APPENDIX H
TRANSPORTATION IMPACT STUDY AND VMT ASSESSMENT

LINSCOTT LAW & GREENSPAN engineers

TRANSPORTATION IMPACT STUDY

SAN GABRIEL SELF-STORAGE PROJECT

City of San Gabriel, California
May 6, 2020

Prepared for:

1784 Capital Holdings, LLC
8777 N. Gainey Center Drive, Suite 191
Scottsdale, AZ 85258

LLG Ref. 1-19-4340-1

REGISTERED PROFESSIONAL ENGINEER
CLARE M. LOOK-JAEGER
TR1878
EXP. 06/30/21
TRAFFIC
STATE OF CALIFORNIA

Prepared by:
Chin S. Taing, PTP
Transportation Planner III

Under the Supervision of:
Clare M. Look-Jaeger, P.E.
Principal

Linscott, Law & Greenspan, Engineers
600 S. Lake Avenue
Suite 500
Pasadena, CA 91106
626.796.2322 T
626.792.0941 F
www.llgengineers.com

TABLE OF CONTENTS

TABLE OF CONTENTS *(continued)*

TABLE OF CONTENTS *(continued)*

LIST OF FIGURES

TABLE OF CONTENTS *(continued)*

LIST OF TABLES

TABLE OF CONTENTS *(continued)*

APPENDICES

APPENDIX

TRANSPORTATION IMPACT STUDY

SAN GABRIEL SELF-STORAGE PROJECT

City of San Gabriel, California
May 6, 2020

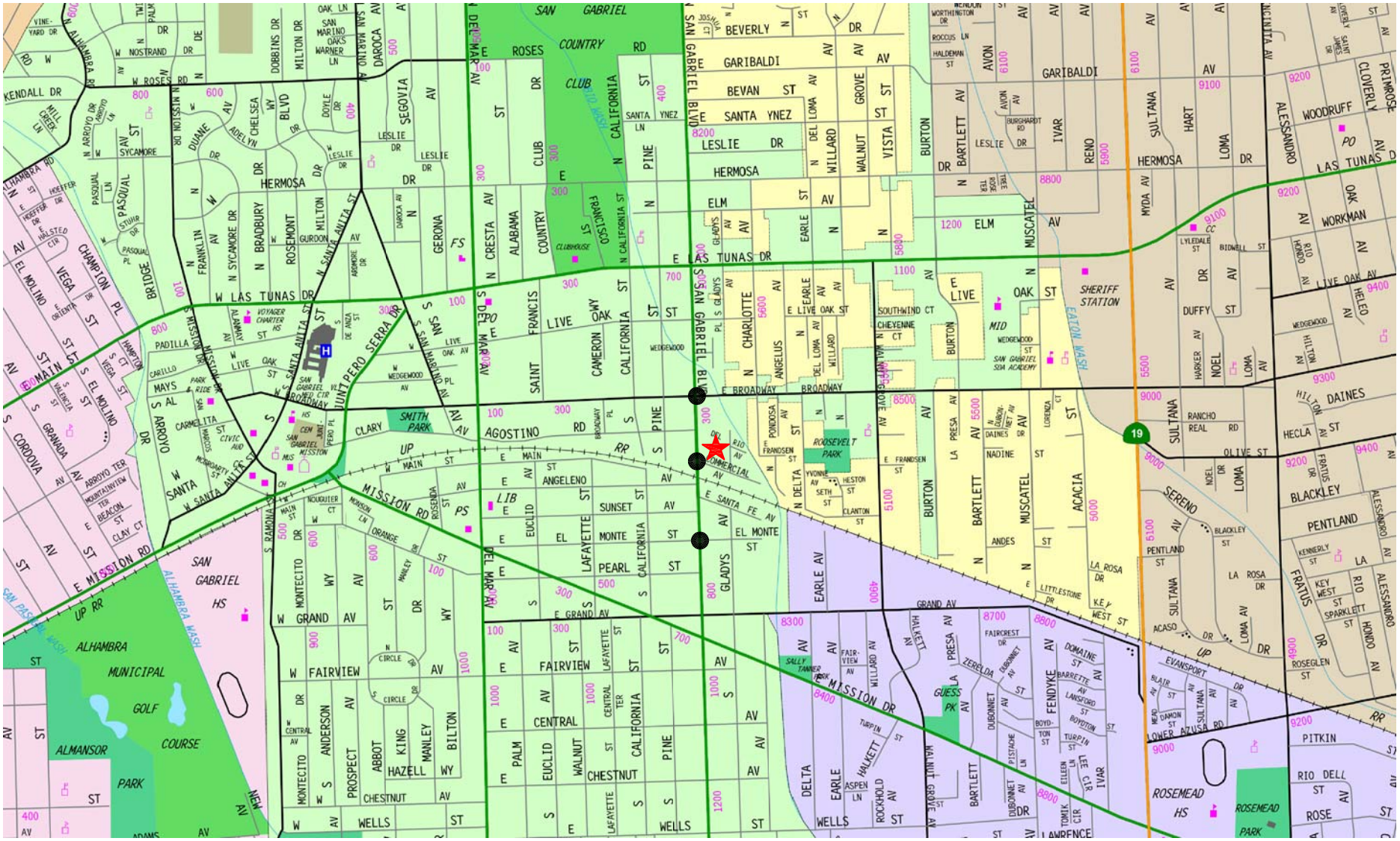
1.0 INTRODUCTION

This transportation analysis has been prepared to identify and evaluate the potential traffic impacts of the proposed self-storage project to be located at 414 and 420 South San Gabriel Boulevard, 815 and 827 Commercial Avenue, and 415 and 423 South Gladys Avenue in the City of San Gabriel, California. The proposed project consists of the development of a five-story neighborhood storage facility consisting of 190,232 gross square feet with a total of 1,524 storage units. A portion of the building will be utilized as artist studios/office and community art gallery space. The project site is bounded by existing commercial uses to the north, Commercial Avenue to the south, Gladys Avenue to the east, and San Gabriel Boulevard to the west. The proposed project site location and general vicinity are shown in ***Figure 1-1***.

The traffic analysis follows City of San Gabriel traffic study guidelines[1] and is consistent with traffic impact assessment guidelines set forth in the Los Angeles County Congestion Management Program[2]. This traffic analysis evaluates potential project-related impacts at three study intersections in the vicinity of the project site. The study locations were determined in consultation with City of San Gabriel Department of Public Works – Engineering Division staff. The Intersection Capacity Utilization method was used to determine Volume-to-Capacity ratios and corresponding Levels of Service for the signalized intersections, and the Highway Capacity Manual methodology was utilized to evaluate the stop-sign controlled study intersection. In addition, a review was conducted of Los Angeles County Metropolitan Transportation Authority intersection and freeway monitoring stations to determine if a Congestion Management Program transportation impact assessment analysis is required for the proposed project.

