated to generate a total of 1,309 daily trips.

Therefore, the Project needs to evaluate access, safety and circulation, per City's *Transportation Assessment Guidelines.*

Evaluation Criteria

For development projects, the evaluation criteria consist of operational evaluation and passenger loading evaluation. The operation evaluation should include a quantitative evaluation of the project's expected access and circulation operations. Project access is considered constrained if the project's traffic would contribute to unacceptable queuing on an Avenue or Boulevard (as designated in the Mobility Plan 2035) at project driveway(s) or would cause or substantially extend queuing at nearby signalized intersections. Unacceptable or extended queuing may be defined as follows:

- *Spill over from turn pockets into through lanes.*
- *Block cross streets or alleys.*
- *Contribute to "gridlock" congestion. For the purposes of this section, "gridlock" is defined as the condition where traffic queues between closely-spaced intersections and impedes the flow of traffic through upstream intersections.*

The operation evaluation should identify if project-related traffic queuing is expected to increase traffic diversion so at to burden neighborhood streets.

The passenger loading evaluation should characterize the on-site loading demand of the project frontage and answer these questions: Would the project result in passenger loading demand that could not be accommodated within any proposed on-site passenger loading facility? Would accommodating the passenger loading demand create pedestrian or bicycle conflicts? Which curbside management options should be explored to better address passenger loading needs in the public right-of-way?

Methodology

Operational Evaluation Methodology

Intersection capacity analysis and queue analysis was conducted using the Highway Capacity Manual, 6th Edition (Transportation Research Board, 2016) (HCM) signalized methodologies. For this operational evaluation, four locations consisting of nearby signalized locations were chosen as study intersections and include the following locations:

1. Hope Street and 12th Street
2. Hope Street and Pico Boulevard
3. Grand Avenue and 12th Street
4. Grand Avenue and Pico Boulevard

These locations were analyzed for both morning and evening peak hours for the following conditions:

- Existing (2020) Conditions
- Existing (2020) with Project Conditions
- Cumulative (2025) without Project Conditions
- Cumulative (2025) with Project Conditions

Passenger Loading Evaluation Methodology

Per the City's Transportation Assessment Guidelines, no further evaluation is needed if the estimated peak hour passenger loading demand can be accommodated within the proposed supply of off-street loading spaces. However, if passenger loading cannot be accommodated, evaluation would be needed to consider the context where the queuing would occur (such as street classification, availability of on-street queuing space, level of traffic and other activity) to determine whether this situation would potentially create conflicts with traffic, transit, bicycles, or pedestrians. Consider the extent to which passenger loading can be better accommodated through improved management of curb space.

Project Access and Circulation Operational Evaluation

Operational Evaluation

Per the City's TAG, the HCM methodology for signalized intersections was utilized to calculate operational analysis and vehicle queuing. The operation analysis reports the intersection control delay (in seconds) and corresponding Levels of Service (LOS), and 95th percentile queue length (in feet) for all approaches for the signalized intersections. The 95th percentile queue is the maximum back-of-queue with 95th percentile traffic volumes. Parameters including traffic volume data, lane configurations, available vehicle storage lengths, crosswalk locations, posted speed limits, traffic signal timing and phasing for signalized locations obtained from LADOT, were coded in the Synchro 10 software.

Table 14 presents the results of the operational analysis at the study intersections for existing and future conditions without and with Project. A summary of the results is provided below:

- Analyses indicate that all study locations under existing conditions without and with the Project are estimated to operate at LOS C or better during both the morning and evening peak hours.

- Cumulative (2025) conditions analyses indicate that all study locations would operate at LOS D or better under both without and with the Project. The Project's traffic does not change the levels of service at all study locations compared to the Cumulative without Project conditions during both the morning and evening peak hours.

The operational calculation worksheets for existing and future conditions without and with Project conditions are provided in Appendix D of the report.

TABLE 14
SUMMARY OF INTERSECTION LEVEL OF SERVICE ANALYSIS

No.	Intersection	Peak Hour	Existing (2020) Conditions		Existing (2020) with Project Conditions		Cumulative (2025) w/o Project Conditions		Cumulative (2025) with Project Conditions	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1.	Hope Street & 12th Street	AM	15.4	B	15.5	B	16.7	B	16.8	B
		PM	11.3	B	11.7	B	15.8	B	16.1	B
2.	Hope Street & Pico Boulevard	AM	11.0	B	10.8	B	14.1	B	13.9	B
		PM	18.2	B	18.3	B	26.2	C	27.5	C
3.	Grand Avenue & 12th Street	AM	11.6	B	11.9	B	14.2	B	14.5	B
		PM	16.9	B	17.0	B	19.8	B	20.0	B
4.	Grand Avenue & Pico Boulevard	AM	11.2	B	11.2	B	13.6	B	13.7	B
		PM	23.4	C	23.7	C	39.3	D	42.1	D

Delay - HCM 6th Edition Control Delay in seconds per vehicle.
LOS - Level of Service

Further evaluation was conducted to determine the queue lengths at the study intersections. Table 15 summarizes the results of the queue lengths at the study intersections' approaches and turn pockets. As indicated in the table, there are no left-turn pockets at the study intersections; while two intersections, Hope Street/Pico Boulevard and Grand Avenue/Pico Boulevard, both provide a southbound right-turn pocket. At both these locations, the resulting queue length during the morning and evening peak hours, under all scenarios evaluated, would not result in spill over from the right-turn pocket into the through lanes.

Table 15 further indicates that the Project's weekday AM and PM peak hour traffic volumes would have a nominal effect of vehicle queuing at all of the study intersections. A summary of the results for each intersection is provided below:

- **Intersection of Hope Street/12th Street** - The change in queue length associated with the Project ranges from 1 feet to 7 feet (less than one car length, 25 feet) under existing conditions; and from no change to 8 feet (less than one car length) under future conditions.

- **Intersection of Hope Street/Pico Boulevard** - The change in queue length associated with the Project ranges from no change to 7 feet (less than one car length) under existing conditions; and from no change to 12 feet (less than one car length) under future conditions.

- **Intersection of Grand Avenue/12th Street** - The change in queue length associated with the Project ranges from no change to 6 feet (less than one car length) under existing conditions' and from 1 feet to 8 feet (less than one car length) under future conditions.

- **Intersection of Grand Avenue/Pico Boulevard** - The change in queue length associated with the Project ranges from no change to 21 feet (less than one car length) under existing conditions and from no change to 29 feet (approximately one car length) under future conditions.

The queue analysis worksheets are provided in Appendix F.

TABLE 15
SUMMARY OF INTERSECTION QUEUE ANALYSIS

Intersection	Approach/ Turn Pocket	Peak Hour	Existing (2020) Conditions 95th-Percentile Queue Length [1]	Existing (2020) with Project Conditions 95th-Percentile Queue Length [1]	Cumulative (2025) without Project Conditions 95th-Percentile Queue Length [1]	Cumulative (2025) with Project Conditions 95th-Percentile Queue Length [1]
Hope Street & 12th Street	EBA	AM	16'	18'	84'	86'
		PM	40'	47'	147'	155'
	NBA	AM	58'	59'	105'	106'
		PM	35'	36'	74'	75'
	SBA	AM	50'	51'	77'	77'
		PM	75'	76'	113'	115'
Hope Street & Pico Boulevard	WBA	AM	18'	22'	28'	33'
		PM	236'	243'	377'	388'
	EBA	AM	144'	146'	217'	223'
		PM	159'	165'	383'	395'
	NBA	AM	149'	149'	308'	308'
		PM	138'	139'	271'	271'
	SBA	AM	81'	81'	105'	105'
		PM	114'	115'	148'	148'
	SBR	AM	55'	55'	42'	42'
		PM	73'	76'	121'	122'
Grand Avenue & 12th Street	EBA	AM	42'	48'	98'	106'
		PM	77'	82'	191'	195'
	SBA	AM	58'	58'	101'	102'
		PM	230'	231'	314'	316'
Grand Avenue & Pico Boulevard	WBA	AM	113'	117'	193'	200'
		PM	285'	306'	582'	611'
	EBA	AM	74'	77'	120'	127'
		PM	124'	126'	193'	196'
	SBA	AM	94'	94'	161'	162'
		PM	298'	298'	413'	414'
	SBR	AM	27'	28'	35'	35'
		PM	55'	57'	100'	108'

EBA = Eastbound Approach; WBA = Westbound Approach; NBA = Northbound Approach; SBA = Southbound Approach
SBR = Southbound Right Turn Pocket

[1] 95th-Percentile queue length from Highway Capacity Manual (HCM) 6th Edition methodology using Synchro 10 software. The queue length reported is the one for the lane with the highest queue in the lane group.

The Project driveways are located along the alley on the western frontage of the Project site and not along an Avenue or Boulevard and would not contribute to unacceptable queuing on an Avenue or Boulevard at the Project's driveways. No further evaluation at the Project driveways is required.

Based on the above results, the Project is not required to provide any corrective actions.

Passenger Loading Evaluation

All passenger loading can be accommodated on-site. As shown in Figure 2 (Chapter 1), the Project would provide a loading zone at the ground floor level. The Project is not proposing a passenger loading zone along its 12th Street or Grand Avenue frontages. No additional constraints are anticipated and therefore, no further evaluation is needed.

PROJECT CONSTRUCTION

This section addresses activities associated with Project construction. This project construction assessment is based on the screening criteria, evaluation criteria and methodology established in the City's *Transportation Assessment Guidelines*.

Screening Criteria

If the answer is yes to any of the following questions, further analysis will be required to assess if the project construction activity could negatively affect existing pedestrian, bicycle, transit, or vehicle circulation:

- *Would a project that requires construction activities to take place within the right-of-way of a Boulevard or Avenue which would necessitate temporary lane, alley, or street closures for more than one day (including day and evening hours, and overnight closures if on a residential street?)*

- Project Response: No temporary lane, alley, or street closures are anticipated during construction. However, the construction activities associated with the Project are anticipated to result in the closure of the sidewalk and on-street parking along the Project's Grand Avenue (Modified Avenue II) frontage during the period of construction. Canopied pedestrian pathway will continue to allow pedestrian circulation during construction.

- *Would a project require construction activities to take place within the right-of-way of a Collector or Local Street which would necessitate temporary lane, alley, or street closures for more than seven days (including day and evening hours, and including overnight closures if on a residential street)?*

    - Project Response: No temporary lane, alley, or street closures are anticipated along the Project's 12th Street (Modified Collector) frontage. However, the construction activities are anticipated to result in closure of sidewalk and on-street parking along the Project's 12th Street frontage during the period of construction. Canopied pedestrian pathway will continue to allow pedestrian circulation during construction.

- *Would in-street construction activities result in the loss of regular vehicle, bicycle, or pedestrian access, including loss of existing bicycle parking to an existing land use for more than one day, including day and evening hours and overnight closures if access is lost to residential units?*

    - Project Response: Yes. The construction activities are anticipated to result in closure of the sidewalks and on-street parking along the Project's Grand Avenue and 12th Street frontages during the period of construction. Canopied pedestrian pathways will continue to allow pedestrian circulation during construction. The Project's construction activities would not result in the loss of bicycle access.

- *Would in-street construction activities result in the loss of regular ADA pedestrian access to an existing transit station, stop, or facility (e.g., layover zone) during revenue hours?*

    - Project Response: No. Construction activities would not result in the loss of regular ADA pedestrian access to an existing transit station, stop, or facility (e.g., layover zone) during revenue hours. There will be pedestrian canopies around the construction site for the duration of the Project.

- *Would in-street construction activities result in the temporary loss for more than one day of an existing bus stop or rerouting of a bus route that serves the project site?*
    - Project Response: No. Construction activities would not result in loss of an existing bus stop or rerouting of a bus route.

Based on the responses to the screening criteria questions, further analysis to assess if the project construction activity could negatively affect existing pedestrian, bicycle, transit, or vehicle circulation would be required. Details of the evaluation are provided below.

Evaluation Criteria

The City's Transportation Assessment Guidelines has established a set of evaluation criteria thresholds to determine if Project construction would substantially interfere with pedestrian, bicycle, transit, or vehicle circulation and accessibility to adjoining areas. The evaluation criteria are based on the following factors:

- *Temporary transportation constraints:*
    - *The length of time of temporary street closures or closures of two or more travel lanes;*
    - *The classification of the street (major arterial, state highway) affected;*
    - *The existing congestion levels on the affected street segments and intersections;*
    - *Whether the affected street directly leads to a freeway on- or off-ramp or other state highway;*
    - *Potential safety issues involved with street or lane closures;*
    - *The presence of emergency services (fire, hospital, etc.) located nearby that regularly use the affected street.*

- *Temporary loss of access:*
    - *The length of time of any loss of pedestrian or bicycle circulation past a construction area;*
    - *The length of time of any loss of vehicular, bicycle, or pedestrian access to a parcel fronting the construction area;*
    - *The length of time of any loss of ADA pedestrian access to a transit station, stop, or facility;*
    - *The availability of nearby vehicular or pedestrian access within ¼ mile of the lost access;*

- *The type of land uses affected, and related safety, convenience, and/or economic issues.*

- *Temporary Loss of Bus Stops or Rerouting of Bus Lines:*
  - *The length of time that an existing bus stop would be unavailable or that existing service would be interrupted;*
  - *The availability of a nearby location (within ¼ mile) to which the bus stop or route can be temporarily relocated;*
  - *The existence of other bus stops or routes with similar routes/destinations within a ¼- mile radius of the affected stops or routes;*
  - *Whether the interruption would occur on a weekday, weekend or holiday, and whether the existing bus route typically provides service that/those day(s).*

Methodology

The project construction evaluation includes description of the physical setting, including the classification of adjacent streets, on-street parking conditions, including bicycle parking, in the immediate vicinity of the construction project, a description of the land uses potentially affected by construction, and an inventory of existing transit lines, bus stops, transit stations, and transit facilities within a ¼ mile radius of the construction site. Review proposed construction procedures/plans to determine whether construction activity within the street right-of-way would require 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.*

Compare the results to the evaluation criteria to determine the level of impact.

Project Construction Assessment

The Project is located on the southwest corner of the intersection of Grand Avenue/12th Street. The northern frontage is defined by 12th Street which is classified as Modified Collector. Grand Avenue is classified as a Modified Avenue II and defines the Project's eastern frontage. A total of seven metered on-street parking spaces are located on both Grand Avenue (four metered spaces) and 12th Street (three metered spaces) along the Project's frontages. The Project construction activities would result in the temporary closure of these seven on-street parking spaces. The Project would need to coordinate with LADOT Parking Meter Division to assess the loss of parking revenue during the period of construction when use of these spaces would not be available.

A southbound bike lane is provided along Grand Avenue that runs past the Project's frontage. This bike lane provides connectivity to east-west bike lanes to the south. No bike parking is provided in the immediate vicinity of the Project construction. Bicycle racks are provided on the east side of Grand Avenue, across from the Project site and will not be affected by Project construction. No temporary closures of the bicycle lane along Grand Avenue are anticipated to occur due to construction activities.

An inventory of existing bus lines within study is summarized in Table 2 (Chapter 2) and shown in Figure 7 (Chapter 2). As indicated in the table, 47 bus lines and 2 light rail lines serve the study area. As shown in Figure 7, several bus lines travel along Grand Avenue adjacent to the Project site including Metro Bus Lines 70, 70, 76, 78, 79, 96, 378, LADOT Bus Lines 431 and 437, and Santa Monica Big Blue Bus Rapid Bus Line 10. A bus stop located on the northwest corner of Grand Avenue/Pico Boulevard services these transit lines. This bus stop is located south of the Project site. Table 1 (Chapter 2) provides an inventory of the other bus stops in the study area and are also shown in Figure 5 (Chapter 2). No transit system effects during construction of the Project.

The duration of the total Project construction period is estimated to be 33 months. This would entail 2 months of demolition, 2 months of excavation and grading, 27 months of construction (start of foundation to completion of the building), and 2 months of paving and architectural coating. Construction activities will occur Monday through Friday from 7:00 a.m. to 9:00 p.m. and on Saturday (and holidays) from 8:00 a.m. to 6:00 p.m. These hours are consistent with the City's noise ordinance.

Temporary Transportation Constraints

The nearby adjacent intersections along Grand Avenue at 12th Street and Pico Boulevard currently operate at excellent levels of service during the morning and evening peak hours. The traffic flow along Grand Avenue is generally not constrained. Grand Avenue provides access to and from the I-10 Freeway, south of the Project site. Also, a hospital is located south of the Project site and obtains access from Grand Avenue. Since the proposed construction procedures/plans do not include closure of any travel lanes along Grand Avenue (Modified Avenue II) and 12th Street (Modified Collector) along the Project's frontages during the duration of construction, no temporary transportation constraints are anticipated.

Temporary Loss of Access

As stated earlier, Project construction would temporarily restrict the metered on-street parking along the Project's Grand Avenue and 12th Street frontages during the period of construction. A total of seven metered on-street parking spaces would be temporarily restricted including three parking spaces on 12th Street and four parking spaces on Grand Avenue.

There will be fencing and barricades along 12th Street and Grand Avenue, along the entirety of the property lines adjacent to the site. Sidewalks along the Project's frontages generally will be closed during construction. However, there will be pedestrian walkways with canopies for the duration of the Project construction, in order to maintain pedestrian circulation. No ADA pedestrian access impacts at the Grand Avenue/12th Street intersection is anticipated due to the Project construction activities. Therefore, construction activities would not result in the loss of regular ADA pedestrian access to an existing transit station, stop, or facility during revenue hours.

Project construction would not affect the sidewalks fronting the construction area including the sidewalk located on the north side of 12th Street and the sidewalk located on the east side of Grand Avenue. Additionally, there are no vehicular driveways to parcels fronting the construction area. Therefore, Project construction is not anticipated to result in any loss of vehicular, bicycle, or pedestrian access to parcels fronting the construction area.

Temporary Loss of Bus Stops or Rerouting of Bus Lines

No bus stops would be removed or relocated during construction. No transit bus rerouting would be required during Project construction.

Analysis/Evaluation

The Project construction assessment identified no potential bicycle or transit constraints during construction. However, temporary loss of on-street parking along the northern (12th Street) and eastern (Grand Avenue) Project frontages are anticipated during construction. Sidewalks along these frontages would also be temporarily closed, although canopied pedestrian walkways would be provided to maintain pedestrian circulation. In order to address these construction effects, potential corrective conditions could include:

- Preparation of a traffic management plan
- Consult LADOT's Parking Meters Division regarding revenue recovery costs for the removal of parking meter spaces
- Coordinate access with adjacent property owners and tenants.

VI. SUMMARY OF CONCLUSIONS

This transportation assessment study was prepared consistent with the current City of Los Angeles Transportation Assessment Guidelines (July 2019) for both CEQA and non-CEQA evaluations as applicable. The CEQA evaluation consists of analysis of transportation impacts for the following relevant City adopted thresholds for development projects:

- Threshold T-1 – Conflicting with Plans, Programs, Ordinances or Policies
- Threshold T-2.1 - Causing Substantial Vehicle Miles Traveled (VMT), and
- Threshold T-3 – Substantially Increasing Hazards Due to a Geometric Design Feature or Incompatible Use.

The non-CEQA Transportation Analysis consists of Pedestrian, Bicycle and Transit Access Assessment, Project Access, Safety and Circulation Evaluation and Project Construction Assessment.

Raju Associates, Inc. performed this detailed study and the following summarizes the results of the analysis:

PROJECT DESCRIPTION

The proposed Project consists of a high-rise residential mixed-use development with up to 312 multifamily dwelling units and approximately 7,100 square feet of retail / high-turnover restaurant use. The Project would provide a total of 352 vehicle parking spaces and 174 bicycle parking spaces (156 long-term spaces and 18 short-term spaces). The site contains an existing three-story, approximately 44,769 square-foot commercial building and an adjacent surface parking lot that would be demolished. Approximately 8,000 square feet of office use is existing on-site. The Project is anticipated to be completed in the Year 2025.

- Currently, vehicular access to the Project site is provided by a driveway located along Grand Avenue and a driveway located along an adjacent alley. The Project proposes to provide all vehicular access via two full-access driveways along an adjacent north-south alley mid-block between S. Hope Street and S. Grand Avenue, on the west side of the Project site. Pico Boulevard and 12th Street would provide access to the Project driveways via the adjacent alley.

- The Project would generate a net increase of 1,309 daily trips, of which a net total of approximately 102 trips would occur during the morning peak hour and 119 trips during the evening peak hour.

EXISTING CONDITIONS

- A total of four intersections were evaluated within the study area for this Project. The study area includes key intersections within a distance of 1,320-foot radius from the Project site. The study area is generally bounded by 11th Street on the north, 15th Street on the south, Figueroa Street on the west and Broadway on the east.

- Currently, all four study intersection locations are operating at Levels of Service (LOS) B or better during both the morning and evening peak hours in Existing (2020) conditions.

CEQA ANALYSIS OF TRANSPORTATION IMPACTS

- Threshold T-1 – Conflicting with Plans, Programs, Ordinances or Policies - This threshold test is conducted to assess whether a project would conflict with an adopted program, policy, plan, or ordinance that is adopted to protect the environment. In general, transportation policies or standards adopted to protect the environment are those that support multimodal transportation options and a reduction in VMT.

  - Based on the responses to the questions (from *Table 2.1-2: Questions to Determine Project Applicability to Plans, Policies and Programs*) and a review of relevant policies and programs corresponding to the questions to assess whether the proposed Project precludes the City's implementation of any adopted policy and/or program, it was observed that the Project generally conforms with the City's development policies and standards. The Project does not conflict with a program, plan, ordinance, or policy addressing the circulation system including transit, roadways, bicycle, and pedestrian facilities. Therefore, the Project does not cause a significant impact relative to Threshold T-1.

  - An examination of cumulative assessment of the Project and related projects in the vicinity was conducted. It was observed that there would not be a significant cumulative impact relative to this Threshold, due to the Project and related projects.

- Threshold T-2.1 – Causing Substantial Vehicle Miles Traveled (VMT) - For land use projects, the intent of this threshold is to assess whether a land use project or plan causes substantial vehicle miles traveled.

  - Utilizing the City's VMT Calculator Tool (version 1.2), the VMT analysis was prepared for the Project. The Project would result in a daily VMT of 7,602 and a

Household VMT per capita of 5.6. The Project's Household VMT per capita (5.6) is less than the impact threshold of 6.0. Therefore, the Project does not cause a significant impact relative to Threshold T-2.1.

- Per cumulative impact methodology, projects that do not demonstrate a project impact by applying an efficiency-based impact threshold (i.e. VMT per capita or VMT per employee) in the project impact analysis, do not cause cumulative VMT impact since a less than significant project impact conclusion is sufficient in demonstrating that there would be no cumulative VMT impact. Projects that fall under the City's efficiency-based impact thresholds are already shown to align with the long-term VMT and greenhouse gas reduction goals of SCAG's RTP/SCS. Since the Project does not cause a significant impact using the efficiency-based impact threshold (Household VMT per capita), the Project would not cause cumulative significant impact relative to Threshold T-2.1.

• <u>Threshold T-3 – Substantially Increasing Hazards Due to a Geometric Design Feature or Incompatible Use</u> - Impacts regarding the potential increase of hazards due to a geometric design feature generally relate to the design of access points to and from the project site, and may include safety, operational, or capacity impacts.

  - Based on review of the preliminary site plan, Project description and analysis of the impact criteria factors, it was observed that the Project would not substantially increase hazards due to a geometric design feature or incompatible uses. Therefore, the Project does not cause a significant impact relative to the Threshold T-3.

  - A review and examination of the site plans of the cumulative projects including those of the proposed Project reveals that the combined effects of these related projects and the proposed Project would not substantially increase hazards due to a geometric design feature or incompatible uses. Therefore, the Project along with the related projects would not cause significant cumulative impact for Threshold T-3.

  - The Project is not located along a street within the High Injury Network. However, the Project has taken measures to align with Vision Zero policies.

Summarizing, the Project would not cause significant impacts relative to any of the City established CEQA thresholds including the following: Threshold T-1 – Conflicting with Plans, Programs, Ordinances or Policies, Threshold T-2.1 - Causing Substantial Vehicle Miles Traveled (VMT) and Threshold T-3 – Substantially Increasing Hazards Due to a Geometric Design Feature or Incompatible Use. Therefore, no project-specific mitigation measures would be required.