This study (i) presents existing traffic volumes, (ii) includes existing traffic volumes with the forecast total traffic volumes from the proposed project, (iii) forecasts future cumulative baseline traffic volumes, (iv) forecasts future traffic volumes with the proposed project, (v) determines project-related impacts, and (vi) recommends mitigation measures, where necessary.

[1] *Traffic Study Guidelines for Development Projects in the City of San Gabriel*, September 26, 2006.
[2] *2010 Congestion Management Program for Los Angeles County*, Los Angeles County Metropolitan Transportation Authority, 2010.



MAP SOURCE: RAND MCNALLY & COMPANY

NOT TO SCALE

PROJECT SITE

STUDY INTERSECTION

FIGURE 1-1
VICINITY MAP

LINSCOTT, LAW & GREENSPAN, engineers

SAN GABRIEL SELF-STORAGE PROJECT

o:\job_file\4340\dwg\f1-1.dwg LDP 10:48:54 07/23/2019 rodriquez

1.1 Study Area

Upon coordination with City of San Gabriel Department of Public Works - Engineering Division staff, a total of three (3) study intersections have been identified for evaluation. These study locations, shown below, provide local access to the study area and define the extent of the boundaries for this traffic impact investigation. Further discussion of the existing street system and study area is provided in Section 5.0 herein.

- San Gabriel Boulevard/Broadway
- San Gabriel Boulevard/Commercial Avenue
- San Gabriel Boulevard/El Monte Street

The general location of the project in relation to the study locations and surrounding street system is presented in *Figure 1-1*. The traffic analysis study area is generally comprised of those locations which have the greatest potential to experience significant traffic impacts due to the proposed project as defined by the Lead Agency. In the traffic engineering practice, the study area generally includes those intersections that are:

a. Immediately adjacent or in close proximity to the project site;

b. In the vicinity of the project site that are documented to have current or projected future adverse operational issues; and

c. In the vicinity of the project site that are forecast to experience a relatively greater percentage of project-related vehicular turning movements (e.g., at freeway ramp intersections).

The locations selected for analysis were based on the above criteria, proposed project peak hour vehicle trip generation, the anticipated distribution of project vehicular trips, and the existing intersection/corridor operations.

1.2 Overview of Senate Bill 743

On September 27, 2013, Governor Brown signed Senate Bill (SB) 743 (Steinberg, 2013). Among other things, SB 743 creates a process to change the methodology to analyze transportation impacts under CEQA (Public Resources Code section 21000 and following), which could include analysis based on project vehicle miles traveled (VMT) rather than impacts to intersection Level of Service. On December 30, 2013, the State of California Governor's Office of Planning and Research (OPR) released a preliminary evaluation of alternative methods of transportation analysis. The intent of the original guidance documentation was geared first towards projects located within areas that are designated as transit priority areas, to be followed by other areas of the State. OPR issued other draft discussion documents in March 2015 and January 2016, suggesting some new revisions to the State CEQA Guidelines. In November 2017, OPR submitted the proposed amendments to the CEQA Guidelines to the State's Natural

Resources Agency (that include a proposed new Guidelines section 15064.3 which governs how VMT-based analyses of potential traffic impacts should be conducted). On January 26, 2018, the Natural Resources Agency published a Notice of Rulemaking, commencing the formal rulemaking process for the amendments to the CEQA Guidelines. While OPR has now issued final revisions to the state CEQA Guidelines in order to implement the CEQA traffic analysis component of SB 743, cities, like San Gabriel, have until July 1, 2020, to update their transportation analysis guidelines. Therefore, the analysis in this study utilizes existing, long-established protocols in accordance with CEQA and the City's current significance thresholds.

2.0 PROJECT DESCRIPTION

2.1 Site Location

The proposed project site is located at 414 and 420 South San Gabriel Boulevard, 815 and 827 Commercial Avenue, and 415 and 423 South Gladys Avenue in the City of San Gabriel, California. The project site is generally bounded by existing commercial uses to the north, Commercial Avenue to the south, Gladys Avenue to the east, and San Gabriel Boulevard to the west. The proposed project site location and general vicinity are shown in *Figure 1-1*.