NON-CEQA TRANSPORTATION ANALYSIS

- Pedestrian, Bicycle and Transit Access Assessment - This section includes an evaluation of the pedestrian, bicycle, and transit facilities and provides an assessment to determine the Project's potential effect on these transportation facilities in the vicinity of the proposed Project. Per the City's *Transportation Assessment Guidelines*, the effects could be physical (through removal, modification, or degradation of facilities) or demand-based (by adding pedestrian or bicycle demand to inadequate facilities).

    - Removal or Degradation of Facilities. Based on a review of the Project site plan in conjunction with an assessment of the existing pedestrian, bicycle, and transit facilities discussed above, the Project does not propose removal of facilities nor would the Project contribute to the degradation of facilities. Therefore, no recommended actions are required by the Project.

    - Intensification of Use. The Project would not increase the need to cross a street at unmarked pedestrian crossings or unsignalized or uncontrolled intersections where a crossing is not available without significant rerouting. Also, the Project would not result in new pedestrian demand between Project site entries/exits and major destinations or transit stops expected to serve the development where there are missing pedestrian facilities or substandard pedestrian facilities. Therefore, no recommended actions are required by the Project.

- Project Access, Safety and Circulation Evaluation - This section includes an evaluation of the Project's access and circulation constraints related to the provision of access to and from the Project site based on the screening criteria, evaluation criteria and methodology established in the City's *Transportation Assessment Guidelines*.

    - Operational Evaluation. The four study intersections would operate at LOS C or better during both the morning and evening peak hours under existing conditions without and with Project. Under Cumulative (2025) conditions without and with the Project, the four study intersections are projected to operate at LOS D or better during both the morning and evening peak hours. The queue analysis during AM and PM peak hours indicates that the study intersections would not result in spill over from turn pockets into through lanes. Also, the Project's weekday AM and PM peak hour traffic volumes would have a nominal effect of vehicle queuing at all of the study intersections. Additionally, the Project driveways are located along the alley on the western frontage of the Project site and not along an Avenue or Boulevard and would not contribute to unacceptable queuing on an Avenue or Boulevard at the Project's driveways. Therefore, no recommended actions are required by the Project.

    - Passenger Loading Evaluation. Based on review of the Project site plan, all passenger loading demand can be accommodated on-site. No further evaluation is needed, and no additional constraints are expected. Therefore, no recommended actions are required by the Project.

- Project Construction – This section addresses activities associated with project construction. This project construction assessment is based on the screening criteria, evaluation criteria and methodology established in the City's Transportation Assessment Guidelines.

    - The Project construction assessment identified no potential bicycle or transit constraints during construction. However, temporary loss of on-street parking along the northern (12th Street) and eastern (Grand Avenue) Project frontages are anticipated during construction. Sidewalks along these frontages would also be temporarily closed, although canopied pedestrian walkways would be provided to maintain pedestrian circulation. In order to address these construction effects, potential corrective conditions could include:

        - Preparation of a traffic management plan
        - Consult LADOT's Parking Meters Division regarding revenue recovery costs for the removal of parking meter spaces
        - Coordinate access with adjacent property owners and tenants.

APPENDIX A

LADOT Memorandum of Understanding (MOU)

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: 1201 S. Grand Avenue Mixed-Use Project

Project Address: 1201-1215 S. Grand Avenue and 410 W. 12th Street, Los Angeles, CA 90015

Project Description: The Project consists of up to 312 multifamily (high-rise) dwelling units and 7,100 square feet of high-turnover restaurant/retail use, replacing 8,000 square feet of office use.

LADOT Project Case Number: CEN 20-49737 Project Site Plan attached? *(Required)* ☒ Yes ☐ No

II. TRIP GENERATION

Geographic Distribution: N 40% (25%) S 15% (22%) E 20% (18%) W 25% (30%) Residential (Commercial)

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

Trip Generation Rate(s)? ITE 10th Edition / Other ITE 10th Edition Rates, LADOT Local Trip Rates

Trip Generation Adjustment (Exact amount of credit 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 (NET)	26	76	102
PM Trips (NET)	84	35	119

Daily Trips 1,309
(From VMT Calculator version 1.2)

III. STUDY AREA AND ASSUMPTIONS

Project Buildout Year: 2025 Ambient or CMP 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 (See Attachment B)

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

1 Hope Street & 12th Street
3 Grand Avenue & 12th Street
2 Hope Street & Pico Boulevard
4 Grand Avenue & Pico Boulevard

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

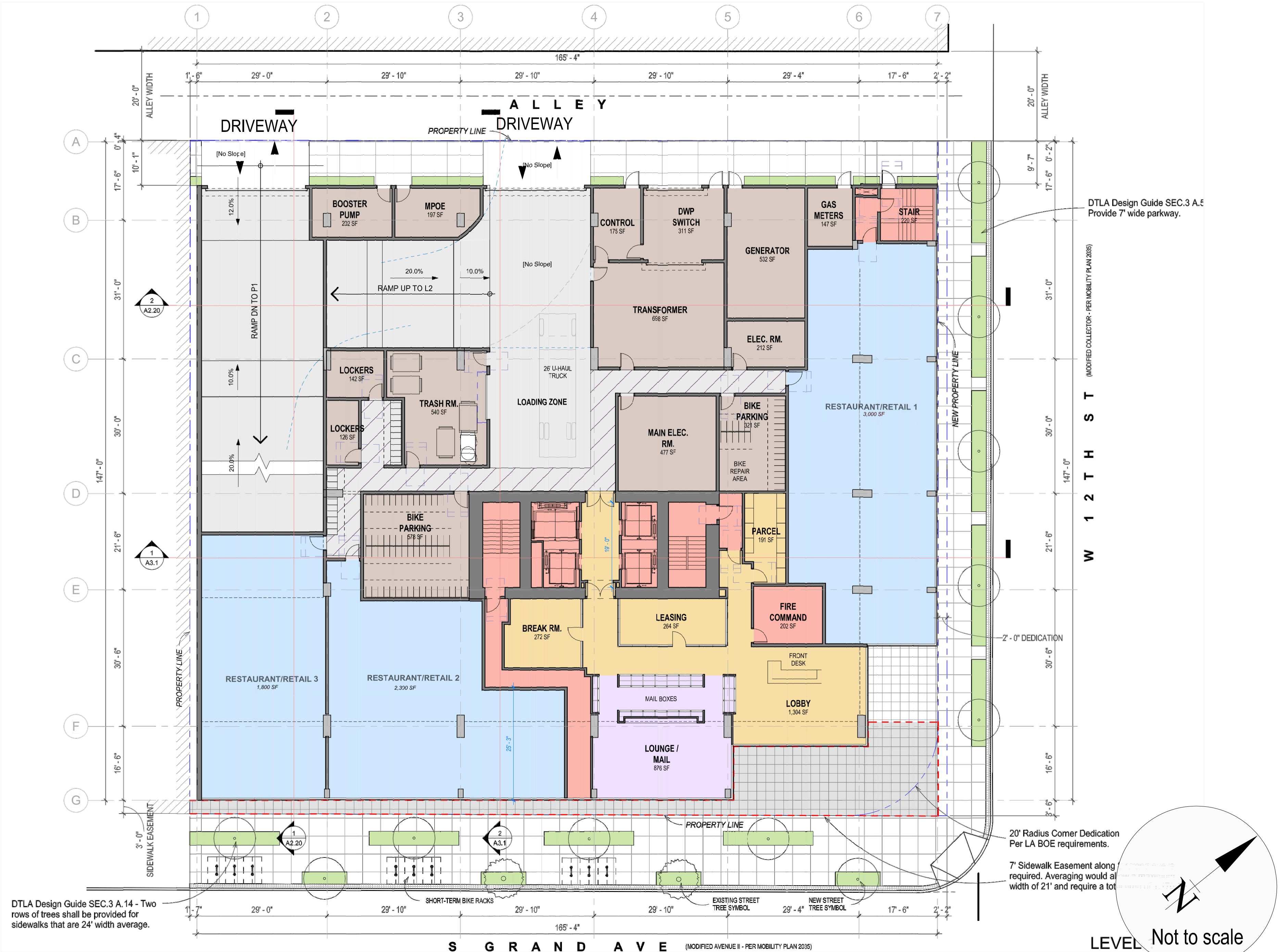
Is the project's building frontage encompassing an entire block along Avenue or Boulevard as classified by the City's General Plan? ☐ Yes ☒ No

V. CONTACT INFORMATION

	CONSULTANT	DEVELOPER
Name:	Raju Associates, Inc.	Mr. Simon Kaplan, ECO Towers, LLC
Address:	505 E. Colorado Bl, Suite 202, Pasadena, CA	865 S. Figueroa St, Suite 2760, Los Angeles, 90017
Phone Number:	(626) 792-2700	(213) 481-5484
E-Mail:	srinath.raju@rajuassociates.com	skaplan@city-century.com

Approved by:	x Srinath R	4/14/2020	x [signature]	4/29/2020
	Consultant's Representative	Date	LADOT Representative	*Date

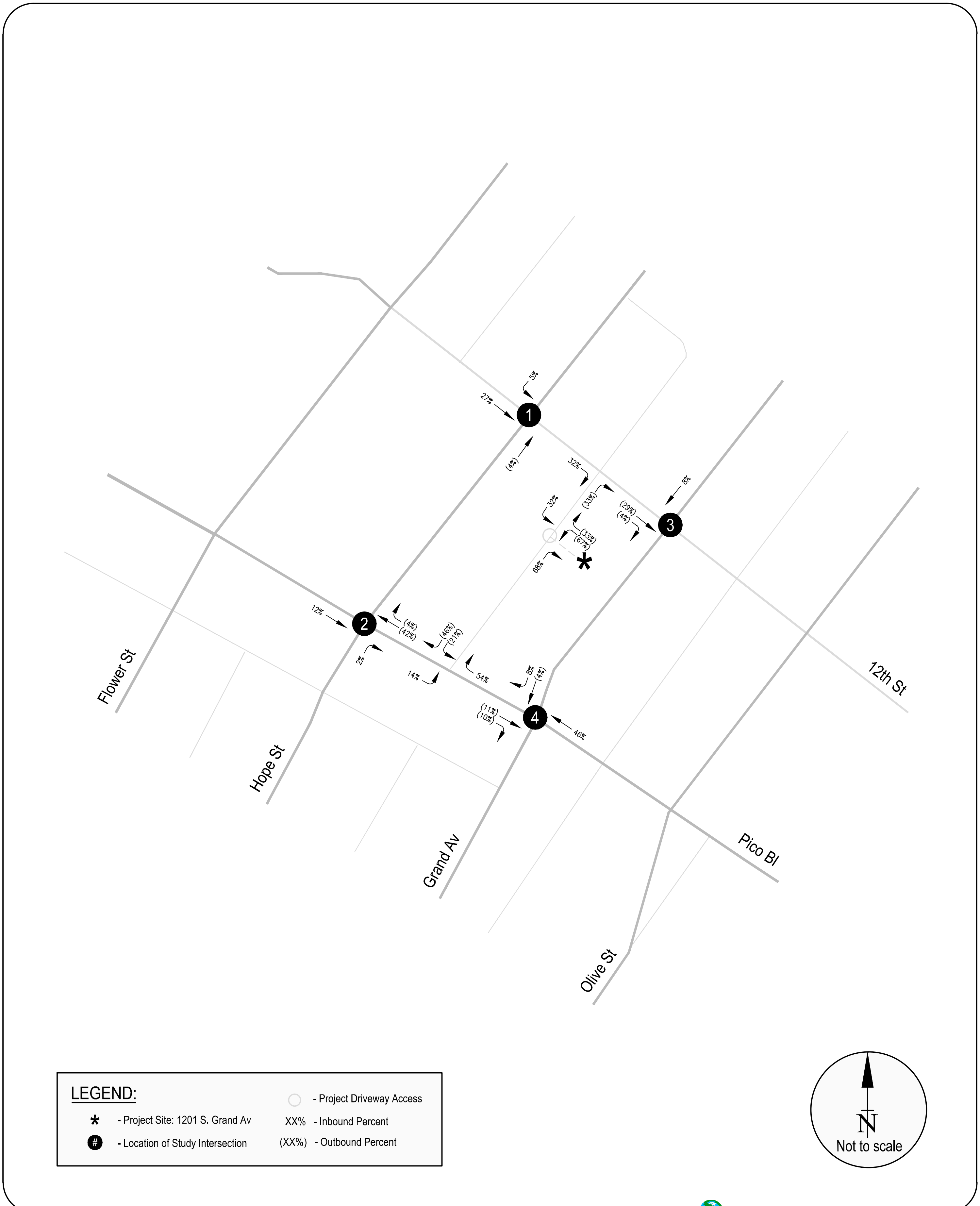
*MOUs are generally valid for two years after signing. If after two years a transportation assessment has not been submitted to LADOT, the developer's representative shall check with the appropriate LADOT office to determine if the terms of this MOU are still valid or if a new MOU is needed.



SOURCE: MVE+PARTNERS

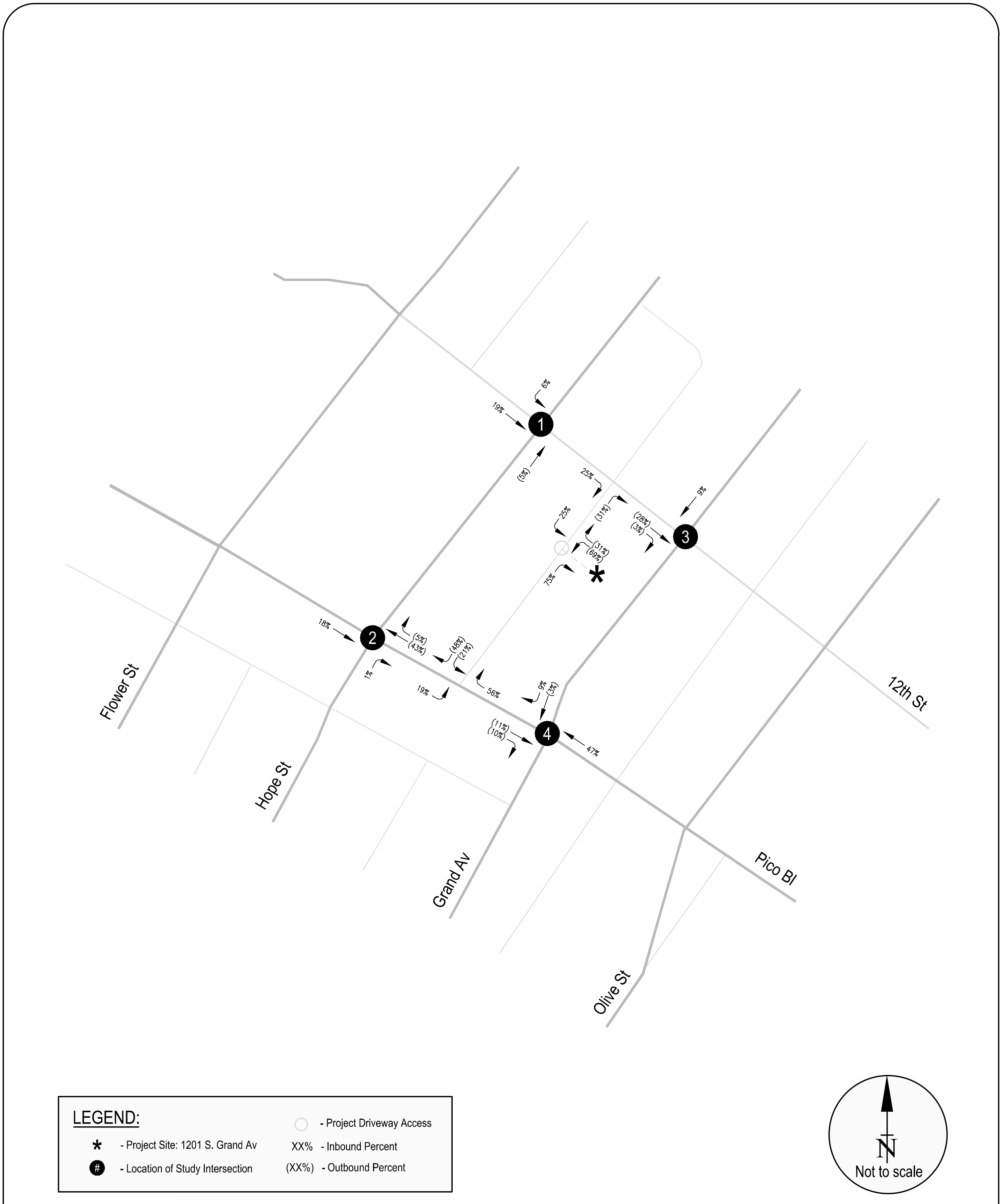
ATTACHMENT A
PROJECT SITE PLAN - GROUND FLOOR

RAJU Associates, Inc.



ATTACHMENT B1
PROJECT TRIP DISTRIBUTION - RESIDENTIAL USES

RAJU Associates, Inc.



ATTACHMENT B2
PROJECT TRIP DISTRIBUTION - COMMERCIAL USES

RAJU Associates, Inc.

ATTACHEMENT C
ESTIMATED PROJECT TRIP GENERATION

	Size	Daily	AM Peak Hour			PM Peak Hour		
			IN	OUT	TOTAL	IN	OUT	TOTAL
Proposed Project								
Apartments	312 d.u.	-	9	63	72	66	28	94
Internal Capture (10%)			*(1)*	*(6)*	*(7)*	*(7)*	*(3)*	*(10)*
High-Turnover Restaurant	7,100 s.f.	-	39	32	71	43	26	69
Internal Capture (10%)			*(4)*	*(3)*	*(7)*	*(4)*	*(3)*	*(7)*
*Transit/Walk Credit (15%)**			*(5)*	*(4)*	*(9)*	*(6)*	*(3)*	*(9)*
*Pass-By Trips (20%)***			*(6)*	*(5)*	*(11)*	*(7)*	*(4)*	*(11)*
Project Trip Generation Total		1,366 [1]	32	77	109	85	41	126
Existing Uses								
Office	8,000 s.f.	57 [1]	6	1	7	1	6	7
Project Net Trip Generation Total		**1,309**	**26**	**76**	**102**	**84**	**35**	**119**
Trip Rates [2]								
Multifamily High-Rise [3]	Trips per d.u.	[1]	12%	88%	0.21	70%	30%	0.19
General Office (ITE Land Use 710)	Trips per 1,000 s.f.	[1]	86%	14%	0.83	17%	83%	0.87
High-Turnover Restaurant (ITE Land Use 932)	Trips per 1,000 s.f.	[1]	55%	45%	9.94	62%	38%	9.77

* Transit /walk trips determined after reduction of internal capture.
** Pass-by trips determined after reduction of internal capture and transit/walk trips.

[1] Project and existing daily trips calculated using the City of Los Angeles' VMT Caluclator Tool (version 1.2).

[2] *Trip Generation Manual*, 10th Edition, ITE 2017, unless otherwise noted. For Land Use Code 710-General Office, trip rates for the Dense Multi-Use Urban setting were used. For Land Use Code 932-High-Turnover Restaurant, trip rates for the General Urban/Suburban setting were used, as no rates are provided for the Dense Multi-Use Urban setting. Transit/walk adjustments were, therefore, only applied to the proposed High-Turnover (Sit-Down) Restaurant land use.

[3] Multifamily High-Rise trip generation rates from *Los Angeles Department of Transportation (LADOT) Transportation Guidelines, Table 3.3-1: Local Trip Generation Rates for Multifamily Mid-Rise and High-Rise Residential Land Uses in Dense Multi-Use Urban Areas,* July 2019. Trip generation rates for Multifamily High-Rise were utilized.

ATTACHMENT D
ESTIMATED WEEKDAY TRIP GENERATION OF RELATED PROJECTS

Map No.	Project Name	Location	Description	Daily	AM Peak Hour			PM Peak Hour		
					IN	OUT	TOTAL	IN	OUT	TOTAL
City of Los Angeles [1]										
1	Mixed-Use Project	1111 S. Broadway	391-unit apartments, 41,140 s.f. office use, and 40,000 s.f. retail use.	5,198	144	176	320	258	274	532
2	Hotel Project	1138 S. Broadway	138-room hotel.	644	20	25	45	22	25	47
3	Mixed-Use Project	1148 S. Broadway	94-unit apartments and 2,500 s.f. retail use.	553	8	30	38	32	18	50
4	Luxe City Center Hotel Project	1020 S. Figueroa Street	300-room hotel, 650-unit condominiums, 40,000 s.f. retail use and 40,000 s.f. restaurant use.	6,583	204	274	478	312	227	539
5	Fig + Pico Conference Center Hotels	1248 S. Figueroa Street	1,162-room hotel, 6,573 s.f. restaurant use and 6,573 s.f. high-turnover restaurant use.	5,720	192	125	317	203	212	415
6	City Lights on Fig Hotel Project	1300 S. Figueroa Street	1,024-room hotel, replacing 100-unit apartments.	9,134	398	288	686	351	366	717
7	Residential Project	1400 S. Figueroa Street	106-unit apartments and 4,834 s.f. retail/restaurant use.	647	10	38	48	39	22	61
8	Mixed-Use Project	1212 S. Flower Street	730-unit condominiums, 10,500 s.f. commercial use and 70,465 s.f. office use.	3,956	78	233	311	229	121	350
9	Mixed-Use Project	1323 S. Flower Street	132-room hotel, 47-unit apartments and 4,000 s.f. bar/restaurant use.	1,287	33	40	73	61	39	100
10	Mixed-Use Project	1334 S. Flower Street	146-unit apartments and 6,270 s.f. retail/restaurant use.	796	-1	49	48	51	16	67
11	Residential Project	1400 S. Flower Street	147-unit apartments and 6,921 s.f. retail use.	798	-1	49	48	51	16	67
12	South Park Towers Project	1600 S. Flower Street	250-unit apartments, 300-room hotel and 13,120 s.f. commercial use.	1,788	77	91	168	55	36	91
13	Restaurant Project	1036 S. Grand Avenue	7,149 s.f. restaurant use.	492	2	3	5	99	35	134
14	DTLA South Park Site 1	1120 S. Grand Avenue	666-unit apartments and 20,690 s.f. retail use.	2,730	42	127	169	136	93	229
15	Grand Residence	1229 S. Grand Avenue	161-unit condominiums and 3,000 s.f. restaurant use.	1,116	23	62	85	62	33	95
16	Mixed-Use Project	1323 S. Grand Avenue	284-unit apartments, 5,200 s.f. retail use and 1,100 s.f. restaurant use.	2,158	33	118	151	125	74	199
17	Mixed-Use Project	1030 S. Hill Street	700-unit apartments, 7,000 s.f. retail use and 7,000 s.f. restaurant use.	3,392	49	193	242	181	104	285
18	11th & Hill Project	1115 S. Hill Street	172-unit condominiums and 6,850 s.f. restaurant use.	543	-45	40	-5	50	-7	43
19	14th/Hill St (DTLA) Mixed-Use Project	1340 S. Hill Street	235-unit apartments, 5,250 s.f. retail use and 4,000 s.f. restaurant use.	1,755	11	103	114	108	30	138
20	Amacon Project	1133 S. Hope Street	208-unit apartments and 5,029 s.f. retail use.	1,543	20	74	94	91	50	141
21	Hotel Project	1219 S. Hope Street	75-room hotel and 2,650 s.f. retail use.	613	24	16	40	23	22	45
22	The Morrison Hotel Project	1246 S. Hope Street	258-unit apartments, 265-room hotel and 6,000 s.f. retail use.	5,433	141	128	269	269	199	468
23	Mixed-Use Project	1300 S. Hope Street	419-unit apartments and 42,200 s.f. retail use.	4,280	88	105	193	136	102	238
24	Mixed-Use Project	1045 S. Olive Street	800-unit condominiums and 15,000 s.f. commercial use.	2,227	39	157	196	138	62	200
25	Mack Urban Project	1105 S. Olive Street	Site 2: 537-unit apartments, 3,800 s.f. restaurant use and 3,800 s.f. retail use. Site 3: 713-unit apartments, 7,100 s.f. restaurant use and 7,100 s.f. retail use.	5,241	122	278	400	258	160	418
26	Hotel Project	1155 S. Olive Street	258-room hotel, 1,896 s.f. retail use and 2,722 s.f. restaurant use.	2,008	77	56	133	77	72	149
27	Mixed-Use Project	1340 S. Olive Street	156-unit apartments, 5,000 s.f. retail use and 10,000 s.f. restaurant use.	1,700	51	82	133	89	57	146
			RELATED PROJECTS TRIP GENERATION TOTAL	72,335	1,839	2,960	4,799	3,506	2,458	5,964

* Includes related project 0.25 miles from the furthest study intersection.
[1] Source: Los Angeles Department of Transportation - March 31, 2020.