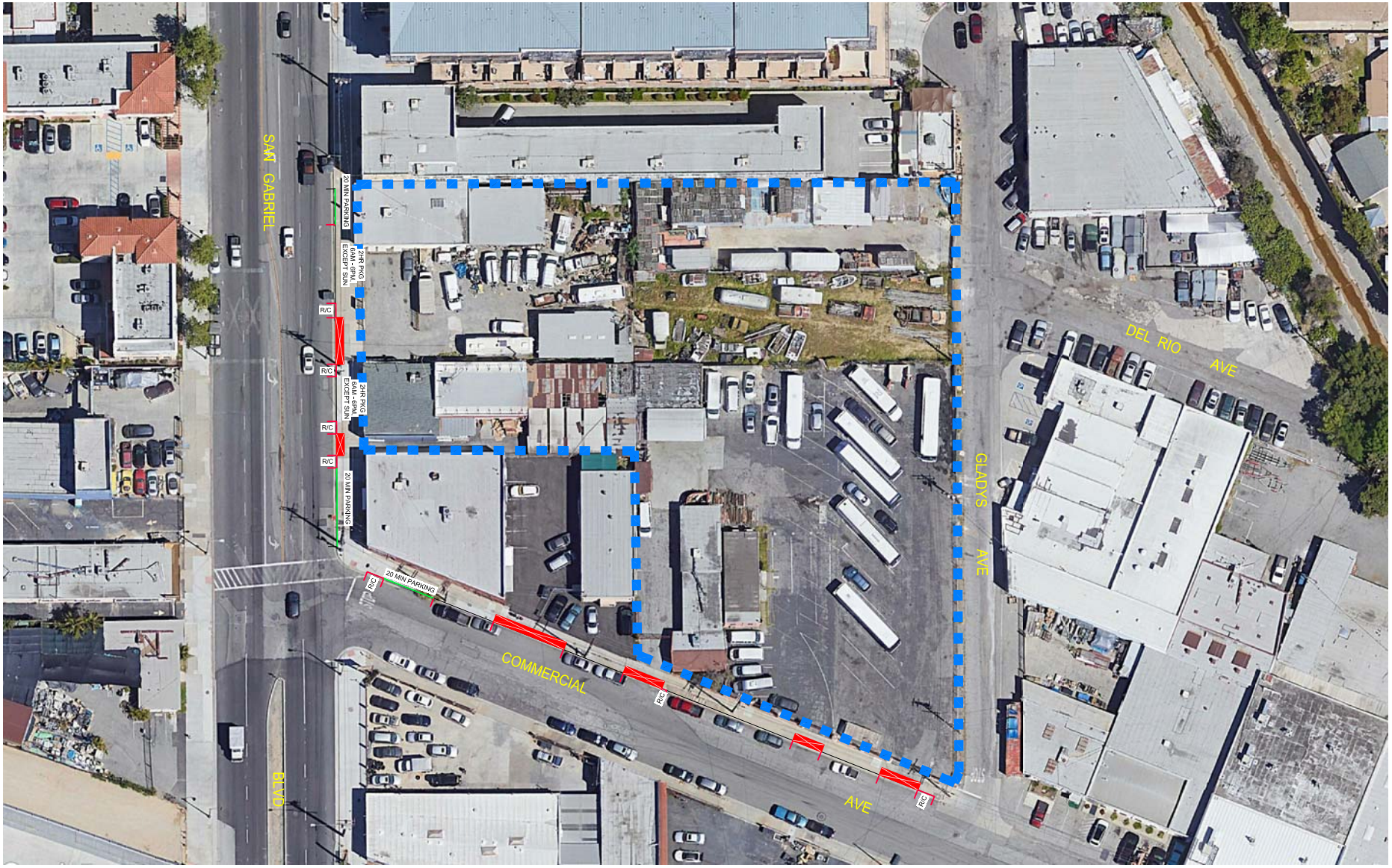
2.2 Existing Project Site

The existing site is an irregularly shaped property comprised of nine contiguous parcels totaling approximately 1.74 acres and is currently occupied by six buildings and associated surface parking. The site includes a former plumbing business which closed in the year 2017, a blinds/curtains manufacturing and warehousing building totaling 3,100 square feet, a tour bus business with office buildings totaling 3,099 square feet, and equipment storage for a printing company. All of the existing buildings will be demolished as part of the proposed project. Vehicular access to the project site is currently provided via a total of two existing curb cuts on San Gabriel Boulevard and three existing curb cuts on Commercial Avenue along the property frontages. An aerial photograph of the existing project site and adjacent streets is presented in ***Figure 2-1***.

2.3 Proposed Project Description

The project applicant seeks to obtain entitlements that would allow for the construction of a new 190,232 square-foot climate-controlled, self-storage facility with an on-site rental office on the ground floor. The building will include one level of subterranean self-storage space and roughly four levels above ground space to accommodate a total of 1,524 storage units. Artist studios/office space and a community art gallery totaling 9,126 square feet are planned on the first two levels at the western portion of the building fronting San Gabriel Boulevard. The proposed hours of operation for the self-storage facility will be 5:00 AM to 10:00 PM, seven days a week. The artists tenants are expected to have access to the studios/office space 24 hours a day, seven days a week. The site plan for the proposed San Gabriel Self-Storage project is illustrated in ***Figure 2-2***. Construction and occupancy of the proposed project is planned to be completed by the year 2021.

A total of 50 at-grade parking spaces is planned to be provided as part of the proposed project. As part of the parking supply, the project will provide two handicap accessible spaces. This complies with the Americans with Disabilities Act requirement of a minimum of one (1) space of the total on-site parking supply as accessible spaces (i.e., for parking facilities with 26 to 50 spaces one in every six handicap spaces must be van accessible).