CITY OF LOS ANGELES VMT CALCULATOR Version 1.2

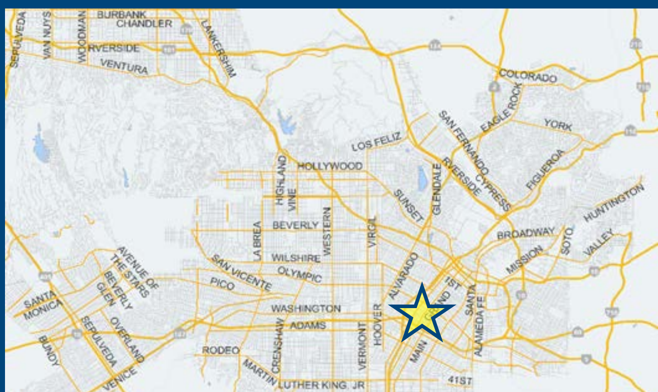
Project Screening Criteria: Is this project required to conduct a vehicle miles traveled analysis?

Project Information

Project: 1201 S. GRAND AVENUE PROJECT

Scenario: WWW

Address: 34.040164, -118.263696



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

○ Yes ○ No

Existing Land Use

Land Use Type	Value	Unit
Office | General Office	8	ksf
Office | General Office	8	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	7.1	ksf
Housing | Multi-Family	312	DU
Retail | High-Turnover Sit-Down Restaurant	7.1	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 Project
57 Daily Vehicle Trips	1,366 Daily Vehicle Trips
417 Daily VMT	7,602 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

Criterion	Value
The net increase in daily trips < 250 trips	1,309 Net Daily Trips
The net increase in daily VMT ≤ 0	7,185 Net Daily VMT
The proposed project consists of only retail land uses ≤ 50,000 square feet total.	7.100 ksf

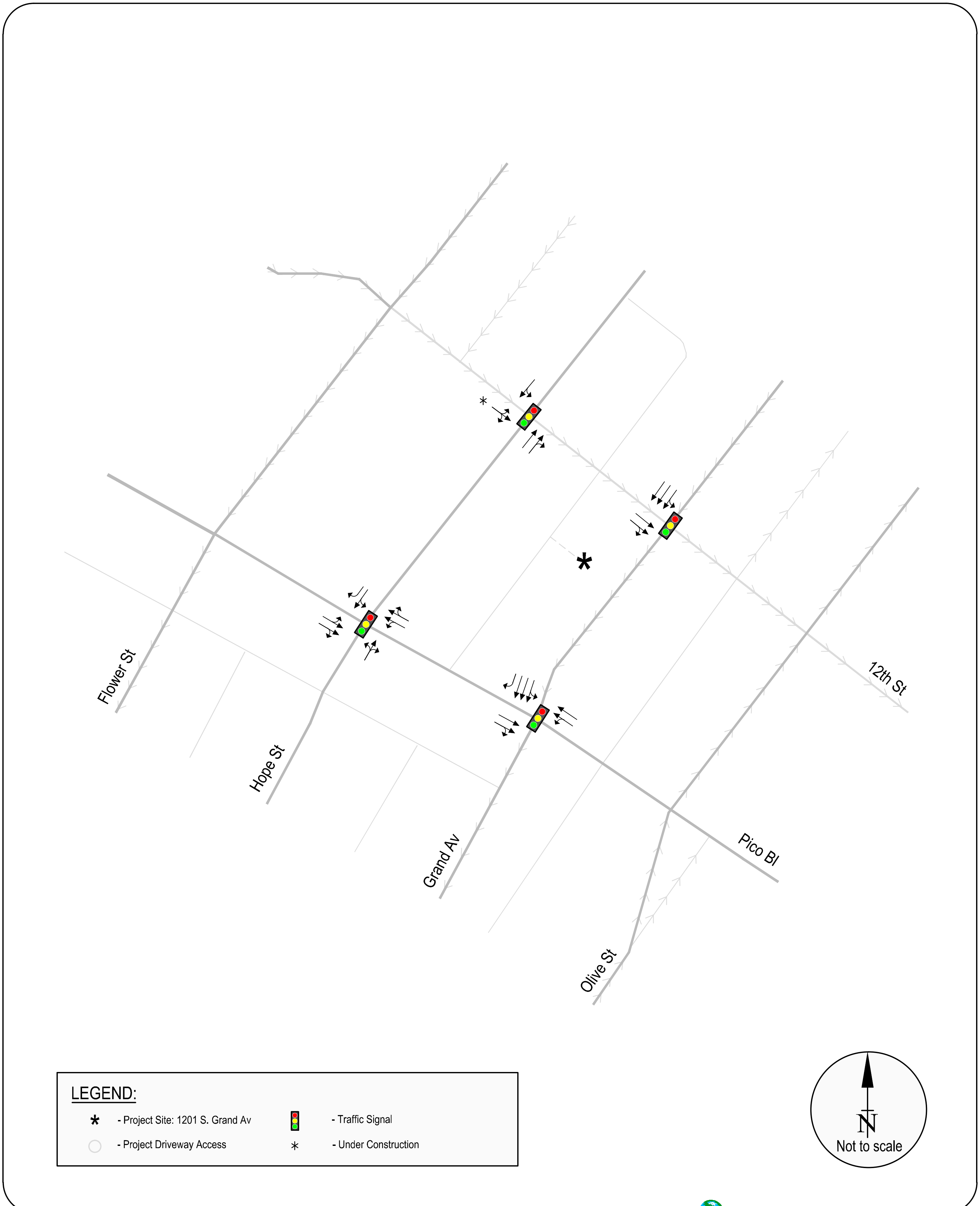
The proposed project is required to perform VMT analysis.

Measuring the Miles

4/22/2020

APPENDIX B

Intersection Lane Configurations



ATTACHMENT B
INTERSECTION LANE CONFIGURATIONS

RAJU Associates, Inc.

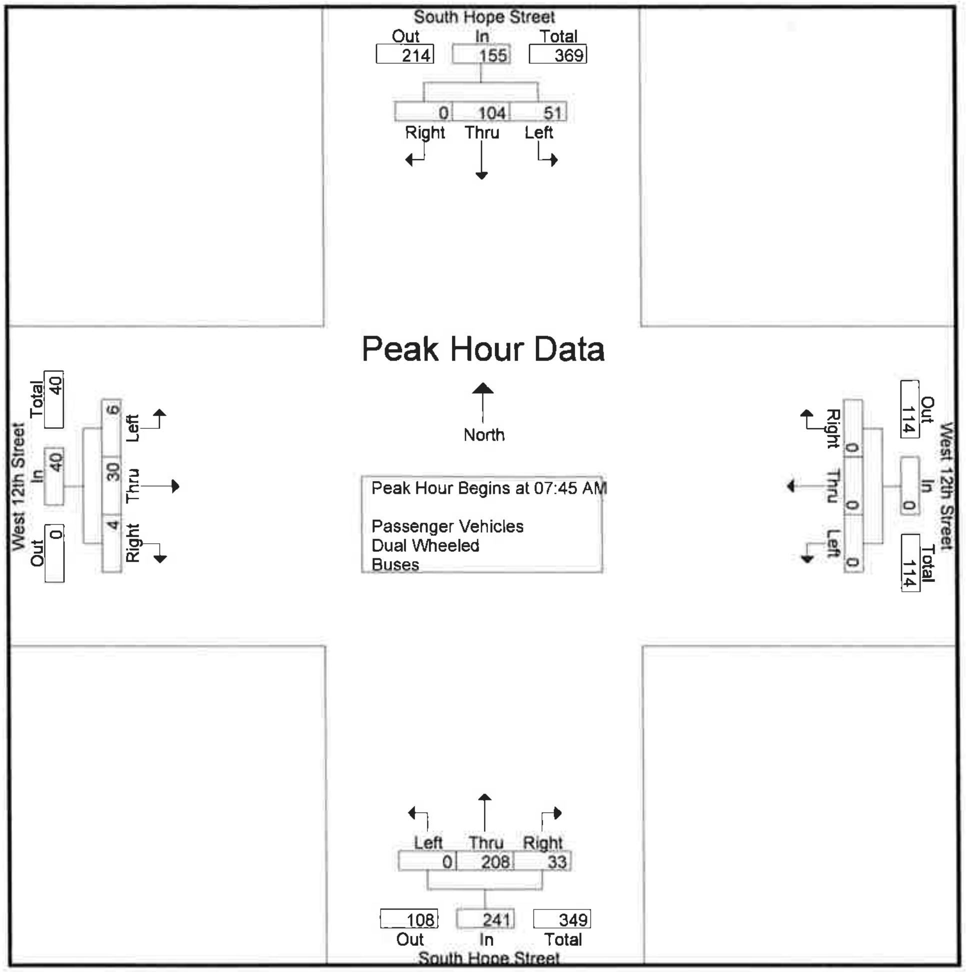
APPENDIX C

Traffic Counts

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Los Angeles
N/S: South Hope Street
E/W: West 12th Street
Weather: Clear

File Name : 05_LAC_Hope_12th AM
Site Code : 12818304
Start Date : 4/12/2018
Page No : 2



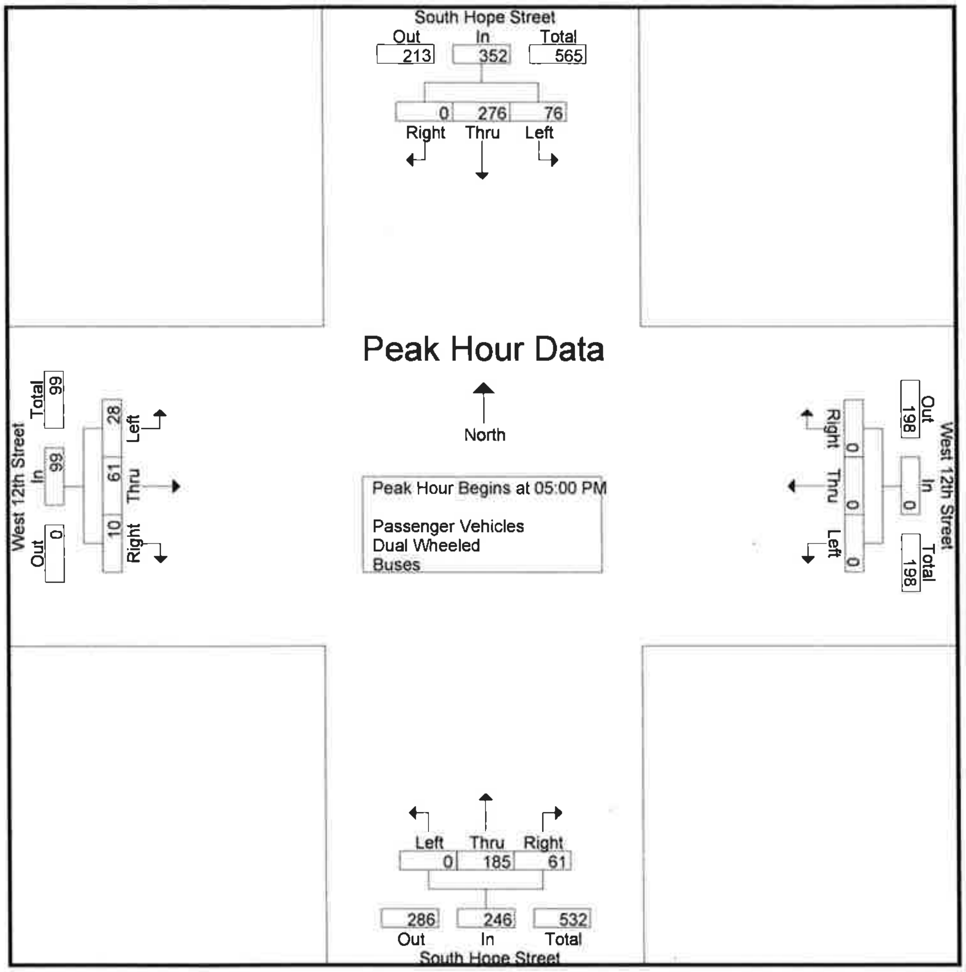
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:00 AM				08:30 AM				09:00 AM			
+0 mins.	13	27	0	40	0	0	0	0	0	47	11	58	5	**12**	**3**	**20**
+15 mins.	11	**36**	0	**47**	0	0	0	0	0	**59**	10	69	**7**	1	1	9
+30 mins.	**15**	20	0	35	0	0	0	0	0	56	**17**	**73**	7	5	3	15
+45 mins.	12	21	0	33	0	0	0	0	0	56	6	62	5	7	0	12
Total Volume	51	104	0	155	0	0	0	0	0	218	44	262	24	25	7	56
% App. Total	32.9	67.1	0		0	0	0		0	83.2	16.8		42.9	44.6	12.5	
PHF	.850	.722	.000	.824	.000	.000	.000	.000	.000	.924	.647	.897	.857	.521	.583	.700

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Los Angeles
N/S: South Hope Street
E/W: West 12th Street
Weather: Clear

File Name : 05_LAC_Hope_12th PM
Site Code : 12818304
Start Date : 4/12/2018
Page No : 2



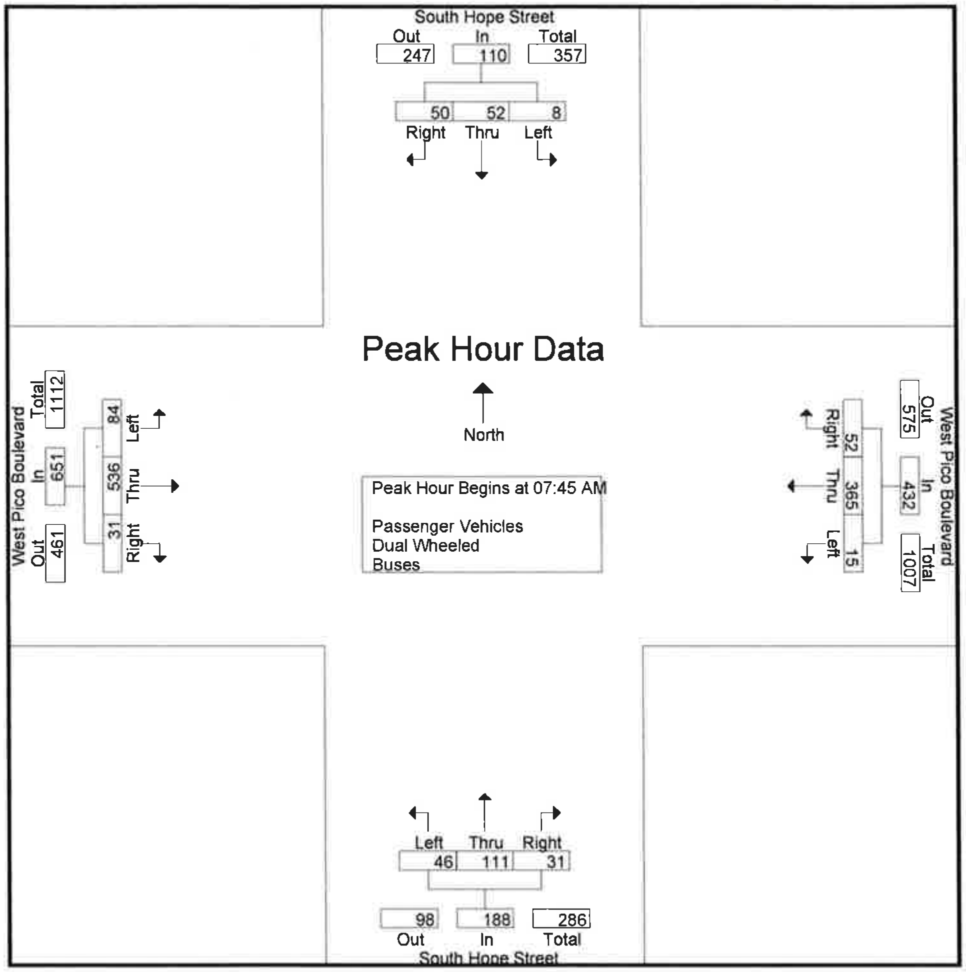
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				03:00 PM				05:00 PM				03:00 PM			
+0 mins.	16	**75**	0	91	0	0	0	0	0	35	15	50	7	27	2	36
+15 mins.	**25**	58	0	83	0	0	0	0	0	49	**18**	67	**10**	19	1	30
+30 mins.	22	63	0	85	0	0	0	0	0	**62**	14	**76**	10	**28**	**8**	**46**
+45 mins.	21	72	0	**93**	0	0	0	0	0	39	14	53	3	15	3	21
Total Volume	84	268	0	352	0	0	0	0	0	185	61	246	30	89	14	133
% App. Total	23.9	76.1	0		0	0	0		0	75.2	24.8		22.6	66.9	10.5	
PHF	.840	.893	.000	.946	.000	.000	.000	.000	.000	.746	.847	.809	.750	.795	.438	.723

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Los Angeles
N/S: South Hope Street
E/W: West Pico Boulevard
Weather: Clear

File Name : 06_LAC_Hope_Pico AM
Site Code : 12818304
Start Date : 4/12/2018
Page No : 2



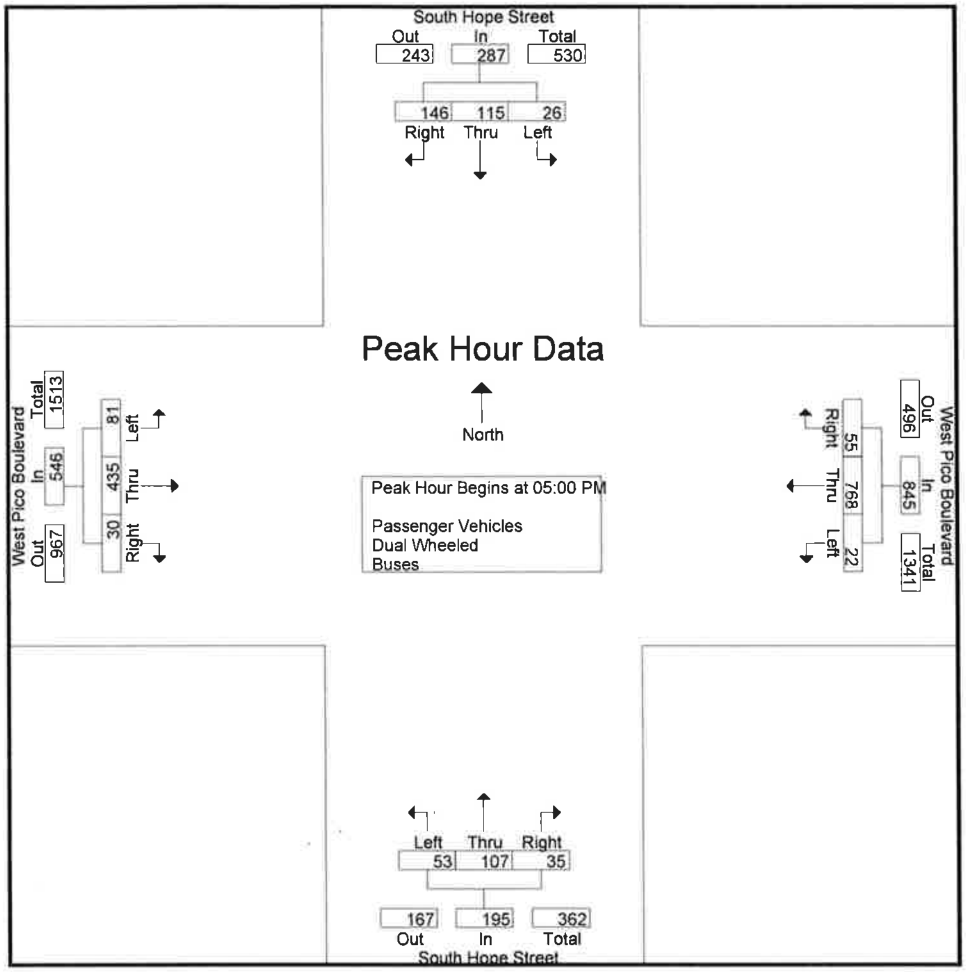
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				08:15 AM				07:15 AM				07:45 AM			
+0 mins.	**3**	8	11	22	**6**	**98**	8	112	7	30	9	46	15	137	6	158
+15 mins.	2	10	12	24	2	87	13	102	**17**	29	**10**	56	**31**	110	8	149
+30 mins.	3	**20**	12	**35**	1	89	11	101	12	**34**	10	56	19	**146**	**12**	**177**
+45 mins.	2	8	**19**	29	4	93	**21**	**118**	17	32	8	**57**	19	143	5	167
Total Volume	10	46	54	110	13	367	53	433	53	125	37	215	84	536	31	651
% App. Total	9.1	41.8	49.1		3	84.8	12.2		24.7	58.1	17.2		12.9	82.3	4.8	
PHF	.833	.575	.711	.786	.542	.936	.631	.917	.779	.919	.925	.943	.677	.918	.646	.919

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Los Angeles
N/S: South Hope Street
E/W: West Pico Boulevard
Weather: Clear

File Name : 06_LAC_Hope_Pico PM
Site Code : 12818304
Start Date : 4/12/2018
Page No : 2



Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				04:00 PM			
+0 mins.	7	27	31	65	4	166	13	183	12	16	**17**	45	14	110	5	129
+15 mins.	7	**35**	33	75	2	178	14	194	11	**33**	4	48	16	**138**	**6**	**160**
+30 mins.	**8**	26	**43**	**77**	**8**	197	**18**	223	11	29	9	49	10	123	4	137
+45 mins.	4	27	39	70	8	**227**	10	**245**	**19**	29	5	**53**	**22**	115	3	140
Total Volume	26	115	146	287	22	768	55	845	53	107	35	195	62	486	18	566
% App. Total	9.1	40.1	50.9		2.6	90.9	6.5		27.2	54.9	17.9		11	85.9	3.2	
PHF	.813	.821	.849	.932	.688	.846	.764	.862	.697	.811	.515	.920	.705	.880	.750	.884

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Grand Ave

East/West 12th St

Day: Wednesday Date: March 1, 2017 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	0	166	83	0
BIKES	18	90	49	17
BUSES	0	240	35	0

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	0	0.00	147	7.45	56	7.45	0	0.00
PM PK 15 MIN	0	0.00	380	17.30	76	17.15	0	0.00
AM PK HOUR	0	0.00	570	7.15	199	8.15	0	0.00
PM PK HOUR	0	0.00	1438	16.45	241	17.00	0	0.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	0	0	0
8-9	0	0	0	0
9-10	0	0	0	0
15-16	0	0	0	0
16-17	0	0	0	0
17-18	0	0	0	0
TOTAL	0	0	0	0

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	102	454	0	556
8-9	151	397	0	548
9-10	114	385	0	499
15-16	94	744	0	838
16-17	102	1190	0	1292
17-18	88	1322	0	1410
TOTAL	651	4492	0	5143

	TOTAL	**XING S/L**		**XING N/L**	
Hours	N-S	Ped	Sch	Ped	Sch
7-8	556	12	0	86	1
8-9	548	5	0	119	0
9-10	499	9	0	95	0
15-16	838	45	0	97	0
16-17	1292	32	0	102	3
17-18	1410	43	0	108	0
TOTAL	5143	146	0	607	4

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	94	54	148
8-9	0	123	69	192
9-10	0	121	70	191
15-16	0	106	75	181
16-17	0	104	83	187
17-18	0	146	95	241
TOTAL	0	694	446	1140

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	0	0	0
8-9	0	0	0	0
9-10	0	0	0	0
15-16	0	0	0	0
16-17	0	0	0	0
17-18	0	0	0	0
TOTAL	0	0	0	0

	TOTAL	**XING W/L**		**XING E/L**	
Hours	E-W	Ped	Sch	Ped	Sch
7-8	148	43	1	11	0
8-9	192	48	4	5	0
9-10	191	45	4	8	0
15-16	181	63	1	13	0
16-17	187	50	3	15	0
17-18	241	85	1	15	0
TOTAL	1140	334	14	67	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Grand Ave and 12th St , Los Angeles

Date: 3/1/2017
Day: Wednesday

Project #: 17-5133-009
City: Los Angeles

AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	445 PM

Total Peak Hour Summary

CONTROL: Signalized

Southbound Approach (Grand Ave)

	Left	Through	Right	Out
Lanes	0	3	0	
AM	0	423	141	0
NOON	0	0	0	0
PM	0	1340	98	0

Eastbound Approach (12th St)

	Lanes	AM	NOON	PM
Out		0	0	0
Left	0	0	0	0
Through	2	133	0	139
Right	0	63	0	100

Westbound Approach

	AM	NOON	PM	Lanes
Right	0	0	0	0
Through	0	0	0	0
Left	0	0	0	0
Out	274	0	237	

Northbound Approach

	Out	Left	Through	Right
AM	486	0	0	0
NOON	0	0	0	0
PM	1440	0	0	0
Lanes		0	0	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON	NONE	NONE
PM	3:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In/Out 1	In/Out 2
North Leg	AM	564	0
North Leg	NOON	0	0
North Leg	PM	1438	0
East Leg	AM	0	274
East Leg	NOON	0	0
East Leg	PM	0	237
West Leg	AM	0	196
West Leg	NOON	0	0
West Leg	PM	0	239
South Leg	AM	486	0
South Leg	NOON	0	0
South Leg	PM	1440	0

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	564	0	1438
East Leg	274	0	237
West Leg	196	0	239
South Leg	486	0	1440

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5133-009 **Day:** Wednesday

TOTALS

City: Los Angeles **Date:** 3/1/2017

AM

NS/EW Streets:	Grand Ave			Grand Ave			12th St			12th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	3	0	0	2	0	0	0	0	
7:00 AM	0	0	0	27	100	0	0	21	16	0	0	0	164
7:15 AM	0	0	0	21	119	0	0	14	11	0	0	0	165
7:30 AM	0	0	0	27	115	0	0	20	10	0	0	0	172
7:45 AM	0	0	0	27	120	0	0	39	17	0	0	0	203
8:00 AM	0	0	0	36	105	0	0	29	18	0	0	0	188
8:15 AM	0	0	0	35	101	0	0	36	15	0	0	0	187
8:30 AM	0	0	0	43	97	0	0	29	13	0	0	0	182
8:45 AM	0	0	0	37	94	0	0	29	23	0	0	0	183
9:00 AM	0	0	0	35	110	0	0	37	17	0	0	0	199
9:15 AM	0	0	0	32	91	0	0	26	17	0	0	0	166
9:30 AM	0	0	0	21	99	0	0	27	22	0	0	0	169
9:45 AM	0	0	0	26	85	0	0	31	14	0	0	0	156

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	367	1236	0	0	338	193	0	0	0	2134
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	22.89%	77.11%	0.00%	0.00%	63.65%	36.35%	#DIV/0!	#DIV/0!	#DIV/0!	

PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	0	141	423	0	0	133	63	0	0	0	760
PEAK HR FACTOR :		0.000			0.959			0.875			0.000		0.936

CONTROL : Signalized

NOTES: On the NE corner of Grand Ave and 12th St, there is long term construction that was noted. No lanes closures observed.

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5133-009

Day: Wednesday

TOTALS

City: Los Angeles

Date: 3/1/2017

PM

NS/EW Streets:	Grand Ave			Grand Ave			12th St			12th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	3	0	0	2	0	0	0	0	
3:00 PM	0	0	0	23	175	0	0	24	13	0	0	0	235
3:15 PM	0	0	0	19	172	0	0	24	11	0	0	0	226
3:30 PM	0	0	0	28	215	0	0	34	28	0	0	0	305
3:45 PM	0	0	0	24	182	0	0	24	23	0	0	0	253
4:00 PM	0	0	0	21	255	0	0	33	22	0	0	0	331
4:15 PM	0	0	0	28	286	0	0	32	20	0	0	0	366
4:30 PM	0	0	0	26	318	0	0	14	17	0	0	0	375
4:45 PM	0	0	0	27	331	0	0	25	24	0	0	0	407
5:00 PM	0	0	0	19	343	0	0	28	20	0	0	0	410
5:15 PM	0	0	0	21	317	0	0	46	30	0	0	0	414
5:30 PM	0	0	0	31	349	0	0	40	26	0	0	0	446
5:45 PM	0	0	0	17	313	0	0	32	19	0	0	0	381

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	284	3256	0	0	356	253	0	0	0	4149
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	8.02%	91.98%	0.00%	0.00%	58.46%	41.54%	#DIV/0!	#DIV/0!	#DIV/0!	

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	0	0	98	1340	0	0	139	100	0	0	0	1677
PEAK HR FACTOR :		0.000			0.946			0.786			0.000		0.940

CONTROL : Signalized

NOTES: On the NE corner of Grand Ave and 12th St, there is long term construction that was noted. No lanes closures observed.

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5133-009

Day: Wednesday

CARS

City: Los Angeles

Date: 3/1/2017

AM

NS/EW Streets:	Grand Ave			Grand Ave			12th St			12th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	3	0	0	2	0	0	0	0	
7:00 AM	0	0	0	25	86	0	0	15	12	0	0	0	138
7:15 AM	0	0	0	19	106	0	0	11	8	0	0	0	144
7:30 AM	0	0	0	25	98	0	0	17	6	0	0	0	146
7:45 AM	0	0	0	25	101	0	0	36	13	0	0	0	175
8:00 AM	0	0	0	35	89	0	0	27	14	0	0	0	165
8:15 AM	0	0	0	30	86	0	0	36	13	0	0	0	165
8:30 AM	0	0	0	38	82	0	0	29	9	0	0	0	158
8:45 AM	0	0	0	34	77	0	0	29	18	0	0	0	158
9:00 AM	0	0	0	33	90	0	0	34	12	0	0	0	169
9:15 AM	0	0	0	30	80	0	0	23	13	0	0	0	146
9:30 AM	0	0	0	21	78	0	0	25	15	0	0	0	139
9:45 AM	0	0	0	26	73	0	0	27	11	0	0	0	137

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	341	1046	0	0	309	144	0	0	0	1840
APPROACH %'s :				24.59%	75.41%	0.00%	0.00%	68.21%	31.79%				

PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	0	128	358	0	0	128	49	0	0	0	663
PEAK HR FACTOR :		0.000			0.964			0.903			0.000		0.947

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5133-009 | **Day:** Wednesday

CARS

City: Los Angeles | **Date:** 3/1/2017

PM

NS/EW Streets:	Grand Ave			Grand Ave			12th St			12th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	3	0	0	2	0	0	0	0	
3:00 PM	0	0	0	21	162	0	0	20	13	0	0	0	216
3:15 PM	0	0	0	16	164	0	0	23	9	0	0	0	212
3:30 PM	0	0	0	28	201	0	0	32	27	0	0	0	288
3:45 PM	0	0	0	23	168	0	0	20	23	0	0	0	234
4:00 PM	0	0	0	19	241	0	0	32	20	0	0	0	312
4:15 PM	0	0	0	24	272	0	0	29	19	0	0	0	344
4:30 PM	0	0	0	26	305	0	0	11	14	0	0	0	356
4:45 PM	0	0	0	24	319	0	0	25	23	0	0	0	391
5:00 PM	0	0	0	17	335	0	0	27	19	0	0	0	398
5:15 PM	0	0	0	19	299	0	0	43	27	0	0	0	388
5:30 PM	0	0	0	28	329	0	0	39	25	0	0	0	421
5:45 PM	0	0	0	17	293	0	0	32	17	0	0	0	359

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	262	3088	0	0	333	236	0	0	0	3919
APPROACH %'s :				7.82%	92.18%	0.00%	0.00%	58.52%	41.48%				

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	0	0	88	1282	0	0	134	94	0	0	0	1598
PEAK HR FACTOR :		0.000			0.959			0.814			0.000		0.949

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 17-5133-009
N/S Street: Grand Ave
E/W Street: 12th St
DATE: 3/1/2017 DAY: Wednesday
CITY: Los Angeles

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	23	3	2	0	2	0	3	4
7:15 AM	21	1	1	1	1	0	1	6
7:30 AM	17	3	2	2	2	2	8	8
7:45 AM	13	5	4	0	4	0	8	5
8:00 AM	27	1	1	0	2	1	5	5
8:15 AM	22	6	1	0	1	0	10	4
8:30 AM	29	9	1	0	1	0	6	4
8:45 AM	21	4	1	1	0	0	7	7
9:00 AM	32	5	2	1	1	2	5	4
9:15 AM	16	4	1	0	2	0	8	3
9:30 AM	13	10	2	1	1	1	7	6
9:45 AM	10	5	0	2	0	1	5	7
TOTALS	**244**	**56**	**18**	**8**	**17**	**7**	**73**	**63**

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	1
7:15 AM	1	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	1	1
8:45 AM	0	0	0	0	0	0	0	1
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	4
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**8**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	9	15	3	6	2	1	9	5
3:15 PM	14	15	5	6	1	2	7	12
3:30 PM	5	18	9	7	3	1	3	10
3:45 PM	4	17	1	8	0	3	4	13
4:00 PM	7	22	0	5	0	1	7	5
4:15 PM	7	14	2	8	2	2	8	4
4:30 PM	5	25	0	7	0	5	6	10
4:45 PM	7	15	3	7	0	5	6	4
5:00 PM	7	29	0	11	0	3	12	9
5:15 PM	6	15	2	7	1	2	11	9
5:30 PM	4	15	0	6	0	3	12	9
5:45 PM	10	22	2	15	3	3	8	15
TOTALS	**85**	**222**	**27**	**93**	**12**	**31**	**93**	**105**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	3	0	0	0	0	0	3	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	1	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**3**	**0**	**0**	**0**	**0**	**0**	**4**	**1**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5133-009 **Day:** Wednesday

BIKES

City: Los Angeles **Date:** 3/1/2017

AM

NS/EW Streets:	Grand Ave			Grand Ave			12th St			12th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	3	0	0	2	0	0	0	0	
7:00 AM	0	0	0	1	4	0	0	0	0	1	0	0	6
7:15 AM	0	2	0	0	6	0	0	2	0	0	0	0	10
7:30 AM	0	0	0	0	3	0	0	1	0	0	1	0	5
7:45 AM	0	1	1	1	5	0	1	3	0	0	0	0	12
8:00 AM	0	0	0	1	3	0	0	6	1	0	0	0	11
8:15 AM	0	0	0	1	3	0	0	7	0	2	0	0	13
8:30 AM	0	0	0	1	3	0	0	0	0	0	0	0	4
8:45 AM	0	0	0	0	5	0	0	1	0	0	1	0	7
9:00 AM	0	0	0	1	4	0	0	2	0	0	0	0	7
9:15 AM	0	0	0	1	1	0	0	2	0	0	0	0	4
9:30 AM	0	0	1	1	0	0	0	0	0	0	0	0	2
9:45 AM	1	0	0	0	6	0	1	0	0	0	0	0	8

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	3	2	8	43	0	2	24	1	3	2	0	89
APPROACH %'s :	16.67%	50.00%	33.33%	15.69%	84.31%	0.00%	7.41%	88.89%	3.70%	60.00%	40.00%	0.00%	

PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	1	1	4	14	0	1	16	1	2	0	0	40
PEAK HR FACTOR :	0.250			0.750			0.643			0.250			0.769

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5133-009 **Day:** Wednesday

BIKES

City: Los Angeles **Date:** 3/1/2017

PM

NS/EW Streets:	Grand Ave			Grand Ave			12th St			12th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	3	0	0	2	0	0	0	0	
3:00 PM	0	2	0	1	1	0	0	0	0	0	0	0	4
3:15 PM	0	0	0	0	3	0	0	3	0	0	0	0	6
3:30 PM	0	0	0	0	1	0	0	0	2	0	2	0	5
3:45 PM	0	0	0	1	3	1	0	0	0	0	1	0	6
4:00 PM	0	4	0	0	1	0	0	2	0	0	0	0	7
4:15 PM	0	1	0	1	2	0	0	1	0	0	1	0	6
4:30 PM	0	0	0	0	1	0	0	2	0	0	1	0	4
4:45 PM	0	0	0	0	8	0	0	2	0	0	0	0	10
5:00 PM	0	0	0	0	2	0	0	0	0	0	1	0	3
5:15 PM	0	0	0	0	4	0	1	4	1	0	2	0	12
5:30 PM	0	3	0	0	5	0	0	0	0	0	1	0	9
5:45 PM	0	0	2	1	3	0	1	3	0	0	2	1	13
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	10	2	4	34	1	2	17	3	0	11	1	85
APPROACH %'s :	0.00%	83.33%	16.67%	10.26%	87.18%	2.56%	9.09%	77.27%	13.64%	0.00%	91.67%	8.33%	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	3	0	0	19	0	1	6	1	0	4	0	34
PEAK HR FACTOR :	0.250			0.594			0.333			0.500			0.708

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5133-009 **Day:** Wednesday

BUSES

City: Los Angeles **Date:** 3/1/2017

AM

NS/EW Streets:	Grand Ave			Grand Ave			12th St			12th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	3	0	0	2	0	0	0	0	
7:00 AM	0	0	0	0	9	0	0	1	3	0	0	0	13
7:15 AM	0	0	0	0	8	0	0	0	1	0	0	0	9
7:30 AM	0	0	0	0	10	0	0	0	2	0	0	0	12
7:45 AM	0	0	0	0	14	0	0	0	2	0	0	0	16
8:00 AM	0	0	0	0	11	0	0	0	1	0	0	0	12
8:15 AM	0	0	0	0	9	0	0	0	2	0	0	0	11
8:30 AM	0	0	0	0	9	0	0	0	4	0	0	0	13
8:45 AM	0	0	0	0	13	0	0	0	3	0	0	0	16
9:00 AM	0	0	0	0	14	0	0	0	4	0	0	0	18
9:15 AM	0	0	0	0	9	0	0	0	3	0	0	0	12
9:30 AM	0	0	0	0	13	0	0	0	5	0	0	0	18
9:45 AM	0	0	0	0	7	0	0	0	2	0	0	0	9

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	126	0	0	1	32	0	0	0	159
APPROACH %'s :				0.00%	100.00%	0.00%	0.00%	3.03%	96.97%				

PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	0	0	43	0	0	0	9	0	0	0	52
PEAK HR FACTOR :	0.000			0.768			0.563			0.000			0.813

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5133-009 | **Day:** Wednesday

BUSES

City: Los Angeles | **Date:** 3/1/2017

PM

NS/EW Streets:	Grand Ave			Grand Ave			12th St			12th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	3	0	0	2	0	0	0	0	
3:00 PM	0	0	0	0	8	0	0	0	0	0	0	0	8
3:15 PM	0	0	0	0	5	0	0	0	0	0	0	0	5
3:30 PM	0	0	0	0	11	0	0	0	0	0	0	0	11
3:45 PM	0	0	0	0	9	0	0	2	0	0	0	0	11
4:00 PM	0	0	0	2	8	0	0	0	0	0	0	0	10
4:15 PM	0	0	0	0	10	0	0	0	0	0	0	0	10
4:30 PM	0	0	0	0	11	0	0	0	0	0	0	0	11
4:45 PM	0	0	0	1	7	0	0	0	0	0	0	0	8
5:00 PM	0	0	0	1	6	0	0	0	0	0	0	0	7
5:15 PM	0	0	0	0	12	0	0	0	0	0	0	0	12
5:30 PM	0	0	0	0	14	0	0	0	0	0	0	0	14
5:45 PM	0	0	0	0	9	0	0	0	0	0	0	0	9

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	4	110	0	0	2	0	0	0	0	116
APPROACH %'s :				3.51%	96.49%	0.00%	0.00%	100.00%	0.00%				

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	0	0	2	39	0	0	0	0	0	0	0	41
PEAK HR FACTOR :	0.000			0.732			0.000			0.000			0.732

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5133-009 | **Day:** Wednesday

HEAVY TRUCKS

City: Los Angeles | **Date:** 3/1/2017

AM

NS/EW Streets:	Grand Ave			Grand Ave			12th St			12th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	3	0	0	2	0	0	0	0	
7:00 AM	0	0	0	2	5	0	0	5	1	0	0	0	13
7:15 AM	0	0	0	2	5	0	0	3	2	0	0	0	12
7:30 AM	0	0	0	2	7	0	0	3	2	0	0	0	14
7:45 AM	0	0	0	2	5	0	0	3	2	0	0	0	12
8:00 AM	0	0	0	1	5	0	0	2	3	0	0	0	11
8:15 AM	0	0	0	5	6	0	0	0	0	0	0	0	11
8:30 AM	0	0	0	5	6	0	0	0	0	0	0	0	11
8:45 AM	0	0	0	3	4	0	0	0	2	0	0	0	9
9:00 AM	0	0	0	2	6	0	0	3	1	0	0	0	12
9:15 AM	0	0	0	2	2	0	0	3	1	0	0	0	8
9:30 AM	0	0	0	0	8	0	0	2	2	0	0	0	12
9:45 AM	0	0	0	0	5	0	0	4	1	0	0	0	10

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	26	64	0	0	28	17	0	0	0	135
APPROACH %'s :				28.89%	71.11%	0.00%	0.00%	62.22%	37.78%				

PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	0	13	22	0	0	5	5	0	0	0	45
PEAK HR FACTOR :	0.000			0.795			0.500			0.000			0.938

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-5133-009 **Day:** Wednesday

HEAVY TRUCKS

City: Los Angeles **Date:** 3/1/2017

PM

NS/EW Streets:	Grand Ave			Grand Ave			12th St			12th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	3	0	0	2	0	0	0	0	
3:00 PM	0	0	0	2	5	0	0	4	0	0	0	0	11
3:15 PM	0	0	0	3	3	0	0	1	2	0	0	0	9
3:30 PM	0	0	0	0	3	0	0	2	1	0	0	0	6
3:45 PM	0	0	0	1	5	0	0	2	0	0	0	0	8
4:00 PM	0	0	0	0	6	0	0	1	2	0	0	0	9
4:15 PM	0	0	0	4	4	0	0	3	1	0	0	0	12
4:30 PM	0	0	0	0	2	0	0	3	3	0	0	0	8
4:45 PM	0	0	0	2	5	0	0	0	1	0	0	0	8
5:00 PM	0	0	0	1	2	0	0	1	1	0	0	0	5
5:15 PM	0	0	0	2	6	0	0	3	3	0	0	0	14
5:30 PM	0	0	0	3	6	0	0	1	1	0	0	0	11
5:45 PM	0	0	0	0	11	0	0	0	2	0	0	0	13

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	18	58	0	0	21	17	0	0	0	114
APPROACH %'s :				23.68%	76.32%	0.00%	0.00%	55.26%	44.74%				

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	0	0	8	19	0	0	5	6	0	0	0	38
PEAK HR FACTOR :	0.000			0.750			0.458			0.000			0.679

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:

North/South Grand Avenue

East/West Pico Boulevard

Day: Wednesday **Date:** May 9, 2018 **Weather:** CLEAR

Hours: 7-10AM 3-6PM **Staff:** CUI

School Day: YES **District:** Central I/S CODE 8766

	N/B	S/B	E/B	W/B
DUAL-WHEELED	0	96	46	60
BIKES	32	81	99	82
BUSES	0	282	57	128

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	0	7.00	141	8.00	168	8.15	134	9.15
PM PK 15 MIN	0	3.00	377	5.00	144	4.30	249	5.45
AM PK HOUR	0	7.00	531	7.45	591	8.15	462	8.30
PM PK HOUR	0	3.00	1447	5.00	535	4.30	878	5.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	0	0	0
8-9	0	0	0	0
9-10	0	0	0	0
3-4	0	0	0	0
4-5	0	0	0	0
5-6	0	0	0	0
TOTAL	0	0	0	0

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	26	334	59	419
8-9	28	422	70	520
9-10	31	384	68	483
3-4	76	720	102	898
4-5	49	1068	119	1236
5-6	61	1251	135	1447
TOTAL	271	4179	553	5003

TOTAL N-S	XING S/L Ped	XING S/L Sch	XING N/L Ped	XING N/L Sch
419	32	25	55	40
520	34	19	63	36
483	38	18	109	19
898	37	27	88	11
1236	45	22	93	33
1447	50	43	83	32
5003	236	154	491	171

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	311	92	403
8-9	0	471	114	585
9-10	0	363	148	511
3-4	0	373	91	464
4-5	0	431	89	520
5-6	0	408	87	495
TOTAL	0	2357	621	2978

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	54	354	0	408
8-9	72	361	0	433
9-10	100	362	0	462
3-4	60	374	0	434
4-5	74	429	0	503
5-6	124	754	0	878
TOTAL	484	2634	0	3118

TOTAL E-W	XING W/L Ped	XING W/L Sch	XING E/L Ped	XING E/L Sch
811	44	13	20	16
1018	43	23	23	22
973	58	8	42	25
898	49	13	52	20
1023	48	15	47	14
1373	48	12	34	30
6096	290	84	218	127

(Rev Oct 06)

APPENDIX D

Level of Service Worksheets

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	6	31	4	0	0	0	0	212	34	52	106	0
Future Volume (veh/h)	6	31	4	0	0	0	0	212	34	52	106	0
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	1900	1870	1900				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	7	34	4				0	236	38	58	118	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	2	0				0	2	2	2	2	0
Cap, veh/h	237	1199	146				0	1365	217	401	918	0
Arrive On Green	0.44	0.43	0.44				0.00	0.44	0.45	0.45	0.44	0.00
Sat Flow, veh/h	547	2768	338				0	3165	488	754	2151	0
Grp Volume(v), veh/h	24	0	21				0	135	139	89	87	0
Grp Sat Flow(s),veh/h/ln	1843	0	1810				0	1777	1783	1203	1617	0
Q Serve(g_s), s	0.7	0.0	0.6				0.0	4.1	4.2	2.3	2.9	0.0
Cycle Q Clear(g_c), s	0.7	0.0	0.6				0.0	4.1	4.2	6.5	2.9	0.0
Prop In Lane	0.30		0.19				0.00		0.27	0.65		0.00
Lane Grp Cap(c), veh/h	799	0	784				0	790	792	609	719	0
V/C Ratio(X)	0.03	0.00	0.03				0.00	0.17	0.18	0.15	0.12	0.00
Avail Cap(c_a), veh/h	799	0	784				0	790	792	609	719	0
HCM Platoon Ratio	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				0.00	0.92	0.92	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.6	0.0	14.6				0.0	15.0	15.0	15.7	14.7	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.1				0.0	0.4	0.4	0.5	0.3	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
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.3				0.0	1.7	1.8	1.2	1.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.7	0.0	14.7				0.0	15.5	15.5	16.2	15.0	0.0
LnGrp LOS	B	A	B				A	B	B	B	B	A
Approach Vol, veh/h		45						274			176	
Approach Delay, s/veh		14.7						15.5			15.6	
Approach LOS		B						B			B	

Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		44.6		45.4				45.4				
Change Period (Y+Rc), s		5.1		* 4.8				* 4.8				
Max Green Setting (Gmax), s		39.5		* 41				* 41				
Max Q Clear Time (g_c+I1), s		2.7		6.2				8.5				
Green Ext Time (p_c), s		0.2		1.7				1.1				

Intersection Summary			
HCM 6th Ctrl Delay			15.4
HCM 6th LOS			B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	547	32	15	372	53	47	113	32	8	53	51
Future Volume (veh/h)	86	547	32	15	372	53	47	113	32	8	53	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	90	570	33	16	388	55	49	118	33	8	55	53
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	257	1551	89	79	1700	237	140	315	80	82	485	458
Arrive On Green	0.59	0.58	0.59	1.00	1.00	1.00	0.30	0.29	0.30	0.30	0.29	0.29
Sat Flow, veh/h	357	2684	154	64	2943	410	311	1091	277	127	1678	1585
Grp Volume(v), veh/h	335	0	358	241	0	218	200	0	0	63	0	53
Grp Sat Flow(s),veh/h/ln	1522	0	1674	1788	0	1628	1679	0	0	1805	0	1585
Q Serve(g_s), s	3.7	0.0	10.3	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	2.2
Cycle Q Clear(g_c), s	9.2	0.0	10.3	0.0	0.0	0.0	8.1	0.0	0.0	2.2	0.0	2.2
Prop In Lane	0.27		0.09	0.07		0.25	0.24		0.16	0.13		1.00
Lane Grp Cap(c), veh/h	945	0	967	1094	0	941	550	0	0	583	0	458
V/C Ratio(X)	0.35	0.00	0.37	0.22	0.00	0.23	0.36	0.00	0.00	0.11	0.00	0.12
Avail Cap(c_a), veh/h	945	0	967	1094	0	941	550	0	0	583	0	458
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.96	0.00	0.96	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.8	0.0	10.2	0.0	0.0	0.0	25.4	0.0	0.0	23.5	0.0	23.5
Incr Delay (d2), s/veh	1.0	0.0	1.1	0.4	0.0	0.6	1.9	0.0	0.0	0.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	3.8	0.1	0.0	0.1	3.6	0.0	0.0	1.0	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.8	0.0	11.3	0.4	0.0	0.6	27.3	0.0	0.0	23.9	0.0	24.1
LnGrp LOS	B	A	B	A	A	A	C	A	A	C	A	C
Approach Vol, veh/h		693			459			200			116	
Approach Delay, s/veh		11.0			0.5			27.3			24.0	
Approach LOS		B			A			C			C	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		58.0		32.0		58.0		32.0
Change Period (Y+Rc), s		5.1		* 5.2		5.1		* 5.2
Max Green Setting (Gmax), s		52.9		* 27		52.9		* 27
Max Q Clear Time (g_c+I1), s		2.0		4.2		12.3		10.1
Green Ext Time (p_c), s		3.2		0.4		5.3		1.0

Intersection Summary	
HCM 6th Ctrl Delay	11.0
HCM 6th LOS	B

Notes

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

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	127	71	0	0	0	0	0	0	105	468	0
Future Volume (veh/h)	0	127	71	0	0	0	0	0	0	105	468	0
Initial Q (Qb), veh	0	0	0							0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00							1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00							1.00	1.00	1.00
Work Zone On Approach		No									No	
Adj Sat Flow, veh/h/ln	0	1870	1870							1870	1870	0
Adj Flow Rate, veh/h	0	135	76							112	498	0
Peak Hour Factor	0.94	0.94	0.94							0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2							2	2	0
Cap, veh/h	0	768	408							472	2034	0
Arrive On Green	0.00	0.34	0.35							0.52	0.51	0.00
Sat Flow, veh/h	0	2335	1191							768	4108	0
Grp Volume(v), veh/h	0	105	106							222	388	0
Grp Sat Flow(s),veh/h/ln	0	1777	1656							1625	1549	0
Q Serve(g_s), s	0.0	2.9	3.1							3.1	4.9	0.0
Cycle Q Clear(g_c), s	0.0	2.9	3.1							5.0	4.9	0.0
Prop In Lane	0.00		0.72							0.50		0.00
Lane Grp Cap(c), veh/h	0	609	568							920	1593	0
V/C Ratio(X)	0.00	0.17	0.19							0.24	0.24	0.00
Avail Cap(c_a), veh/h	0	609	568							920	1593	0
HCM Platoon Ratio	1.00	1.00	1.00							1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00							1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	16.1	16.1							9.4	9.4	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.7							0.6	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0							0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	1.2							1.8	1.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.7	16.8							10.0	9.8	0.0
LnGrp LOS	A	B	B							B	A	A
Approach Vol, veh/h		211									610	
Approach Delay, s/veh		16.7									9.9	
Approach LOS		B									A	

Timer - Assigned Phs		2		4								
Phs Duration (G+Y+Rc), s		29.1		40.9								
Change Period (Y+Rc), s		* 4.8		* 4.6								
Max Green Setting (Gmax), s		* 24		* 36								
Max Q Clear Time (g_c+I1), s		5.1		7.0								
Green Ext Time (p_c), s		1.1		4.2								

Intersection Summary			
HCM 6th Ctrl Delay			11.6
HCM 6th LOS			B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	480	116	73	368	0	0	0	0	29	430	71
Future Volume (veh/h)	0	480	116	73	368	0	0	0	0	29	430	71
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	500	121	76	383	0				30	448	74
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1420	342	257	1269	0				114	1815	581
Arrive On Green	0.00	1.00	1.00	0.51	0.50	0.00				0.38	0.37	0.37
Sat Flow, veh/h	0	2934	684	407	2624	0				310	4949	1585
Grp Volume(v), veh/h	0	312	309	219	240	0				179	299	74
Grp Sat Flow(s),veh/h/ln	0	1777	1747	1329	1617	0				1855	1702	1585
Q Serve(g_s), s	0.0	0.0	0.0	3.4	7.8	0.0				6.1	5.5	2.8
Cycle Q Clear(g_c), s	0.0	0.0	0.0	7.1	7.8	0.0				6.1	5.5	2.8
Prop In Lane	0.00		0.39	0.35		0.00				0.17		1.00
Lane Grp Cap(c), veh/h	0	888	874	730	808	0				680	1248	581
V/C Ratio(X)	0.00	0.35	0.35	0.30	0.30	0.00				0.26	0.24	0.13
Avail Cap(c_a), veh/h	0	888	874	730	808	0				680	1248	581
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.91	0.91	1.00	1.00	0.00				0.98	0.98	0.98
Uniform Delay (d), s/veh	0.0	0.0	0.0	12.8	13.2	0.0				19.9	19.8	18.9
Incr Delay (d2), s/veh	0.0	1.0	1.0	1.1	0.9	0.0				0.9	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.2	2.6	2.9	0.0				2.7	2.2	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	1.0	1.0	13.8	14.1	0.0				20.9	20.2	19.4
LnGrp LOS	A	A	A	B	B	A				C	C	B
Approach Vol, veh/h		621			459						552	
Approach Delay, s/veh		1.0			14.0						20.3	
Approach LOS		A			B						C	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		51.1		38.9		51.1						
Change Period (Y+Rc), s		* 5.3		5.1		* 5.3						
Max Green Setting (Gmax), s		* 46		33.8		* 46						
Max Q Clear Time (g_c+I1), s		9.8		8.1		2.0						
Green Ext Time (p_c), s		3.4		3.4		4.4						

Intersection Summary			
HCM 6th Ctrl Delay			11.2
HCM 6th LOS			B

Notes

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

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	29	62	10	0	0	0	0	189	62	78	282	0
Future Volume (veh/h)	29	62	10	0	0	0	0	189	62	78	282	0
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	1900	1870	1900				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	31	66	11				0	201	66	83	300	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	0				0	2	2	2	2	0
Cap, veh/h	299	672	116				0	1531	488	396	1434	0
Arrive On Green	0.30	0.30	0.30				0.00	0.58	0.59	0.59	0.58	0.00
Sat Flow, veh/h	997	2239	385				0	2743	845	586	2566	0
Grp Volume(v), veh/h	57	0	51				0	133	134	192	191	0
Grp Sat Flow(s),veh/h/ln	1821	0	1801				0	1777	1718	1451	1617	0
Q Serve(g_s), s	2.0	0.0	1.8				0.0	3.1	3.2	2.3	5.1	0.0
Cycle Q Clear(g_c), s	2.0	0.0	1.8				0.0	3.1	3.2	5.5	5.1	0.0
Prop In Lane	0.55		0.21				0.00		0.49	0.43		0.00
Lane Grp Cap(c), veh/h	546	0	540				0	1027	993	907	934	0
V/C Ratio(X)	0.10	0.00	0.10				0.00	0.13	0.14	0.21	0.20	0.00
Avail Cap(c_a), veh/h	546	0	540				0	1027	993	907	934	0
HCM Platoon Ratio	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				0.00	0.94	0.94	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.7	0.0	22.7				0.0	8.7	8.6	9.0	9.1	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.3				0.0	0.2	0.3	0.5	0.5	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
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.8				0.0	1.2	1.2	1.8	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.1	0.0	23.0				0.0	8.9	8.9	9.5	9.6	0.0
LnGrp LOS	C	A	C				A	A	A	A	A	A
Approach Vol, veh/h		108						267			383	
Approach Delay, s/veh		23.0						8.9			9.6	
Approach LOS		C						A			A	

Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		32.5		57.5				57.5				
Change Period (Y+Rc), s		5.1		* 4.8				* 4.8				
Max Green Setting (Gmax), s		27.4		* 53				* 53				
Max Q Clear Time (g_c+I1), s		4.0		7.5				5.2				
Green Ext Time (p_c), s		0.5		2.6				1.7				

Intersection Summary		
HCM 6th Ctrl Delay		11.3
HCM 6th LOS		B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	444	31	22	783	56	54	109	36	27	117	149
Future Volume (veh/h)	83	444	31	22	783	56	54	109	36	27	117	149
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	88	472	33	23	833	60	57	116	38	29	124	159
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	1062	80	63	1608	114	178	346	104	137	550	581
Arrive On Green	0.51	0.50	0.51	0.51	0.50	0.51	0.38	0.37	0.38	0.38	0.37	0.37
Sat Flow, veh/h	252	2123	161	42	3215	229	347	943	283	244	1501	1585
Grp Volume(v), veh/h	249	0	344	480	0	436	211	0	0	153	0	159
Grp Sat Flow(s),veh/h/ln	863	0	1673	1825	0	1661	1574	0	0	1744	0	1585
Q Serve(g_s), s	9.7	0.0	11.6	0.0	0.0	16.0	2.5	0.0	0.0	0.0	0.0	6.4
Cycle Q Clear(g_c), s	25.7	0.0	11.6	15.4	0.0	16.0	7.9	0.0	0.0	5.1	0.0	6.4
Prop In Lane	0.35		0.10	0.05		0.14	0.27		0.18	0.19		1.00
Lane Grp Cap(c), veh/h	494	0	837	973	0	830	642	0	0	703	0	581
V/C Ratio(X)	0.50	0.00	0.41	0.49	0.00	0.53	0.33	0.00	0.00	0.22	0.00	0.27
Avail Cap(c_a), veh/h	494	0	837	973	0	830	642	0	0	703	0	581
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	0.71	0.00	0.71	1.00	0.00	0.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	18.0	0.0	14.1	15.1	0.0	15.2	20.3	0.0	0.0	19.6	0.0	20.1
Incr Delay (d2), s/veh	3.6	0.0	1.5	1.3	0.0	1.7	1.4	0.0	0.0	0.7	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	4.5	6.4	0.0	6.0	3.3	0.0	0.0	2.2	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.6	0.0	15.6	16.4	0.0	16.9	21.7	0.0	0.0	20.3	0.0	21.2
LnGrp LOS	C	A	B	B	A	B	C	A	A	C	A	C
Approach Vol, veh/h		593			916			211			312	
Approach Delay, s/veh		18.1			16.6			21.7			20.8	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		51.0		39.0		51.0		39.0				
Change Period (Y+Rc), s		5.1		* 5.2		5.1		* 5.2				
Max Green Setting (Gmax), s		45.9		* 34		45.9		* 34				
Max Q Clear Time (g_c+I1), s		18.0		8.4		27.7		9.9				
Green Ext Time (p_c), s		6.8		1.4		4.1		1.3				

Intersection Summary			
HCM 6th Ctrl Delay			18.2
HCM 6th LOS			B

Notes

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

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	150	98	0	0	0	0	0	0	91	1362	0
Future Volume (veh/h)	0	150	98	0	0	0	0	0	0	91	1362	0
Initial Q (Qb), veh	0	0	0							0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00							1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00							1.00	1.00	1.00
Work Zone On Approach		No									No	
Adj Sat Flow, veh/h/ln	0	1870	1870							1870	1870	0
Adj Flow Rate, veh/h	0	160	104							97	1449	0
Peak Hour Factor	0.94	0.94	0.94							0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2							2	2	0
Cap, veh/h	0	705	433							190	2571	0
Arrive On Green	0.00	0.11	0.11							0.56	0.56	0.00
Sat Flow, veh/h	0	2209	1298							257	4782	0
Grp Volume(v), veh/h	0	133	131							569	977	0
Grp Sat Flow(s),veh/h/ln	0	1777	1637							1788	1549	0
Q Serve(g_s), s	0.0	6.1	6.6							10.6	18.4	0.0
Cycle Q Clear(g_c), s	0.0	6.1	6.6							18.2	18.4	0.0
Prop In Lane	0.00		0.79							0.17		0.00
Lane Grp Cap(c), veh/h	0	592	546							1048	1721	0
V/C Ratio(X)	0.00	0.22	0.24							0.54	0.57	0.00
Avail Cap(c_a), veh/h	0	592	546							1048	1721	0
HCM Platoon Ratio	1.00	0.33	0.33							1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00							1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	29.4	29.6							12.8	13.0	0.0
Incr Delay (d2), s/veh	0.0	0.9	1.0							2.0	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0							0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.9	2.9							7.3	6.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	30.3	30.7							14.8	14.4	0.0
LnGrp LOS	A	C	C							B	B	A
Approach Vol, veh/h		264									1546	
Approach Delay, s/veh		30.5									14.5	
Approach LOS		C									B	

Timer - Assigned Phs		2		4					
Phs Duration (G+Y+Rc), s		35.0		55.0					
Change Period (Y+Rc), s		* 4.8		* 4.6					
Max Green Setting (Gmax), s		* 30		* 50					
Max Q Clear Time (g_c+I1), s		8.6		20.4					
Green Ext Time (p_c), s		1.5		13.7					

Intersection Summary			
HCM 6th Ctrl Delay			16.9
HCM 6th LOS			B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	416	89	126	769	0	0	0	0	62	1276	138
Future Volume (veh/h)	0	416	89	126	769	0	0	0	0	62	1276	138
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	433	93	131	801	0				65	1329	144
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1425	304	218	1262	0				87	1901	599
Arrive On Green	0.00	0.49	0.50	0.50	0.49	0.00				0.39	0.38	0.38
Sat Flow, veh/h	0	3008	621	339	2665	0				231	5032	1585
Grp Volume(v), veh/h	0	263	263	444	488	0				523	871	144
Grp Sat Flow(s),veh/h/ln	0	1777	1759	1302	1617	0				1859	1702	1585
Q Serve(g_s), s	0.0	8.0	8.1	17.7	19.9	0.0				21.9	19.3	5.6
Cycle Q Clear(g_c), s	0.0	8.0	8.1	25.7	19.9	0.0				21.9	19.3	5.6
Prop In Lane	0.00		0.35	0.30		0.00				0.12		1.00
Lane Grp Cap(c), veh/h	0	869	860	699	790	0				702	1286	599
V/C Ratio(X)	0.00	0.30	0.31	0.64	0.62	0.00				0.74	0.68	0.24
Avail Cap(c_a), veh/h	0	869	860	699	790	0				702	1286	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	13.8	13.7	18.9	16.8	0.0				24.2	23.4	19.2
Incr Delay (d2), s/veh	0.0	0.9	0.9	4.4	3.6	0.0				7.0	2.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.3	3.3	7.7	7.7	0.0				10.6	7.9	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	14.7	14.7	23.2	20.4	0.0				31.2	26.3	20.1
LnGrp LOS	A	B	B	C	C	A				C	C	C
Approach Vol, veh/h		526			932						1538	
Approach Delay, s/veh		14.7			21.8						27.4	
Approach LOS		B			C						C	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		50.0		40.0		50.0						
Change Period (Y+Rc), s		* 5.3		5.1		* 5.3						
Max Green Setting (Gmax), s		* 45		34.9		* 45						
Max Q Clear Time (g_c+I1), s		27.7		23.9		10.1						
Green Ext Time (p_c), s		6.1		7.0		3.5						
Intersection Summary												
HCM 6th Ctrl Delay			23.4									
HCM 6th LOS			C									

Notes

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

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	6	38	4	0	0	0	0	215	34	53	106	0
Future Volume (veh/h)	6	38	4	0	0	0	0	215	34	53	106	0
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	1900	1870	1900				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	7	42	4				0	239	38	59	118	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	2	0				0	2	2	2	2	0
Cap, veh/h	202	1262	125				0	1368	215	404	912	0
Arrive On Green	0.44	0.43	0.44				0.00	0.44	0.45	0.45	0.44	0.00
Sat Flow, veh/h	466	2912	288				0	3171	483	758	2136	0
Grp Volume(v), veh/h	28	0	25				0	137	140	89	88	0
Grp Sat Flow(s),veh/h/ln	1847	0	1818				0	1777	1783	1193	1617	0
Q Serve(g_s), s	0.8	0.0	0.7				0.0	4.2	4.3	2.4	2.9	0.0
Cycle Q Clear(g_c), s	0.8	0.0	0.7				0.0	4.2	4.3	6.7	2.9	0.0
Prop In Lane	0.25		0.16				0.00		0.27	0.66		0.00
Lane Grp Cap(c), veh/h	800	0	788				0	790	793	604	719	0
V/C Ratio(X)	0.03	0.00	0.03				0.00	0.17	0.18	0.15	0.12	0.00
Avail Cap(c_a), veh/h	800	0	788				0	790	793	604	719	0
HCM Platoon Ratio	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				0.00	0.92	0.92	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.6	0.0	14.6				0.0	15.0	15.0	15.8	14.7	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.1				0.0	0.4	0.4	0.5	0.3	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
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.3				0.0	1.7	1.8	1.2	1.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.7	0.0	14.7				0.0	15.5	15.5	16.3	15.0	0.0
LnGrp LOS	B	A	B				A	B	B	B	B	A
Approach Vol, veh/h		53						277			177	
Approach Delay, s/veh		14.7						15.5			15.7	
Approach LOS		B						B			B	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		44.6		45.4				45.4				
Change Period (Y+Rc), s		5.1		* 4.8				* 4.8				
Max Green Setting (Gmax), s		39.5		* 41				* 41				
Max Q Clear Time (g_c+I1), s		2.8		6.3				8.7				
Green Ext Time (p_c), s		0.2		1.7				1.1				
Intersection Summary												
HCM 6th Ctrl Delay			15.5									
HCM 6th LOS			B									
Notes												

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	552	32	15	406	56	47	113	32	8	53	51
Future Volume (veh/h)	86	552	32	15	406	56	47	113	32	8	53	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	90	575	33	16	423	58	49	118	33	8	55	53
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	1544	88	75	1716	231	140	315	80	82	485	458
Arrive On Green	0.59	0.58	0.59	1.00	1.00	1.00	0.30	0.29	0.30	0.30	0.29	0.29
Sat Flow, veh/h	352	2673	152	56	2971	400	311	1091	277	127	1678	1585
Grp Volume(v), veh/h	335	0	363	261	0	236	200	0	0	63	0	53
Grp Sat Flow(s),veh/h/ln	1502	0	1675	1797	0	1630	1679	0	0	1805	0	1585
Q Serve(g_s), s	3.8	0.0	10.5	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	2.2
Cycle Q Clear(g_c), s	9.2	0.0	10.5	0.0	0.0	0.0	8.1	0.0	0.0	2.2	0.0	2.2
Prop In Lane	0.27		0.09	0.06		0.25	0.24		0.16	0.13		1.00
Lane Grp Cap(c), veh/h	934	0	968	1099	0	942	550	0	0	583	0	458
V/C Ratio(X)	0.36	0.00	0.38	0.24	0.00	0.25	0.36	0.00	0.00	0.11	0.00	0.12
Avail Cap(c_a), veh/h	934	0	968	1099	0	942	550	0	0	583	0	458
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.96	0.00	0.96	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.8	0.0	10.2	0.0	0.0	0.0	25.4	0.0	0.0	23.5	0.0	23.5
Incr Delay (d2), s/veh	1.1	0.0	1.1	0.5	0.0	0.6	1.9	0.0	0.0	0.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	3.8	0.1	0.0	0.2	3.6	0.0	0.0	1.0	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.8	0.0	11.3	0.5	0.0	0.6	27.3	0.0	0.0	23.9	0.0	24.1
LnGrp LOS	B	A	B	A	A	A	C	A	A	C	A	C
Approach Vol, veh/h		698			497			200			116	
Approach Delay, s/veh		11.1			0.5			27.3			24.0	
Approach LOS		B			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		58.0		32.0		58.0		32.0				
Change Period (Y+Rc), s		5.1		* 5.2		5.1		* 5.2				
Max Green Setting (Gmax), s		52.9		* 27		52.9		* 27				
Max Q Clear Time (g_c+I1), s		2.0		4.2		12.5		10.1				
Green Ext Time (p_c), s		3.5		0.4		5.4		1.0				

Intersection Summary			
HCM 6th Ctrl Delay			10.8
HCM 6th LOS			B

Notes

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

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	151	74	0	0	0	0	0	0	105	471	0
Future Volume (veh/h)	0	151	74	0	0	0	0	0	0	105	471	0
Initial Q (Qb), veh	0	0	0							0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00							1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00							1.00	1.00	1.00
Work Zone On Approach		No									No	
Adj Sat Flow, veh/h/ln	0	1870	1870							1870	1870	0
Adj Flow Rate, veh/h	0	161	79							112	501	0
Peak Hour Factor	0.94	0.94	0.94							0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2							2	2	0
Cap, veh/h	0	805	377							470	2036	0
Arrive On Green	0.00	0.34	0.35							0.52	0.51	0.00
Sat Flow, veh/h	0	2442	1100							764	4113	0
Grp Volume(v), veh/h	0	120	120							223	390	0
Grp Sat Flow(s),veh/h/ln	0	1777	1672							1626	1549	0
Q Serve(g_s), s	0.0	3.3	3.5							3.1	4.9	0.0
Cycle Q Clear(g_c), s	0.0	3.3	3.5							5.1	4.9	0.0
Prop In Lane	0.00		0.66							0.50		0.00
Lane Grp Cap(c), veh/h	0	609	573							921	1593	0
V/C Ratio(X)	0.00	0.20	0.21							0.24	0.24	0.00
Avail Cap(c_a), veh/h	0	609	573							921	1593	0
HCM Platoon Ratio	1.00	1.00	1.00							1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00							1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	16.2	16.2							9.4	9.4	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.8							0.6	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0							0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.4	1.4							1.8	1.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.9	17.0							10.0	9.8	0.0
LnGrp LOS	A	B	B							B	A	A
Approach Vol, veh/h		240									613	
Approach Delay, s/veh		17.0									9.9	
Approach LOS		B									A	
Timer - Assigned Phs		2		4								
Phs Duration (G+Y+Rc), s		29.1		40.9								
Change Period (Y+Rc), s		* 4.8		* 4.6								
Max Green Setting (Gmax), s		* 24		* 36								
Max Q Clear Time (g_c+I1), s		5.5		7.1								
Green Ext Time (p_c), s		1.3		4.3								
Intersection Summary												
HCM 6th Ctrl Delay			11.9									
HCM 6th LOS			B									
Notes												

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	489	124	73	383	0	0	0	0	29	433	74
Future Volume (veh/h)	0	489	124	73	383	0	0	0	0	29	433	74
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	509	129	76	399	0				30	451	77
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1405	354	250	1279	0				113	1815	581
Arrive On Green	0.00	1.00	1.00	0.51	0.50	0.00				0.38	0.37	0.37
Sat Flow, veh/h	0	2904	709	393	2642	0				308	4951	1585
Grp Volume(v), veh/h	0	321	317	226	249	0				181	300	77
Grp Sat Flow(s),veh/h/ln	0	1777	1743	1333	1617	0				1855	1702	1585
Q Serve(g_s), s	0.0	0.0	0.0	3.4	8.2	0.0				6.1	5.5	2.9
Cycle Q Clear(g_c), s	0.0	0.0	0.0	7.4	8.2	0.0				6.1	5.5	2.9
Prop In Lane	0.00		0.41	0.34		0.00				0.17		1.00
Lane Grp Cap(c), veh/h	0	888	871	732	808	0				680	1248	581
V/C Ratio(X)	0.00	0.36	0.36	0.31	0.31	0.00				0.27	0.24	0.13
Avail Cap(c_a), veh/h	0	888	871	732	808	0				680	1248	581
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.91	0.91	1.00	1.00	0.00				0.98	0.98	0.98
Uniform Delay (d), s/veh	0.0	0.0	0.0	12.8	13.3	0.0				19.9	19.8	19.0
Incr Delay (d2), s/veh	0.0	1.0	1.1	1.1	1.0	0.0				0.9	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.3	2.6	3.0	0.0				2.8	2.2	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	1.0	1.1	13.9	14.3	0.0				20.9	20.2	19.4
LnGrp LOS	A	A	A	B	B	A				C	C	B
Approach Vol, veh/h		638			475						558	
Approach Delay, s/veh		1.1			14.1						20.3	
Approach LOS		A			B						C	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		51.1		38.9		51.1						
Change Period (Y+Rc), s		* 5.3		5.1		* 5.3						
Max Green Setting (Gmax), s		* 46		33.8		* 46						
Max Q Clear Time (g_c+I1), s		10.2		8.1		2.0						
Green Ext Time (p_c), s		3.5		3.4		4.6						
Intersection Summary												
HCM 6th Ctrl Delay			11.2									
HCM 6th LOS			B									