NOT TO SCALE

MAP SOURCE: GOOGLE EARTH

PROJECT SITE

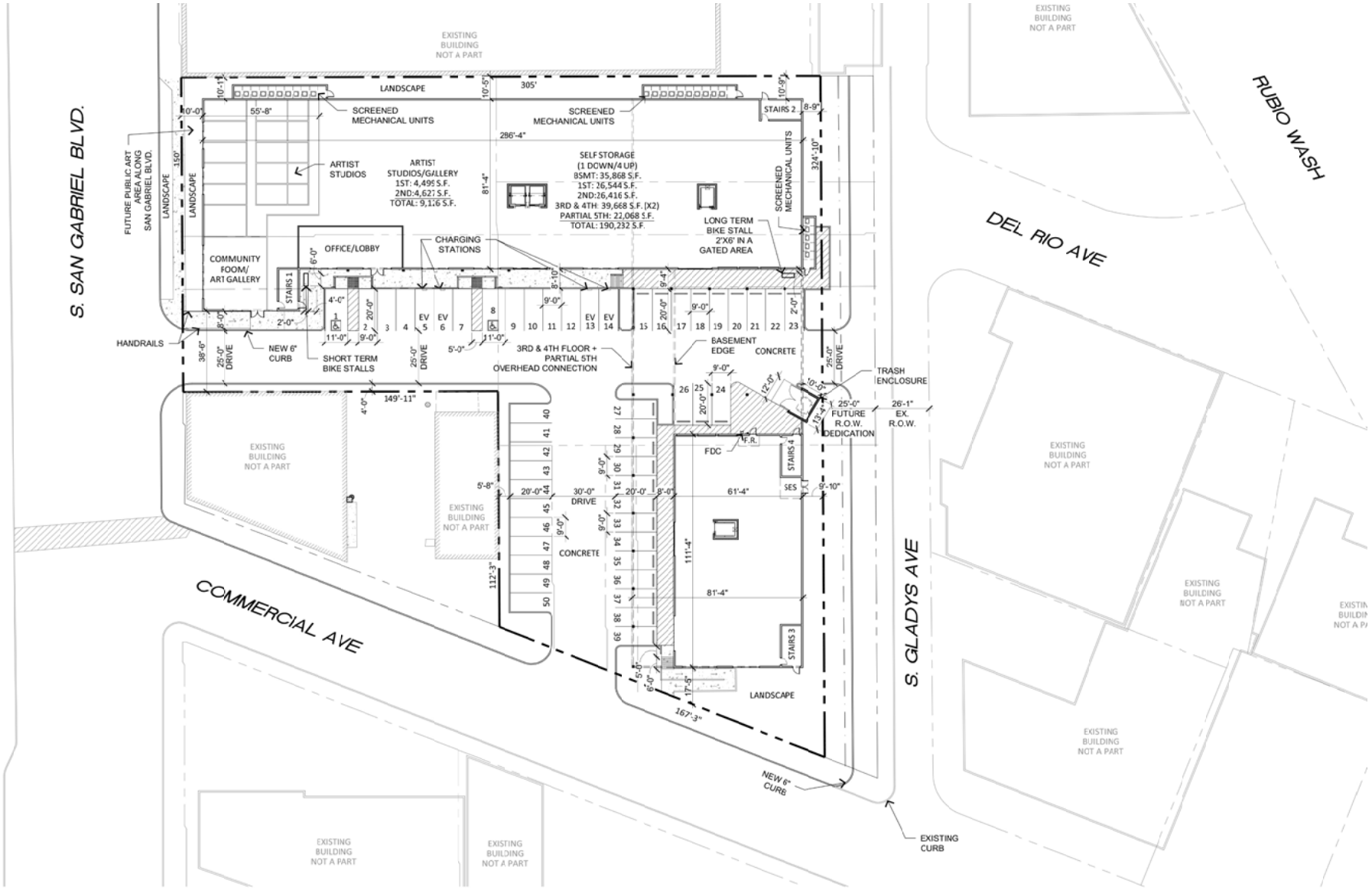
EXISTING DRIVEWAY

FIGURE 2-1
AERIAL PHOTOGRAPH OF EXISTING PROJECT SITE

LINSCOTT, LAW & GREENSPAN, engineers

SAN GABRIEL SELF-STORAGE PROJECT

o:\job_file\4340\dwg\f2-1.dwg 06/17/2019 09:48:06 rodriquez



N

NOT TO SCALE

SOURCE: EAPC

FIGURE 2-2
SITE PLAN

LINSCOTT, LAW & GREENSPAN, engineers

SAN GABRIEL SELF-STORAGE PROJECT

o:\job_file\4340\dwg\f2-2.dwg LDP 16:18:44 12/18/2019 rodriquez

Vehicular access to the site will be provided by consolidating the existing curb cuts into three driveways: one limited access driveway on San Gabriel Boulevard, one full access driveway on Commercial Avenue, and one full access driveway on Gladys Avenue. Further discussion of the proposed project site access and circulation scheme is provided in Section 3.0.

3.0 SITE ACCESS AND CIRCULATION

The proposed site access scheme for the San Gabriel Self-Storage project is displayed in *Figure 2-2*. A description of the existing and proposed site access and circulation scheme is provided in the following subsections.