Notes

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

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	29	84	10	0	0	0	0	191	62	83	282	0
Future Volume (veh/h)	29	84	10	0	0	0	0	191	62	83	282	0
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	1900	1870	1900				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	31	89	11				0	203	66	88	300	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	0				0	2	2	2	2	0
Cap, veh/h	248	749	96				0	1535	485	410	1406	0
Arrive On Green	0.30	0.30	0.30				0.00	0.58	0.59	0.59	0.58	0.00
Sat Flow, veh/h	826	2496	320				0	2750	839	609	2518	0
Grp Volume(v), veh/h	69	0	62				0	134	135	194	194	0
Grp Sat Flow(s),veh/h/ln	1829	0	1813				0	1777	1719	1425	1617	0
Q Serve(g_s), s	2.5	0.0	2.2				0.0	3.1	3.2	2.8	5.2	0.0
Cycle Q Clear(g_c), s	2.5	0.0	2.2				0.0	3.1	3.2	6.0	5.2	0.0
Prop In Lane	0.45		0.18				0.00		0.49	0.45		0.00
Lane Grp Cap(c), veh/h	549	0	544				0	1027	993	892	934	0
V/C Ratio(X)	0.13	0.00	0.11				0.00	0.13	0.14	0.22	0.21	0.00
Avail Cap(c_a), veh/h	549	0	544				0	1027	993	892	934	0
HCM Platoon Ratio	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				0.00	0.94	0.94	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.8	0.0	22.8				0.0	8.7	8.6	9.1	9.1	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.4				0.0	0.2	0.3	0.6	0.5	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
%ile BackOfQ(50%),veh/ln	1.1	0.0	1.0				0.0	1.2	1.2	1.8	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	0.0	23.2				0.0	8.9	8.9	9.7	9.6	0.0
LnGrp LOS	C	A	C				A	A	A	A	A	A
Approach Vol, veh/h		131						269			388	
Approach Delay, s/veh		23.3						8.9			9.6	
Approach LOS		C						A			A	

Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		32.5		57.5				57.5				
Change Period (Y+Rc), s		5.1		* 4.8				* 4.8				
Max Green Setting (Gmax), s		27.4		* 53				* 53				
Max Q Clear Time (g_c+I1), s		4.5		8.0				5.2				
Green Ext Time (p_c), s		0.6		2.7				1.7				

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

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	457	31	22	800	58	54	109	37	27	117	149
Future Volume (veh/h)	83	457	31	22	800	58	54	109	37	27	117	149
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	88	486	33	23	851	62	57	116	39	29	124	159
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	175	1065	78	62	1606	116	177	344	106	137	550	581
Arrive On Green	0.51	0.50	0.51	0.51	0.50	0.51	0.38	0.37	0.38	0.38	0.37	0.37
Sat Flow, veh/h	242	2129	157	41	3213	231	345	939	290	243	1501	1585
Grp Volume(v), veh/h	254	0	353	491	0	445	212	0	0	153	0	159
Grp Sat Flow(s),veh/h/ln	854	0	1674	1825	0	1660	1574	0	0	1744	0	1585
Q Serve(g_s), s	10.0	0.0	12.0	0.0	0.0	16.5	2.5	0.0	0.0	0.0	0.0	6.4
Cycle Q Clear(g_c), s	26.5	0.0	12.0	15.9	0.0	16.5	7.9	0.0	0.0	5.1	0.0	6.4
Prop In Lane	0.35		0.09	0.05		0.14	0.27		0.18	0.19		1.00
Lane Grp Cap(c), veh/h	490	0	837	972	0	830	642	0	0	703	0	581
V/C Ratio(X)	0.52	0.00	0.42	0.50	0.00	0.54	0.33	0.00	0.00	0.22	0.00	0.27
Avail Cap(c_a), veh/h	490	0	837	972	0	830	642	0	0	703	0	581
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	0.67	0.00	0.67	1.00	0.00	0.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	18.2	0.0	14.2	15.2	0.0	15.3	20.3	0.0	0.0	19.6	0.0	20.1
Incr Delay (d2), s/veh	3.9	0.0	1.6	1.3	0.0	1.7	1.4	0.0	0.0	0.7	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	4.6	6.5	0.0	6.2	3.3	0.0	0.0	2.2	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.1	0.0	15.8	16.5	0.0	17.0	21.7	0.0	0.0	20.3	0.0	21.2
LnGrp LOS	C	A	B	B	A	B	C	A	A	C	A	C
Approach Vol, veh/h		607			936			212			312	
Approach Delay, s/veh		18.4			16.7			21.7			20.8	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		51.0		39.0		51.0		39.0				
Change Period (Y+Rc), s		5.1		* 5.2		5.1		* 5.2				
Max Green Setting (Gmax), s		45.9		* 34		45.9		* 34				
Max Q Clear Time (g_c+I1), s		18.5		8.4		28.5		9.9				
Green Ext Time (p_c), s		7.0		1.4		4.1		1.3				
Intersection Summary												
HCM 6th Ctrl Delay			18.3									
HCM 6th LOS			B									

Notes

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

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	161	99	0	0	0	0	0	0	91	1370	0
Future Volume (veh/h)	0	161	99	0	0	0	0	0	0	91	1370	0
Initial Q (Qb), veh	0	0	0							0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00							1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00							1.00	1.00	1.00
Work Zone On Approach		No									No	
Adj Sat Flow, veh/h/ln	0	1870	1870							1870	1870	0
Adj Flow Rate, veh/h	0	171	105							97	1457	0
Peak Hour Factor	0.94	0.94	0.94							0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2							2	2	0
Cap, veh/h	0	720	420							189	2572	0
Arrive On Green	0.00	0.11	0.11							0.56	0.56	0.00
Sat Flow, veh/h	0	2255	1259							256	4783	0
Grp Volume(v), veh/h	0	139	137							572	982	0
Grp Sat Flow(s),veh/h/ln	0	1777	1644							1789	1549	0
Q Serve(g_s), s	0.0	6.4	6.9							10.8	18.6	0.0
Cycle Q Clear(g_c), s	0.0	6.4	6.9							18.3	18.6	0.0
Prop In Lane	0.00		0.77							0.17		0.00
Lane Grp Cap(c), veh/h	0	592	548							1048	1721	0
V/C Ratio(X)	0.00	0.23	0.25							0.55	0.57	0.00
Avail Cap(c_a), veh/h	0	592	548							1048	1721	0
HCM Platoon Ratio	1.00	0.33	0.33							1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00							1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	29.6	29.7							12.9	13.0	0.0
Incr Delay (d2), s/veh	0.0	0.9	1.1							2.0	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0							0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.0	3.0							7.3	6.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	30.5	30.8							14.9	14.4	0.0
LnGrp LOS	A	C	C							B	B	A
Approach Vol, veh/h		276									1554	
Approach Delay, s/veh		30.7									14.6	
Approach LOS		C									B	

Timer - Assigned Phs		2		4
Phs Duration (G+Y+Rc), s		35.0		55.0
Change Period (Y+Rc), s		* 4.8		* 4.6
Max Green Setting (Gmax), s		* 30		* 50
Max Q Clear Time (g_c+I1), s		8.9		20.6
Green Ext Time (p_c), s		1.6		13.8

Intersection Summary			
HCM 6th Ctrl Delay			17.0
HCM 6th LOS			B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	421	93	126	811	0	0	0	0	62	1277	146
Future Volume (veh/h)	0	421	93	126	811	0	0	0	0	62	1277	146
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	439	97	131	845	0				65	1330	152
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1417	311	209	1271	0				87	1901	599
Arrive On Green	0.00	0.49	0.50	0.50	0.49	0.00				0.39	0.38	0.38
Sat Flow, veh/h	0	2991	635	324	2684	0				231	5032	1585
Grp Volume(v), veh/h	0	268	268	466	510	0				523	872	152
Grp Sat Flow(s),veh/h/ln	0	1777	1756	1306	1617	0				1859	1702	1585
Q Serve(g_s), s	0.0	8.2	8.3	19.2	21.2	0.0				21.9	19.3	5.9
Cycle Q Clear(g_c), s	0.0	8.2	8.3	27.5	21.2	0.0				21.9	19.3	5.9
Prop In Lane	0.00		0.36	0.28		0.00				0.12		1.00
Lane Grp Cap(c), veh/h	0	869	858	700	790	0				702	1286	599
V/C Ratio(X)	0.00	0.31	0.31	0.67	0.64	0.00				0.75	0.68	0.25
Avail Cap(c_a), veh/h	0	869	858	700	790	0				702	1286	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	13.8	13.8	19.4	17.2	0.0				24.2	23.4	19.3
Incr Delay (d2), s/veh	0.0	0.9	0.9	5.0	4.0	0.0				7.1	2.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.3	3.3	8.3	8.2	0.0				10.6	7.9	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	14.8	14.7	24.4	21.2	0.0				31.2	26.3	20.3
LnGrp LOS	A	B	B	C	C	A				C	C	C
Approach Vol, veh/h		536			976						1547	
Approach Delay, s/veh		14.8			22.7						27.4	
Approach LOS		B			C						C	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		50.0		40.0		50.0						
Change Period (Y+Rc), s		* 5.3		5.1		* 5.3						
Max Green Setting (Gmax), s		* 45		34.9		* 45						
Max Q Clear Time (g_c+I1), s		29.5		23.9		10.3						
Green Ext Time (p_c), s		6.1		7.0		3.6						

Intersection Summary			
HCM 6th Ctrl Delay			23.7
HCM 6th LOS			C

Notes

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

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	25	247	17	0	0	0	0	335	42	80	168	0
Future Volume (veh/h)	25	247	17	0	0	0	0	335	42	80	168	0
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	1900	1870	1900				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	28	274	19				0	372	47	89	187	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	2	0				0	2	2	2	2	0
Cap, veh/h	133	1364	99				0	1412	177	358	871	0
Arrive On Green	0.44	0.43	0.44				0.00	0.44	0.45	0.45	0.44	0.00
Sat Flow, veh/h	308	3148	228				0	3270	399	654	2044	0
Grp Volume(v), veh/h	169	0	152				0	207	212	130	146	0
Grp Sat Flow(s),veh/h/ln	1855	0	1829				0	1777	1799	995	1617	0
Q Serve(g_s), s	5.1	0.0	4.6				0.0	6.6	6.7	5.5	5.0	0.0
Cycle Q Clear(g_c), s	5.1	0.0	4.6				0.0	6.6	6.7	12.2	5.0	0.0
Prop In Lane	0.17		0.12				0.00		0.22	0.69		0.00
Lane Grp Cap(c), veh/h	804	0	793				0	790	799	516	719	0
V/C Ratio(X)	0.21	0.00	0.19				0.00	0.26	0.27	0.25	0.20	0.00
Avail Cap(c_a), veh/h	804	0	793				0	790	799	516	719	0
HCM Platoon Ratio	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				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.9	0.0	15.7				0.0	15.7	15.7	18.1	15.3	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.5				0.0	0.8	0.8	1.2	0.6	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
%ile BackOfQ(50%),veh/ln	2.2	0.0	2.0				0.0	2.8	2.8	1.9	1.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.5	0.0	16.3				0.0	16.5	16.5	19.3	15.9	0.0
LnGrp LOS	B	A	B				A	B	B	B	B	A
Approach Vol, veh/h		321						419			276	
Approach Delay, s/veh		16.4						16.5			17.5	
Approach LOS		B						B			B	

Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		44.6		45.4				45.4				
Change Period (Y+Rc), s		5.1		* 4.8				* 4.8				
Max Green Setting (Gmax), s		39.5		* 29				* 41				
Max Q Clear Time (g_c+I1), s		7.1		14.2				8.7				
Green Ext Time (p_c), s		2.0		1.5				2.7				

Intersection Summary		
HCM 6th Ctrl Delay		16.7
HCM 6th LOS		B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	657	62	27	592	89	77	211	55	38	85	137
Future Volume (veh/h)	120	657	62	27	592	89	77	211	55	38	85	137
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	125	684	65	28	617	93	80	220	57	40	89	143
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	267	1371	129	84	1665	247	133	314	76	154	316	458
Arrive On Green	0.59	0.58	0.59	1.00	1.00	1.00	0.30	0.29	0.30	0.30	0.29	0.29
Sat Flow, veh/h	370	2372	223	71	2882	427	290	1088	262	353	1093	1585
Grp Volume(v), veh/h	390	0	484	384	0	354	357	0	0	129	0	143
Grp Sat Flow(s),veh/h/ln	1304	0	1662	1755	0	1625	1641	0	0	1446	0	1585
Q Serve(g_s), s	9.7	0.0	15.6	0.0	0.0	0.0	12.2	0.0	0.0	0.0	0.0	6.3
Cycle Q Clear(g_c), s	13.9	0.0	15.6	0.0	0.0	0.0	17.3	0.0	0.0	4.9	0.0	6.3
Prop In Lane	0.32		0.13	0.07		0.26	0.22		0.16	0.31		1.00
Lane Grp Cap(c), veh/h	819	0	960	1074	0	939	538	0	0	483	0	458
V/C Ratio(X)	0.48	0.00	0.50	0.36	0.00	0.38	0.66	0.00	0.00	0.27	0.00	0.31
Avail Cap(c_a), veh/h	819	0	960	1074	0	939	538	0	0	483	0	458
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.85	0.00	0.85	1.00	0.00	0.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	10.5	0.0	11.3	0.0	0.0	0.0	28.6	0.0	0.0	24.3	0.0	25.0
Incr Delay (d2), s/veh	2.0	0.0	1.9	0.8	0.0	1.0	6.4	0.0	0.0	1.3	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	5.7	0.2	0.0	0.3	7.6	0.0	0.0	2.2	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.5	0.0	13.2	0.8	0.0	1.0	34.9	0.0	0.0	25.7	0.0	26.8
LnGrp LOS	B	A	B	A	A	A	C	A	A	C	A	C
Approach Vol, veh/h		874			738			357			272	
Approach Delay, s/veh		12.9			0.9			34.9			26.2	
Approach LOS		B			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		58.0		32.0		58.0		32.0				
Change Period (Y+Rc), s		5.1		* 5.2		5.1		* 5.2				
Max Green Setting (Gmax), s		52.9		* 27		52.9		* 27				
Max Q Clear Time (g_c+I1), s		2.0		8.3		17.6		19.3				
Green Ext Time (p_c), s		5.7		1.1		7.6		1.3				
Intersection Summary												
HCM 6th Ctrl Delay			14.1									
HCM 6th LOS			B									
Notes												

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

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	310	166	0	0	0	0	0	0	180	750	0
Future Volume (veh/h)	0	310	166	0	0	0	0	0	0	180	750	0
Initial Q (Qb), veh	0	0	0							0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00							1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00							1.00	1.00	1.00
Work Zone On Approach		No									No	
Adj Sat Flow, veh/h/ln	0	1870	1870							1870	1870	0
Adj Flow Rate, veh/h	0	330	177							191	798	0
Peak Hour Factor	0.94	0.94	0.94							0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2							2	2	0
Cap, veh/h	0	772	406							503	1996	0
Arrive On Green	0.00	0.34	0.35							0.52	0.51	0.00
Sat Flow, veh/h	0	2345	1183							824	4034	0
Grp Volume(v), veh/h	0	259	248							352	637	0
Grp Sat Flow(s),veh/h/ln	0	1777	1657							1607	1549	0
Q Serve(g_s), s	0.0	7.8	8.1							7.5	8.8	0.0
Cycle Q Clear(g_c), s	0.0	7.8	8.1							9.2	8.8	0.0
Prop In Lane	0.00		0.71							0.54		0.00
Lane Grp Cap(c), veh/h	0	609	568							913	1593	0
V/C Ratio(X)	0.00	0.43	0.44							0.39	0.40	0.00
Avail Cap(c_a), veh/h	0	609	568							913	1593	0
HCM Platoon Ratio	1.00	1.00	1.00							1.00	1.00	1.00
Upstream Filter(I)	0.00	0.99	0.99							1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	17.7	17.7							10.4	10.4	0.0
Incr Delay (d2), s/veh	0.0	2.1	2.4							1.2	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0							0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	3.2							3.2	2.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	19.8	20.1							11.6	11.1	0.0
LnGrp LOS	A	B	C							B	B	A
Approach Vol, veh/h		507									989	
Approach Delay, s/veh		20.0									11.3	
Approach LOS		B									B	

Timer - Assigned Phs		2		4								
Phs Duration (G+Y+Rc), s		29.1		40.9								
Change Period (Y+Rc), s		* 4.8		* 4.6								
Max Green Setting (Gmax), s		* 24		* 36								
Max Q Clear Time (g_c+I1), s		10.1		11.2								
Green Ext Time (p_c), s		2.7		7.2								

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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	618	168	85	586	0	0	0	0	42	741	123
Future Volume (veh/h)	0	618	168	85	586	0	0	0	0	42	741	123
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	644	175	89	610	0				44	772	128
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1381	375	204	1315	0				98	1831	581
Arrive On Green	0.00	1.00	1.00	0.51	0.50	0.00				0.38	0.37	0.37
Sat Flow, veh/h	0	2856	750	306	2715	0				267	4994	1585
Grp Volume(v), veh/h	0	414	405	321	378	0				306	510	128
Grp Sat Flow(s),veh/h/ln	0	1777	1735	1319	1617	0				1857	1702	1585
Q Serve(g_s), s	0.0	0.0	0.0	6.8	13.7	0.0				11.2	10.0	5.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	12.0	13.7	0.0				11.2	10.0	5.0
Prop In Lane	0.00		0.43	0.28		0.00				0.14		1.00
Lane Grp Cap(c), veh/h	0	888	868	722	808	0				681	1248	581
V/C Ratio(X)	0.00	0.47	0.47	0.45	0.47	0.00				0.45	0.41	0.22
Avail Cap(c_a), veh/h	0	888	868	722	808	0				681	1248	581
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.75	0.75	1.00	1.00	0.00				0.93	0.93	0.93
Uniform Delay (d), s/veh	0.0	0.0	0.0	13.8	14.7	0.0				21.6	21.2	19.6
Incr Delay (d2), s/veh	0.0	1.3	1.4	2.0	1.9	0.0				2.0	0.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.3	4.1	5.2	0.0				5.1	4.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	1.3	1.4	15.8	16.6	0.0				23.6	22.2	20.4
LnGrp LOS	A	A	A	B	B	A				C	C	C
Approach Vol, veh/h		819			699						944	
Approach Delay, s/veh		1.3			16.2						22.4	
Approach LOS		A			B						C	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		51.1		38.9		51.1						
Change Period (Y+Rc), s		* 5.3		5.1		* 5.3						
Max Green Setting (Gmax), s		* 46		33.8		* 46						
Max Q Clear Time (g_c+I1), s		15.7		13.2		2.0						
Green Ext Time (p_c), s		5.5		5.9		6.3						

Intersection Summary			
HCM 6th Ctrl Delay			13.6
HCM 6th LOS			B

Notes

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

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	71	316	30	0	0	0	0	338	70	122	387	0
Future Volume (veh/h)	71	316	30	0	0	0	0	338	70	122	387	0
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	1900	1870	1900				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	76	336	32				0	360	74	130	412	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	0				0	2	2	2	2	0
Cap, veh/h	180	835	83				0	1699	346	397	1284	0
Arrive On Green	0.30	0.30	0.30				0.00	0.58	0.59	0.59	0.58	0.00
Sat Flow, veh/h	600	2785	277				0	3035	598	582	2308	0
Grp Volume(v), veh/h	233	0	211				0	216	218	251	291	0
Grp Sat Flow(s),veh/h/ln	1840	0	1821				0	1777	1763	1188	1617	0
Q Serve(g_s), s	9.1	0.0	8.2				0.0	5.3	5.3	7.3	8.4	0.0
Cycle Q Clear(g_c), s	9.1	0.0	8.2				0.0	5.3	5.3	12.6	8.4	0.0
Prop In Lane	0.33		0.15				0.00		0.34	0.52		0.00
Lane Grp Cap(c), veh/h	552	0	546				0	1027	1018	757	934	0
V/C Ratio(X)	0.42	0.00	0.39				0.00	0.21	0.21	0.33	0.31	0.00
Avail Cap(c_a), veh/h	552	0	546				0	1027	1018	757	934	0
HCM Platoon Ratio	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				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.2	0.0	24.9				0.0	9.1	9.1	10.8	9.8	0.0
Incr Delay (d2), s/veh	2.4	0.0	2.1				0.0	0.5	0.5	1.2	0.9	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
%ile BackOfQ(50%),veh/ln	4.3	0.0	3.8				0.0	2.0	2.0	2.8	2.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.6	0.0	27.0				0.0	9.6	9.6	12.0	10.7	0.0
LnGrp LOS	C	A	C				A	A	A	B	B	A
Approach Vol, veh/h		444						434			542	
Approach Delay, s/veh		27.3						9.6			11.3	
Approach LOS		C						A			B	

Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		32.5		57.5				57.5				
Change Period (Y+Rc), s		5.1		* 4.8				* 4.8				
Max Green Setting (Gmax), s		27.4		* 53				* 53				
Max Q Clear Time (g_c+I1), s		11.1		14.6				7.3				
Green Ext Time (p_c), s		2.4		4.1				2.9				

Intersection Summary			
HCM 6th Ctrl Delay			15.8
HCM 6th LOS			B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	646	114	43	973	135	75	230	53	51	150	212
Future Volume (veh/h)	101	646	114	43	973	135	75	230	53	51	150	212
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	107	687	121	46	1035	144	80	245	56	54	160	226
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	896	184	74	1329	197	139	395	84	162	451	581
Arrive On Green	0.51	0.50	0.51	0.51	0.50	0.51	0.38	0.37	0.38	0.38	0.37	0.37
Sat Flow, veh/h	127	1792	367	63	2658	394	247	1077	228	305	1230	1585
Grp Volume(v), veh/h	376	0	539	629	0	596	381	0	0	214	0	226
Grp Sat Flow(s),veh/h/ln	650	0	1636	1484	0	1631	1552	0	0	1535	0	1585
Q Serve(g_s), s	20.0	0.0	22.1	12.8	0.0	25.9	10.2	0.0	0.0	0.0	0.0	9.5
Cycle Q Clear(g_c), s	45.9	0.0	22.1	34.8	0.0	25.9	18.3	0.0	0.0	8.0	0.0	9.5
Prop In Lane	0.28		0.22	0.07		0.24	0.21		0.15	0.25		1.00
Lane Grp Cap(c), veh/h	383	0	818	800	0	816	631	0	0	627	0	581
V/C Ratio(X)	0.98	0.00	0.66	0.79	0.00	0.73	0.60	0.00	0.00	0.34	0.00	0.39
Avail Cap(c_a), veh/h	383	0	818	800	0	816	631	0	0	627	0	581
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)	0.70	0.00	0.70	0.09	0.00	0.09	0.98	0.00	0.00	0.94	0.00	0.94
Uniform Delay (d), s/veh	27.4	0.0	16.7	19.1	0.0	17.6	23.5	0.0	0.0	20.3	0.0	21.1
Incr Delay (d2), s/veh	34.4	0.0	2.9	0.7	0.0	0.5	4.2	0.0	0.0	1.4	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	0.0	8.3	10.9	0.0	9.1	7.1	0.0	0.0	3.3	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.8	0.0	19.6	19.8	0.0	18.2	27.6	0.0	0.0	21.7	0.0	22.9
LnGrp LOS	E	A	B	B	A	B	C	A	A	C	A	C
Approach Vol, veh/h		915			1225			381			440	
Approach Delay, s/veh		36.9			19.0			27.6			22.3	
Approach LOS		D			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		51.0		39.0		51.0		39.0				
Change Period (Y+Rc), s		5.1		* 5.2		5.1		* 5.2				
Max Green Setting (Gmax), s		45.9		* 34		45.9		* 34				
Max Q Clear Time (g_c+I1), s		36.8		11.5		47.9		20.3				
Green Ext Time (p_c), s		5.4		2.1		0.0		2.1				

Intersection Summary			
HCM 6th Ctrl Delay			26.2
HCM 6th LOS			C

Notes

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

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	387	174	0	0	0	0	0	0	155	1646	0
Future Volume (veh/h)	0	387	174	0	0	0	0	0	0	155	1646	0
Initial Q (Qb), veh	0	0	0							0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00							1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00							1.00	1.00	1.00
Work Zone On Approach		No									No	
Adj Sat Flow, veh/h/ln	0	1870	1870							1870	1870	0
Adj Flow Rate, veh/h	0	412	185							165	1751	0
Peak Hour Factor	0.94	0.94	0.94							0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2							2	2	0
Cap, veh/h	0	798	354							267	2473	0
Arrive On Green	0.00	0.33	0.34							0.56	0.56	0.00
Sat Flow, veh/h	0	2487	1063							391	4605	0
Grp Volume(v), veh/h	0	305	292							699	1217	0
Grp Sat Flow(s),veh/h/ln	0	1777	1679							1745	1549	0
Q Serve(g_s), s	0.0	12.4	12.6							24.0	25.9	0.0
Cycle Q Clear(g_c), s	0.0	12.4	12.6							26.4	25.9	0.0
Prop In Lane	0.00		0.63							0.24		0.00
Lane Grp Cap(c), veh/h	0	592	560							1027	1721	0
V/C Ratio(X)	0.00	0.51	0.52							0.68	0.71	0.00
Avail Cap(c_a), veh/h	0	592	560							1027	1721	0
HCM Platoon Ratio	1.00	1.00	1.00							1.00	1.00	1.00
Upstream Filter(I)	0.00	0.91	0.91							1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	24.1	24.2							14.7	14.6	0.0
Incr Delay (d2), s/veh	0.0	2.9	3.2							3.6	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0							0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.5	5.4							10.4	8.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	27.0	27.3							18.3	17.1	0.0
LnGrp LOS	A	C	C							B	B	A
Approach Vol, veh/h		597									1916	
Approach Delay, s/veh		27.2									17.6	
Approach LOS		C									B	

Timer - Assigned Phs		2		4								
Phs Duration (G+Y+Rc), s		35.0		55.0								
Change Period (Y+Rc), s		* 4.8		* 4.6								
Max Green Setting (Gmax), s		* 30		* 50								
Max Q Clear Time (g_c+I1), s		14.6		28.4								
Green Ext Time (p_c), s		3.4		14.7								

Intersection Summary			
HCM 6th Ctrl Delay			19.8
HCM 6th LOS			B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	584	157	148	1097	0	0	0	0	75	1589	174
Future Volume (veh/h)	0	584	157	148	1097	0	0	0	0	75	1589	174
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	608	164	154	1143	0				78	1655	181
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1353	364	168	1175	0				84	1904	599
Arrive On Green	0.00	0.49	0.50	0.50	0.49	0.00				0.39	0.38	0.38
Sat Flow, veh/h	0	2861	745	240	2488	0				223	5040	1585
Grp Volume(v), veh/h	0	390	382	594	703	0				650	1083	181
Grp Sat Flow(s),veh/h/ln	0	1777	1736	1026	1617	0				1859	1702	1585
Q Serve(g_s), s	0.0	12.9	12.9	31.8	35.4	0.0				30.1	26.1	7.2
Cycle Q Clear(g_c), s	0.0	12.9	12.9	44.7	35.4	0.0				30.1	26.1	7.2
Prop In Lane	0.00		0.43	0.26		0.00				0.12		1.00
Lane Grp Cap(c), veh/h	0	869	849	560	790	0				702	1286	599
V/C Ratio(X)	0.00	0.45	0.45	1.06	0.89	0.00				0.93	0.84	0.30
Avail Cap(c_a), veh/h	0	869	849	560	790	0				702	1286	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	15.1	15.0	28.5	20.8	0.0				26.7	25.5	19.7
Incr Delay (d2), s/veh	0.0	1.7	1.7	55.2	14.2	0.0				20.0	6.8	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.3	5.2	20.6	15.4	0.0				16.5	11.3	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.7	16.7	83.7	35.0	0.0				46.7	32.4	21.0
LnGrp LOS	A	B	B	F	C	A				D	C	C
Approach Vol, veh/h		772			1297						1914	
Approach Delay, s/veh		16.7			57.3						36.2	
Approach LOS		B			E						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		50.0		40.0		50.0						
Change Period (Y+Rc), s		* 5.3		5.1		* 5.3						
Max Green Setting (Gmax), s		* 45		34.9		* 45						
Max Q Clear Time (g_c+I1), s		46.7		32.1		14.9						
Green Ext Time (p_c), s		0.0		2.4		5.5						

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

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

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	25	254	17	0	0	0	0	338	42	81	168	0
Future Volume (veh/h)	25	254	17	0	0	0	0	338	42	81	168	0
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	1900	1870	1900				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	28	282	19				0	376	47	90	187	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	2	0				0	2	2	2	2	0
Cap, veh/h	130	1370	97				0	1414	176	359	866	0
Arrive On Green	0.44	0.43	0.44				0.00	0.44	0.45	0.45	0.44	0.00
Sat Flow, veh/h	300	3162	223				0	3275	395	654	2033	0
Grp Volume(v), veh/h	173	0	156				0	209	214	130	147	0
Grp Sat Flow(s),veh/h/ln	1855	0	1830				0	1777	1799	986	1617	0
Q Serve(g_s), s	5.2	0.0	4.8				0.0	6.7	6.7	5.6	5.0	0.0
Cycle Q Clear(g_c), s	5.2	0.0	4.8				0.0	6.7	6.7	12.4	5.0	0.0
Prop In Lane	0.16		0.12				0.00		0.22	0.69		0.00
Lane Grp Cap(c), veh/h	804	0	793				0	790	800	512	719	0
V/C Ratio(X)	0.22	0.00	0.20				0.00	0.26	0.27	0.25	0.20	0.00
Avail Cap(c_a), veh/h	804	0	793				0	790	800	512	719	0
HCM Platoon Ratio	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				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.9	0.0	15.8				0.0	15.7	15.7	18.2	15.3	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.6				0.0	0.8	0.8	1.2	0.6	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
%ile BackOfQ(50%),veh/ln	2.3	0.0	2.0				0.0	2.8	2.9	2.0	1.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.5	0.0	16.3				0.0	16.6	16.5	19.4	15.9	0.0
LnGrp LOS	B	A	B				A	B	B	B	B	A
Approach Vol, veh/h		329						423			277	
Approach Delay, s/veh		16.4						16.5			17.6	
Approach LOS		B						B			B	

Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		44.6		45.4				45.4				
Change Period (Y+Rc), s		5.1		* 4.8				* 4.8				
Max Green Setting (Gmax), s		39.5		* 29				* 41				
Max Q Clear Time (g_c+I1), s		7.2		14.4				8.7				
Green Ext Time (p_c), s		2.0		1.5				2.7				

Intersection Summary			
HCM 6th Ctrl Delay			16.8
HCM 6th LOS			B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	662	62	27	626	92	77	211	55	38	85	137
Future Volume (veh/h)	120	662	62	27	626	92	77	211	55	38	85	137
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	125	690	65	28	652	96	80	220	57	40	89	143
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	263	1363	127	81	1677	243	133	314	76	154	316	458
Arrive On Green	0.59	0.58	0.59	1.00	1.00	1.00	0.30	0.29	0.30	0.30	0.29	0.29
Sat Flow, veh/h	364	2358	220	66	2902	420	290	1088	262	353	1093	1585
Grp Volume(v), veh/h	388	0	492	404	0	372	357	0	0	129	0	143
Grp Sat Flow(s),veh/h/ln	1280	0	1662	1762	0	1626	1641	0	0	1446	0	1585
Q Serve(g_s), s	9.9	0.0	15.9	0.0	0.0	0.0	12.2	0.0	0.0	0.0	0.0	6.3
Cycle Q Clear(g_c), s	14.1	0.0	15.9	0.0	0.0	0.0	17.3	0.0	0.0	4.9	0.0	6.3
Prop In Lane	0.32		0.13	0.07		0.26	0.22		0.16	0.31		1.00
Lane Grp Cap(c), veh/h	805	0	961	1078	0	940	538	0	0	483	0	458
V/C Ratio(X)	0.48	0.00	0.51	0.37	0.00	0.40	0.66	0.00	0.00	0.27	0.00	0.31
Avail Cap(c_a), veh/h	805	0	961	1078	0	940	538	0	0	483	0	458
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.84	0.00	0.84	1.00	0.00	0.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	10.5	0.0	11.3	0.0	0.0	0.0	28.6	0.0	0.0	24.3	0.0	25.0
Incr Delay (d2), s/veh	2.1	0.0	1.9	0.8	0.0	1.0	6.4	0.0	0.0	1.3	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	5.8	0.3	0.0	0.3	7.6	0.0	0.0	2.2	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.6	0.0	13.3	0.8	0.0	1.0	34.9	0.0	0.0	25.7	0.0	26.8
LnGrp LOS	B	A	B	A	A	A	C	A	A	C	A	C
Approach Vol, veh/h		880			776			357			272	
Approach Delay, s/veh		13.0			0.9			34.9			26.2	
Approach LOS		B			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		58.0		32.0		58.0		32.0				
Change Period (Y+Rc), s		5.1		* 5.2		5.1		* 5.2				
Max Green Setting (Gmax), s		52.9		* 27		52.9		* 27				
Max Q Clear Time (g_c+I1), s		2.0		8.3		17.9		19.3				
Green Ext Time (p_c), s		6.1		1.1		7.7		1.3				
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.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	334	169	0	0	0	0	0	0	180	753	0
Future Volume (veh/h)	0	334	169	0	0	0	0	0	0	180	753	0
Initial Q (Qb), veh	0	0	0							0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00							1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00							1.00	1.00	1.00
Work Zone On Approach		No									No	
Adj Sat Flow, veh/h/ln	0	1870	1870							1870	1870	0
Adj Flow Rate, veh/h	0	355	180							191	801	0
Peak Hour Factor	0.94	0.94	0.94							0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2							2	2	0
Cap, veh/h	0	787	392							502	1997	0
Arrive On Green	0.00	0.34	0.35							0.52	0.51	0.00
Sat Flow, veh/h	0	2390	1144							822	4037	0
Grp Volume(v), veh/h	0	273	262							353	639	0
Grp Sat Flow(s),veh/h/ln	0	1777	1664							1608	1549	0
Q Serve(g_s), s	0.0	8.4	8.6							7.5	8.8	0.0
Cycle Q Clear(g_c), s	0.0	8.4	8.6							9.2	8.8	0.0
Prop In Lane	0.00		0.69							0.54		0.00
Lane Grp Cap(c), veh/h	0	609	571							913	1593	0
V/C Ratio(X)	0.00	0.45	0.46							0.39	0.40	0.00
Avail Cap(c_a), veh/h	0	609	571							913	1593	0
HCM Platoon Ratio	1.00	1.00	1.00							1.00	1.00	1.00
Upstream Filter(I)	0.00	0.98	0.98							1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	17.9	17.8							10.4	10.4	0.0
Incr Delay (d2), s/veh	0.0	2.3	2.6							1.2	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0							0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.6	3.5							3.2	2.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	20.2	20.4							11.6	11.2	0.0
LnGrp LOS	A	C	C							B	B	A
Approach Vol, veh/h		535									992	
Approach Delay, s/veh		20.3									11.3	
Approach LOS		C									B	
Timer - Assigned Phs		2		4								
Phs Duration (G+Y+Rc), s		29.1		40.9								
Change Period (Y+Rc), s		* 4.8		* 4.6								
Max Green Setting (Gmax), s		* 24		* 36								
Max Q Clear Time (g_c+I1), s		10.6		11.2								
Green Ext Time (p_c), s		2.8		7.3								
Intersection Summary												
HCM 6th Ctrl Delay			14.5									
HCM 6th LOS			B									

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	627	176	85	601	0	0	0	0	42	744	126
Future Volume (veh/h)	0	627	176	85	601	0	0	0	0	42	744	126
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	653	183	89	626	0				44	775	131
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1371	384	200	1319	0				98	1832	581
Arrive On Green	0.00	1.00	1.00	0.51	0.50	0.00				0.38	0.37	0.37
Sat Flow, veh/h	0	2835	768	298	2724	0				266	4995	1585
Grp Volume(v), veh/h	0	423	413	328	387	0				307	512	131
Grp Sat Flow(s),veh/h/ln	0	1777	1732	1320	1617	0				1857	1702	1585
Q Serve(g_s), s	0.0	0.0	0.0	6.9	14.1	0.0				11.3	10.1	5.1
Cycle Q Clear(g_c), s	0.0	0.0	0.0	12.3	14.1	0.0				11.3	10.1	5.1
Prop In Lane	0.00		0.44	0.27		0.00				0.14		1.00
Lane Grp Cap(c), veh/h	0	888	866	722	808	0				681	1248	581
V/C Ratio(X)	0.00	0.48	0.48	0.45	0.48	0.00				0.45	0.41	0.23
Avail Cap(c_a), veh/h	0	888	866	722	808	0				681	1248	581
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.73	0.73	1.00	1.00	0.00				0.93	0.93	0.93
Uniform Delay (d), s/veh	0.0	0.0	0.0	13.9	14.8	0.0				21.6	21.2	19.7
Incr Delay (d2), s/veh	0.0	1.3	1.4	2.1	2.0	0.0				2.0	0.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.3	4.2	5.3	0.0				5.1	4.1	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	1.3	1.4	15.9	16.8	0.0				23.6	22.2	20.5
LnGrp LOS	A	A	A	B	B	A				C	C	C
Approach Vol, veh/h		836			715						950	
Approach Delay, s/veh		1.4			16.4						22.4	
Approach LOS		A			B						C	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		51.1		38.9		51.1						
Change Period (Y+Rc), s		* 5.3		5.1		* 5.3						
Max Green Setting (Gmax), s		* 46		33.8		* 46						
Max Q Clear Time (g_c+I1), s		16.1		13.3		2.0						
Green Ext Time (p_c), s		5.6		5.9		6.5						
Intersection Summary												
HCM 6th Ctrl Delay			13.7									
HCM 6th LOS			B									
Notes												

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

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	71	338	30	0	0	0	0	340	70	127	387	0
Future Volume (veh/h)	71	338	30	0	0	0	0	340	70	127	387	0
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	1900	1870	1900				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	76	360	32				0	362	74	135	412	0
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	0				0	2	2	2	2	0
Cap, veh/h	171	850	79				0	1701	344	405	1266	0
Arrive On Green	0.30	0.30	0.30				0.00	0.58	0.59	0.59	0.58	0.00
Sat Flow, veh/h	569	2833	263				0	3038	596	594	2276	0
Grp Volume(v), veh/h	246	0	222				0	217	219	251	296	0
Grp Sat Flow(s),veh/h/ln	1842	0	1823				0	1777	1763	1169	1617	0
Q Serve(g_s), s	9.7	0.0	8.7				0.0	5.3	5.4	7.7	8.5	0.0
Cycle Q Clear(g_c), s	9.7	0.0	8.7				0.0	5.3	5.4	13.1	8.5	0.0
Prop In Lane	0.31		0.14				0.00		0.34	0.54		0.00
Lane Grp Cap(c), veh/h	553	0	547				0	1027	1019	746	934	0
V/C Ratio(X)	0.45	0.00	0.41				0.00	0.21	0.22	0.34	0.32	0.00
Avail Cap(c_a), veh/h	553	0	547				0	1027	1019	746	934	0
HCM Platoon Ratio	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				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.4	0.0	25.1				0.0	9.1	9.1	11.0	9.8	0.0
Incr Delay (d2), s/veh	2.6	0.0	2.2				0.0	0.5	0.5	1.2	0.9	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
%ile BackOfQ(50%),veh/ln	4.5	0.0	4.0				0.0	2.0	2.0	2.8	3.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.0	0.0	27.3				0.0	9.6	9.6	12.2	10.7	0.0
LnGrp LOS	C	A	C				A	A	A	B	B	A
Approach Vol, veh/h		468						436			547	
Approach Delay, s/veh		27.7						9.6			11.4	
Approach LOS		C						A			B	

Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		32.5		57.5				57.5				
Change Period (Y+Rc), s		5.1		* 4.8				* 4.8				
Max Green Setting (Gmax), s		27.4		* 53				* 53				
Max Q Clear Time (g_c+I1), s		11.7		15.1				7.4				
Green Ext Time (p_c), s		2.5		4.1				2.9				

Intersection Summary		
HCM 6th Ctrl Delay		16.1
HCM 6th LOS		B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	659	114	43	990	137	75	230	54	51	150	212
Future Volume (veh/h)	101	659	114	43	990	137	75	230	54	51	150	212
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	107	701	121	46	1053	146	80	245	57	54	160	226
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	895	181	73	1321	196	139	394	85	162	450	581
Arrive On Green	0.51	0.50	0.51	0.51	0.50	0.51	0.38	0.37	0.38	0.38	0.37	0.37
Sat Flow, veh/h	120	1791	361	61	2642	393	247	1074	232	305	1228	1585
Grp Volume(v), veh/h	381	0	548	638	0	607	382	0	0	214	0	226
Grp Sat Flow(s),veh/h/ln	635	0	1637	1464	0	1631	1552	0	0	1533	0	1585
Q Serve(g_s), s	19.3	0.0	22.6	13.8	0.0	26.6	10.3	0.0	0.0	0.0	0.0	9.5
Cycle Q Clear(g_c), s	45.9	0.0	22.6	36.4	0.0	26.6	18.3	0.0	0.0	8.0	0.0	9.5
Prop In Lane	0.28		0.22	0.07		0.24	0.21		0.15	0.25		1.00
Lane Grp Cap(c), veh/h	375	0	818	789	0	816	631	0	0	626	0	581
V/C Ratio(X)	1.02	0.00	0.67	0.81	0.00	0.74	0.61	0.00	0.00	0.34	0.00	0.39
Avail Cap(c_a), veh/h	375	0	818	789	0	816	631	0	0	626	0	581
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)	0.70	0.00	0.70	0.09	0.00	0.09	0.98	0.00	0.00	0.94	0.00	0.94
Uniform Delay (d), s/veh	27.7	0.0	16.8	19.6	0.0	17.8	23.5	0.0	0.0	20.3	0.0	21.1
Incr Delay (d2), s/veh	42.8	0.0	3.1	0.9	0.0	0.6	4.2	0.0	0.0	1.4	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.7	0.0	8.6	11.3	0.0	9.4	7.1	0.0	0.0	3.3	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.5	0.0	19.9	20.4	0.0	18.4	27.7	0.0	0.0	21.7	0.0	22.9
LnGrp LOS	F	A	B	C	A	B	C	A	A	C	A	C
Approach Vol, veh/h		929			1245			382			440	
Approach Delay, s/veh		40.6			19.4			27.7			22.3	
Approach LOS		D			B			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		51.0		39.0		51.0		39.0				
Change Period (Y+Rc), s		5.1		* 5.2		5.1		* 5.2				
Max Green Setting (Gmax), s		45.9		* 34		45.9		* 34				
Max Q Clear Time (g_c+I1), s		38.4		11.5		47.9		20.3				
Green Ext Time (p_c), s		4.7		2.1		0.0		2.1				
Intersection Summary												
HCM 6th Ctrl Delay			27.5									
HCM 6th LOS			C									

Notes

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

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	0	398	175	0	0	0	0	0	0	155	1654	0
Future Volume (veh/h)	0	398	175	0	0	0	0	0	0	155	1654	0
Initial Q (Qb), veh	0	0	0							0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00							1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00							1.00	1.00	1.00
Work Zone On Approach		No									No	
Adj Sat Flow, veh/h/ln	0	1870	1870							1870	1870	0
Adj Flow Rate, veh/h	0	423	186							165	1760	0
Peak Hour Factor	0.94	0.94	0.94							0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2							2	2	0
Cap, veh/h	0	803	350							266	2475	0
Arrive On Green	0.00	0.33	0.34							0.56	0.56	0.00
Sat Flow, veh/h	0	2503	1049							389	4608	0
Grp Volume(v), veh/h	0	311	298							702	1223	0
Grp Sat Flow(s),veh/h/ln	0	1777	1682							1746	1549	0
Q Serve(g_s), s	0.0	12.7	12.9							24.2	26.1	0.0
Cycle Q Clear(g_c), s	0.0	12.7	12.9							26.6	26.1	0.0
Prop In Lane	0.00		0.62							0.24		0.00
Lane Grp Cap(c), veh/h	0	592	561							1027	1721	0
V/C Ratio(X)	0.00	0.52	0.53							0.68	0.71	0.00
Avail Cap(c_a), veh/h	0	592	561							1027	1721	0
HCM Platoon Ratio	1.00	1.00	1.00							1.00	1.00	1.00
Upstream Filter(I)	0.00	0.90	0.90							1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	24.2	24.3							14.7	14.7	0.0
Incr Delay (d2), s/veh	0.0	3.0	3.2							3.7	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0							0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.7	5.5							10.5	8.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	27.2	27.5							18.4	17.2	0.0
LnGrp LOS	A	C	C							B	B	A
Approach Vol, veh/h		609									1925	
Approach Delay, s/veh		27.4									17.6	
Approach LOS		C									B	
Timer - Assigned Phs		2		4								
Phs Duration (G+Y+Rc), s		35.0		55.0								
Change Period (Y+Rc), s		* 4.8		* 4.6								
Max Green Setting (Gmax), s		* 30		* 50								
Max Q Clear Time (g_c+I1), s		14.9		28.6								
Green Ext Time (p_c), s		3.4		14.7								
Intersection Summary												
HCM 6th Ctrl Delay			20.0									
HCM 6th LOS			B									

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	589	161	148	1139	0	0	0	0	75	1590	182
Future Volume (veh/h)	0	589	161	148	1139	0	0	0	0	75	1590	182
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	614	168	154	1186	0				78	1656	190
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1348	368	163	1179	0				84	1904	599
Arrive On Green	0.00	0.49	0.50	0.50	0.49	0.00				0.39	0.38	0.38
Sat Flow, veh/h	0	2852	753	231	2496	0				223	5040	1585
Grp Volume(v), veh/h	0	395	387	616	724	0				651	1083	190
Grp Sat Flow(s),veh/h/ln	0	1777	1735	1026	1617	0				1859	1702	1585
Q Serve(g_s), s	0.0	13.2	13.1	31.5	37.3	0.0				30.1	26.1	7.6
Cycle Q Clear(g_c), s	0.0	13.2	13.1	44.7	37.3	0.0				30.1	26.1	7.6
Prop In Lane	0.00		0.43	0.25		0.00				0.12		1.00
Lane Grp Cap(c), veh/h	0	869	848	559	790	0				702	1286	599
V/C Ratio(X)	0.00	0.45	0.46	1.10	0.92	0.00				0.93	0.84	0.32
Avail Cap(c_a), veh/h	0	869	848	559	790	0				702	1286	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	15.1	15.0	28.6	21.3	0.0				26.7	25.6	19.8
Incr Delay (d2), s/veh	0.0	1.7	1.8	68.6	17.1	0.0				20.1	6.8	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.4	5.3	22.6	16.7	0.0				16.6	11.3	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.8	16.8	97.2	38.4	0.0				46.8	32.4	21.2
LnGrp LOS	A	B	B	F	D	A				D	C	C
Approach Vol, veh/h		782			1340						1924	
Approach Delay, s/veh		16.8			65.4						36.2	
Approach LOS		B			E						D	
Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		50.0		40.0		50.0						
Change Period (Y+Rc), s		* 5.3		5.1		* 5.3						
Max Green Setting (Gmax), s		* 45		34.9		* 45						
Max Q Clear Time (g_c+I1), s		46.7		32.1		15.2						
Green Ext Time (p_c), s		0.0		2.4		5.6						
Intersection Summary												
HCM 6th Ctrl Delay			42.1									
HCM 6th LOS			D									

Notes

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

APPENDIX E

LADOT VMT Calculator Worksheets

CITY OF LOS ANGELES VMT CALCULATOR Version 1.2

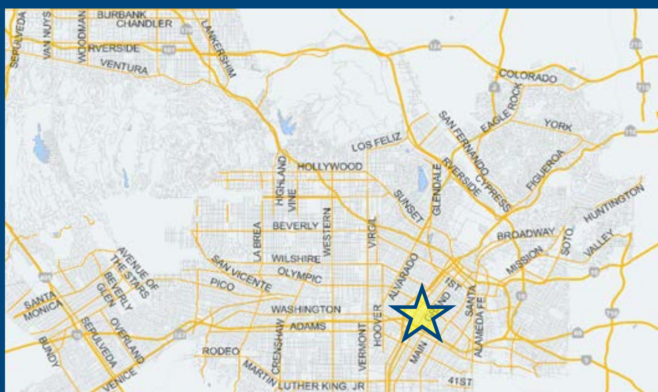
Project Screening Criteria: Is this project required to conduct a vehicle miles traveled analysis?

Project Information

Project: 1201 S. GRAND AVENUE PROJECT

Scenario:

Address: 34.040164, -118.263696



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

○ Yes ○ No

Existing Land Use

Land Use Type	Value	Unit
Office | General Office	8	ksf
Office | General Office	8	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	7.1	ksf
Housing | Multi-Family	312	DU
Retail | High-Turnover Sit-Down Restaurant	7.1	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 Project
57 Daily Vehicle Trips	1,366 Daily Vehicle Trips
417 Daily VMT	7,602 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

Criterion	Value
The net increase in daily trips < 250 trips	1,309 Net Daily Trips
The net increase in daily VMT ≤ 0	7,185 Net Daily VMT
The proposed project consists of only retail land uses ≤ 50,000 square feet total.	7.100 ksf

The proposed project is required to perform VMT analysis.

Measuring the Miles

4/22/2020

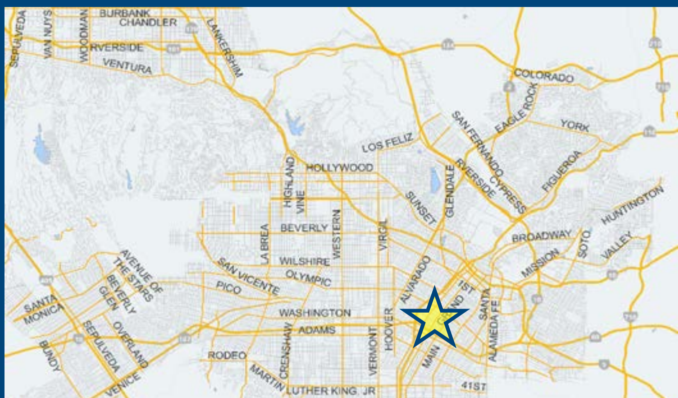
CITY OF LOS ANGELES VMT CALCULATOR Version 1.2

Project Information

Project: 1201 S. GRAND AVENUE PROJECT

Scenario:

Address: 34.040164, -118.263696



Proposed Project Land Use Type	Value	Unit
Housing | Multi-Family	312	DU
Retail | High-Turnover Sit-Down Restaurant	7.1	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

Reduce Parking Supply ☐ Proposed Prj ☐ Mitigation
- 100 — city code parking provision for the project site
- 74 — actual parking provision for the project site

Unbundle Parking ☐ Proposed Prj ☐ Mitigation
- 150 — monthly parking cost (dollar) for the project site

Parking Cash-Out ☐ Proposed Prj ☐ Mitigation
- 50 — percent of employees eligible

Price Workplace Parking ☐ Proposed Prj ☐ Mitigation
- 6.00 — daily parking charge (dollar)
- 25 — percent of employees subject to priced parking

Residential Area Parking Permits ☐ Proposed Prj ☐ Mitigation
- 200 — cost (dollar) of annual permit

B Transit

C Education & Encouragement

D Commute Trip Reductions

E Shared Mobility

F Bicycle Infrastructure

G Neighborhood Enhancement

Analysis Results

	Proposed Project	With Mitigation
Daily Vehicle Trips	**1,366**	**1,366**
Daily VMT	**7,602**	**7,602**
Household VMT per Capita	**5.6**	**5.6**
Work VMT per Employee	**N/A**	**N/A**

Significant VMT Impact?

Proposed Project	With Mitigation
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

CITY OF LOS ANGELES VMT CALCULATOR

Report 1: Project & Analysis Overview

Date: April 22, 2020
Project Name: 1201 S. GRAND AVENUE PROJECT
Project Scenario:
Project Address: 34.040164, -118.263696

Version 1.2

Project Information

Land Use Type		Value	Units
Housing	*Single Family*	*0*	*DU*
	Multi Family	312	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	7.100	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: April 22, 2020
Project Name: 1201 S. GRAND AVENUE PROJECT
Project Scenario:
Project Address: 34.040164, -118.263696

Version 1.2

Analysis Results

Total Employees: 28
Total Population: 703

Proposed Project		*With Mitigation*	
1,366	**Daily Vehicle Trips**	**1,366**	**Daily Vehicle Trips**
7,602	**Daily VMT**	**7,602**	**Daily VMT**
5.6	**Household VMT per Capita**	**5.6**	**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	No	Household > 6.0	No
Work > 7.6	N/A	Work > 7.6	N/A

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)*	*0*	*0*
	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*

TDM Adjustments by Trip Purpose & Strategy

Place type: Compact Infill

		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: Compact Infill

		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	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	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 sections 1 - 2
	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	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
MAX. TDM EFFECT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

= 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: April 22, 2020
Project Name: 1201 S. GRAND AVENUE PROJECT
Project Scenario:
Project Address: 34.040164, -118.263696

Version 1.2

MXD Methodology - Project Without TDM

	Unadjusted Trips	MXD Adjustment	MXD Trips	Average Trip Length	Unadjusted VMT	MXD VMT
Home Based Work Production	422	-30.6%	293	6.2	2,616	1,817
Home Based Other Production	1,131	-55.0%	509	4.2	4,750	2,138
Non-Home Based Other Production	132	-16.7%	110	7.5	990	825
Home-Based Work Attraction	41	-46.3%	22	7.9	324	174
Home-Based Other Attraction	506	-55.3%	226	5.7	2,884	1,288
Non-Home Based Other Attraction	245	-15.9%	206	6.6	1,617	1,360

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	0.0%	293	1,817	0.0%	293	1,817
Home Based Other Production	0.0%	509	2,138	0.0%	509	2,138
Non-Home Based Other Production	0.0%	110	825	0.0%	110	825
Home-Based Work Attraction	0.0%	22	174	0.0%	22	174
Home-Based Other Attraction	0.0%	226	1,288	0.0%	226	1,288
Non-Home Based Other Attraction	0.0%	206	1,360	0.0%	206	1,360

MXD VMT Methodology Per Capita & Per Employee

Total Population: 703
Total Employees: 28
APC: Central

	Proposed Project	*Project with Mitigation Measures*
Total Home Based Production VMT	**3,955**	**3,955**
Total Home Based Work Attraction VMT	**174**	**174**
Total Home Based VMT Per Capita	**5.6**	**5.6**
Total Work Based VMT Per Employee	**N/A**	**N/A**

APPENDIX F

Queue Analysis Summary Worksheets

Lane Group	SET	NET	SWT
Lane Group Flow (vph)	45	274	176
v/c Ratio	0.03	0.18	0.14
Control Delay	13.8	15.3	15.2
Queue Delay	0.0	0.0	0.0
Total Delay	13.8	15.3	15.2
Queue Length 50th (ft)	6	36	30
Queue Length 95th (ft)	16	58	50
Internal Link Dist (ft)	523	566	302
Turn Bay Length (ft)			
Base Capacity (vph)	1503	1554	1244
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.03	0.18	0.14

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	693	459	200	63	53
v/c Ratio	0.42	0.25	0.41	0.12	0.11
Control Delay	11.4	1.8	27.4	55.1	36.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	1.8	27.4	55.1	36.1
Queue Length 50th (ft)	105	5	86	39	0
Queue Length 95th (ft)	144	18	149	81	55
Internal Link Dist (ft)	177	414	456	566	
Turn Bay Length (ft)					
Base Capacity (vph)	1658	1867	488	517	495
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.42	0.25	0.41	0.12	0.11

Intersection Summary

Lane Group	SET	SWT
Lane Group Flow (vph)	211	610
v/c Ratio	0.18	0.23
Control Delay	10.6	7.9
Queue Delay	0.0	0.0
Total Delay	10.6	7.9
Queue Length 50th (ft)	20	39
Queue Length 95th (ft)	42	58
Internal Link Dist (ft)	329	331
Turn Bay Length (ft)		
Base Capacity (vph)	1197	2643
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.18	0.23

Intersection Summary

Lane Group	EBT	WBT	SBT	SBR
Lane Group Flow (vph)	621	459	478	74
v/c Ratio	0.36	0.34	0.26	0.12
Control Delay	9.3	14.5	20.4	5.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.3	14.5	20.4	5.4
Queue Length 50th (ft)	57	78	68	0
Queue Length 95th (ft)	74	113	94	27
Internal Link Dist (ft)	414	299	485	
Turn Bay Length (ft)				110
Base Capacity (vph)	1742	1345	1859	627
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.36	0.34	0.26	0.12

Intersection Summary

Lane Group	SET	NET	SWT
Lane Group Flow (vph)	108	267	383
v/c Ratio	0.10	0.13	0.23
Control Delay	20.8	6.0	9.7
Queue Delay	0.0	0.0	0.0
Total Delay	20.8	6.0	9.7
Queue Length 50th (ft)	21	16	51
Queue Length 95th (ft)	40	35	75
Internal Link Dist (ft)	523	566	302
Turn Bay Length (ft)			
Base Capacity (vph)	1038	1996	1672
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.10	0.13	0.23

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	593	916	211	153	159
v/c Ratio	0.51	0.56	0.35	0.24	0.24
Control Delay	16.8	17.1	21.4	26.0	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.8	17.1	21.4	26.0	12.3
Queue Length 50th (ft)	111	178	80	57	17
Queue Length 95th (ft)	159	236	138	114	73
Internal Link Dist (ft)	177	414	456	566	
Turn Bay Length (ft)					
Base Capacity (vph)	1159	1636	596	627	657
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.51	0.56	0.35	0.24	0.24

Intersection Summary

Lane Group	SET	SWT
Lane Group Flow (vph)	264	1546
v/c Ratio	0.23	0.55
Control Delay	16.5	13.5
Queue Delay	0.0	0.0
Total Delay	16.5	13.5
Queue Length 50th (ft)	46	189
Queue Length 95th (ft)	77	230
Internal Link Dist (ft)	329	331
Turn Bay Length (ft)		
Base Capacity (vph)	1131	2826
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.23	0.55

Intersection Summary

Lane Group	EBT	WBT	SBT	SBR
Lane Group Flow (vph)	526	932	1394	144
v/c Ratio	0.31	0.72	0.73	0.22
Control Delay	14.2	22.1	26.7	8.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.2	22.1	26.7	8.1
Queue Length 50th (ft)	88	210	244	16
Queue Length 95th (ft)	124	285	298	55
Internal Link Dist (ft)	414	299	485	
Turn Bay Length (ft)				110
Base Capacity (vph)	1688	1296	1917	659
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.31	0.72	0.73	0.22

Intersection Summary

Lane Group	SET	NET	SWT
Lane Group Flow (vph)	53	277	177
v/c Ratio	0.04	0.18	0.14
Control Delay	13.9	15.4	15.2
Queue Delay	0.0	0.0	0.0
Total Delay	13.9	15.4	15.2
Queue Length 50th (ft)	8	37	30
Queue Length 95th (ft)	18	59	51
Internal Link Dist (ft)	523	566	302
Turn Bay Length (ft)			
Base Capacity (vph)	1508	1553	1240
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.04	0.18	0.14

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	698	497	200	63	53
v/c Ratio	0.43	0.27	0.41	0.12	0.11
Control Delay	11.5	2.1	27.4	55.4	36.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	2.1	27.4	55.4	36.2
Queue Length 50th (ft)	106	8	86	39	0
Queue Length 95th (ft)	146	22	149	81	55
Internal Link Dist (ft)	177	414	456	566	
Turn Bay Length (ft)					
Base Capacity (vph)	1642	1870	488	517	495
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.43	0.27	0.41	0.12	0.11

Intersection Summary

Lane Group	SET	SWT
Lane Group Flow (vph)	240	613
v/c Ratio	0.20	0.23
Control Delay	11.2	7.9
Queue Delay	0.0	0.0
Total Delay	11.2	7.9
Queue Length 50th (ft)	24	40
Queue Length 95th (ft)	48	58
Internal Link Dist (ft)	329	331
Turn Bay Length (ft)		
Base Capacity (vph)	1205	2643
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.20	0.23

Intersection Summary

Lane Group	EBT	WBT	SBT	SBR
Lane Group Flow (vph)	638	475	481	77
v/c Ratio	0.37	0.35	0.26	0.12
Control Delay	9.4	14.6	20.4	5.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.4	14.6	20.4	5.3
Queue Length 50th (ft)	58	82	68	0
Queue Length 95th (ft)	77	117	94	28
Internal Link Dist (ft)	414	299	485	
Turn Bay Length (ft)				110
Base Capacity (vph)	1741	1345	1859	629
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.37	0.35	0.26	0.12

Intersection Summary

Lane Group	SET	NET	SWT
Lane Group Flow (vph)	131	269	388
v/c Ratio	0.13	0.13	0.23
Control Delay	21.4	6.2	9.7
Queue Delay	0.0	0.0	0.0
Total Delay	21.4	6.2	9.7
Queue Length 50th (ft)	25	16	52
Queue Length 95th (ft)	47	36	76
Internal Link Dist (ft)	523	566	302
Turn Bay Length (ft)			
Base Capacity (vph)	1043	1996	1658
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.13	0.13	0.23

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	607	936	212	153	159
v/c Ratio	0.53	0.57	0.36	0.24	0.24
Control Delay	17.1	17.3	21.4	26.3	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.1	17.3	21.4	26.3	13.1
Queue Length 50th (ft)	115	184	80	58	19
Queue Length 95th (ft)	165	243	139	115	76
Internal Link Dist (ft)	177	414	456	566	
Turn Bay Length (ft)					
Base Capacity (vph)	1152	1635	596	627	653
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.53	0.57	0.36	0.24	0.24

Intersection Summary

Lane Group	SET	SWT
Lane Group Flow (vph)	276	1554
v/c Ratio	0.24	0.55
Control Delay	15.8	13.5
Queue Delay	0.0	0.0
Total Delay	15.8	13.5
Queue Length 50th (ft)	49	190
Queue Length 95th (ft)	82	231
Internal Link Dist (ft)	329	331
Turn Bay Length (ft)		
Base Capacity (vph)	1133	2826
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.24	0.55

Intersection Summary

Lane Group	EBT	WBT	SBT	SBR
Lane Group Flow (vph)	536	976	1395	152
v/c Ratio	0.32	0.75	0.73	0.23
Control Delay	14.3	23.2	26.8	8.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.3	23.2	26.8	8.1
Queue Length 50th (ft)	91	225	245	18
Queue Length 95th (ft)	126	306	298	57
Internal Link Dist (ft)	414	299	485	
Turn Bay Length (ft)				110
Base Capacity (vph)	1688	1297	1917	662
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.32	0.75	0.73	0.23

Intersection Summary

Lane Group	SET	NET	SWT
Lane Group Flow (vph)	321	419	276
v/c Ratio	0.21	0.27	0.24
Control Delay	15.9	15.6	16.3
Queue Delay	0.0	0.0	0.0
Total Delay	15.9	15.6	16.3
Queue Length 50th (ft)	56	72	50
Queue Length 95th (ft)	84	105	77
Internal Link Dist (ft)	523	566	302
Turn Bay Length (ft)			
Base Capacity (vph)	1518	1556	1140
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.21	0.27	0.24

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	874	738	357	129	143
v/c Ratio	0.62	0.41	0.75	0.30	0.26
Control Delay	14.6	2.2	39.6	27.4	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.6	2.2	39.6	27.4	5.7
Queue Length 50th (ft)	156	12	178	57	0
Queue Length 95th (ft)	217	28	#308	105	42
Internal Link Dist (ft)	366	414	456	566	
Turn Bay Length (ft)					
Base Capacity (vph)	1414	1814	476	423	559
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.62	0.41	0.75	0.30	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SET	SWT
Lane Group Flow (vph)	507	989
v/c Ratio	0.41	0.37
Control Delay	13.6	9.4
Queue Delay	0.0	0.0
Total Delay	13.6	9.4
Queue Length 50th (ft)	60	75
Queue Length 95th (ft)	98	101
Internal Link Dist (ft)	329	331
Turn Bay Length (ft)		
Base Capacity (vph)	1242	2646
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.41	0.37

Intersection Summary

Lane Group	EBT	WBT	SBT	SBR
Lane Group Flow (vph)	819	699	816	128
v/c Ratio	0.47	0.56	0.44	0.19
Control Delay	10.6	17.9	22.4	4.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.6	17.9	22.4	4.5
Queue Length 50th (ft)	85	138	126	0
Queue Length 95th (ft)	120	193	161	35
Internal Link Dist (ft)	414	446	485	
Turn Bay Length (ft)				110
Base Capacity (vph)	1740	1242	1859	661
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.47	0.56	0.44	0.19

Intersection Summary

Lane Group	SET	NET	SWT
Lane Group Flow (vph)	444	434	542
v/c Ratio	0.42	0.22	0.36
Control Delay	26.2	8.4	11.0
Queue Delay	0.0	0.0	0.0
Total Delay	26.2	8.4	11.0
Queue Length 50th (ft)	103	51	80
Queue Length 95th (ft)	147	74	113
Internal Link Dist (ft)	359	566	302
Turn Bay Length (ft)			
Base Capacity (vph)	1047	2011	1505
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.42	0.22	0.36

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	915	1225	381	214	226
v/c Ratio	0.93	0.80	0.64	0.38	0.36
Control Delay	37.6	23.4	28.8	23.4	16.1
Queue Delay	0.0	1.3	0.0	0.0	0.0
Total Delay	37.6	24.6	28.8	23.4	16.1
Queue Length 50th (ft)	237	286	171	88	62
Queue Length 95th (ft)	#383	377	271	148	121
Internal Link Dist (ft)	358	414	637	566	
Turn Bay Length (ft)					
Base Capacity (vph)	986	1530	595	565	624
Starvation Cap Reductn	0	135	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.93	0.88	0.64	0.38	0.36

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SET	SWT
Lane Group Flow (vph)	597	1916
v/c Ratio	0.53	0.68
Control Delay	25.6	15.6
Queue Delay	0.0	0.0
Total Delay	25.6	15.6
Queue Length 50th (ft)	138	261
Queue Length 95th (ft)	191	314
Internal Link Dist (ft)	329	331
Turn Bay Length (ft)		
Base Capacity (vph)	1135	2826
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.53	0.68

Intersection Summary

Lane Group	EBT	WBT	SBT	SBR
Lane Group Flow (vph)	772	1297	1733	181
v/c Ratio	0.46	1.12	0.90	0.29
Control Delay	16.3	90.8	34.6	15.7
Queue Delay	0.0	0.5	0.0	0.0
Total Delay	16.3	91.2	34.6	15.7
Queue Length 50th (ft)	145	~451	334	51
Queue Length 95th (ft)	193	#582	#413	100
Internal Link Dist (ft)	414	295	485	
Turn Bay Length (ft)				110
Base Capacity (vph)	1675	1157	1917	627
Starvation Cap Reductn	0	114	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.46	1.24	0.90	0.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SET	NET	SWT
Lane Group Flow (vph)	329	423	277
v/c Ratio	0.22	0.27	0.24
Control Delay	16.0	15.6	16.3
Queue Delay	0.0	0.0	0.0
Total Delay	16.0	15.6	16.3
Queue Length 50th (ft)	57	73	50
Queue Length 95th (ft)	86	106	77
Internal Link Dist (ft)	523	566	302
Turn Bay Length (ft)			
Base Capacity (vph)	1518	1556	1135
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.22	0.27	0.24

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	880	776	357	129	143
v/c Ratio	0.63	0.43	0.75	0.30	0.26
Control Delay	15.0	2.5	39.6	27.4	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	2.5	39.6	27.4	5.7
Queue Length 50th (ft)	160	14	178	57	0
Queue Length 95th (ft)	223	33	#308	105	42
Internal Link Dist (ft)	366	414	456	566	
Turn Bay Length (ft)					
Base Capacity (vph)	1387	1815	476	423	559
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.63	0.43	0.75	0.30	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SET	SWT
Lane Group Flow (vph)	535	992
v/c Ratio	0.43	0.37
Control Delay	14.1	9.4
Queue Delay	0.0	0.0
Total Delay	14.1	9.4
Queue Length 50th (ft)	65	75
Queue Length 95th (ft)	106	102
Internal Link Dist (ft)	329	331
Turn Bay Length (ft)		
Base Capacity (vph)	1243	2646
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.43	0.37

Intersection Summary

	→	←	↓	↙
Lane Group	EBT	WBT	SBT	SBR
Lane Group Flow (vph)	836	715	819	131
v/c Ratio	0.48	0.58	0.44	0.20
Control Delay	10.8	18.2	22.5	4.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.8	18.2	22.5	4.5
Queue Length 50th (ft)	87	143	126	0
Queue Length 95th (ft)	127	200	162	35
Internal Link Dist (ft)	414	446	485	
Turn Bay Length (ft)				110
Base Capacity (vph)	1739	1235	1859	663
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.48	0.58	0.44	0.20

Intersection Summary

Lane Group	SET	NET	SWT
Lane Group Flow (vph)	468	436	547
v/c Ratio	0.45	0.22	0.37
Control Delay	26.6	8.5	11.1
Queue Delay	0.0	0.0	0.0
Total Delay	26.6	8.5	11.1
Queue Length 50th (ft)	110	51	81
Queue Length 95th (ft)	155	75	115
Internal Link Dist (ft)	359	566	302
Turn Bay Length (ft)			
Base Capacity (vph)	1049	2012	1492
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.45	0.22	0.37

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	929	1245	382	214	226
v/c Ratio	0.95	0.81	0.64	0.38	0.36
Control Delay	41.2	24.0	28.9	23.5	16.4
Queue Delay	0.0	1.5	0.0	0.0	0.0
Total Delay	41.2	25.5	28.9	23.5	16.4
Queue Length 50th (ft)	247	294	172	88	63
Queue Length 95th (ft)	#395	388	271	148	122
Internal Link Dist (ft)	358	414	637	566	
Turn Bay Length (ft)					
Base Capacity (vph)	979	1530	595	564	622
Starvation Cap Reductn	0	134	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.95	0.89	0.64	0.38	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	SET	SWT
Lane Group Flow (vph)	609	1925
v/c Ratio	0.54	0.68
Control Delay	25.9	15.6
Queue Delay	0.0	0.0
Total Delay	25.9	15.6
Queue Length 50th (ft)	143	264
Queue Length 95th (ft)	195	316
Internal Link Dist (ft)	329	331
Turn Bay Length (ft)		
Base Capacity (vph)	1134	2826
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.54	0.68

Intersection Summary

Lane Group	EBT	WBT	SBT	SBR
Lane Group Flow (vph)	782	1340	1734	190
v/c Ratio	0.47	1.16	0.90	0.30
Control Delay	16.3	106.5	34.6	16.7
Queue Delay	0.0	0.4	0.0	0.0
Total Delay	16.3	106.9	34.6	16.7
Queue Length 50th (ft)	147	~479	335	57
Queue Length 95th (ft)	196	#611	#414	108
Internal Link Dist (ft)	414	295	485	
Turn Bay Length (ft)				110
Base Capacity (vph)	1675	1155	1917	624
Starvation Cap Reductn	0	107	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.47	1.28	0.90	0.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.