3.1 Existing Site Access

Vehicular access to the existing site is currently provided via existing curb cuts on the north side of Commercial Avenue as well as the east side of San Gabriel Boulevard along the property frontages. These driveways provide access to the existing surface parking lot and the existing site development. An aerial photograph of the existing project site and adjacent streets is presented in *Figure 2-1*.

3.2 Proposed Project Site Access

The proposed site access scheme for the proposed project is displayed in *Figure 2-2*. Vehicular access to the project site will be accommodated via three driveways: one on San Gabriel Boulevard, one on Commercial Avenue, and one on Gladys Avenue. Based on coordination with the City of San Gabriel Department of Public Works – Engineering Division, a 25-foot roadway dedication along the west side of Gladys Avenue along the property frontage is required. Descriptions of the planned project site access points are provided in the following paragraphs.

- *San Gabriel Boulevard Driveway:*

  This project access point is located along the east side of San Gabriel Boulevard, along the westerly property frontage. Due to the presence of the existing southbound left-turn lane associated with the San Gabriel Boulevard/Commercial Street intersection, which extends along the project frontage, the San Gabriel Boulevard project driveway will be limited to right-turn ingress and right-turn egress turning movements. The San Gabriel Boulevard driveway is proposed to be 25 feet in width and will be constructed to City of San Gabriel design standards.

- *Commercial Avenue Driveway:*

  The Commercial Avenue driveway is located along the north side of Commercial Avenue along the project's southerly frontage. The Commercial Avenue project driveway is planned to accommodate full access (i.e., left-turn and right-turn ingress and egress movements). The Commercial Avenue driveway is proposed to be 30 feet in width and will be constructed to City of San Gabriel design standards.

- *Gladys Avenue Driveway:*

  The Gladys Avenue driveway is located along the west side of Gladys Avenue approximately mid-way along the project's easterly frontage. The Gladys Avenue project driveway is planned to accommodate full access (i.e., left-turn and right-turn ingress and egress movements). The Gladys Avenue driveway is also proposed to be 25 feet in width and will be constructed to City of San Gabriel design standards.

3.3 Pedestrian Access

The project has been designed to encourage pedestrian activity and walking as a transportation mode[3]. Walkability is a term for the extent to which walking is readily available as a safe, connected, accessible and pleasant mode of transport. There are several criteria that are widely accepted as key aspects of the walkability of urban areas that should be satisfied. The underlying principle is that pedestrians should not be delayed, diverted, or placed in danger. The widely accepted characteristics of walkability are as follows:

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

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

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

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

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

A review of the proposed project pedestrian walkway network indicates that these five primary characteristics are accommodated as part of the proposed project. The interior of the project is planned to provide a combination of landscape and hardscape that facilitates internal accessibility as well as external connectivity to a broad range of uses beyond its boundaries. The project is situated adjacent to and accessible from nearby commercial uses (e.g., retail, cafes,

[3] For example, refer to http://www.walkscore.com/, which generates a walkability score of approximately 75 (Very Walkable) out of 100 for the project site. Walk Score calculates the walkability of an address by locating nearby stores, restaurants, schools, parks, etc. Walk Score measures how easy it is to live a car-lite lifestyle—not how pretty the area is for walking.

restaurants, etc.) and other amenities along San Gabriel Boulevard, as well as nearby public bus transit stops and adjacent sidewalks on San Gabriel Boulevard. Additionally, as shown in *Figure 2-2*, as part of the project, a 25-foot roadway dedication is planned that would allow for sidewalk installation along the west side of Gladys Avenue along the property frontage.

3.4 Bicycle Access

Bicycle access to the project site is facilitated by the City's bicycle roadway network. Walk Score calculates a bike score based on the topography, number and proximity of bike lanes, etc., and generates a bike score for the project site of approximately 58 (Bikeable) out of 100.[4] Existing and proposed bicycle facilities (e.g., Class I Bicycle Path, Class II Bicycle Lanes, Class III Bicycle Routes, Enhanced Class III Bicycle Boulevard, etc.) are identified in the San Gabriel Valley Regional Bicycle Master Plan[5] which was established to guide the development and maintenance of the bicycle network within the City of San Gabriel and other cities within the San Gabriel Valley. The location of the existing and proposed bicycle facilities in close proximity to the project site and in the surrounding area is illustrated in ***Figure 3-1***. As shown in Figure 3, San Gabriel Boulevard is also identified as a proposed Class III bikeway facility.

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

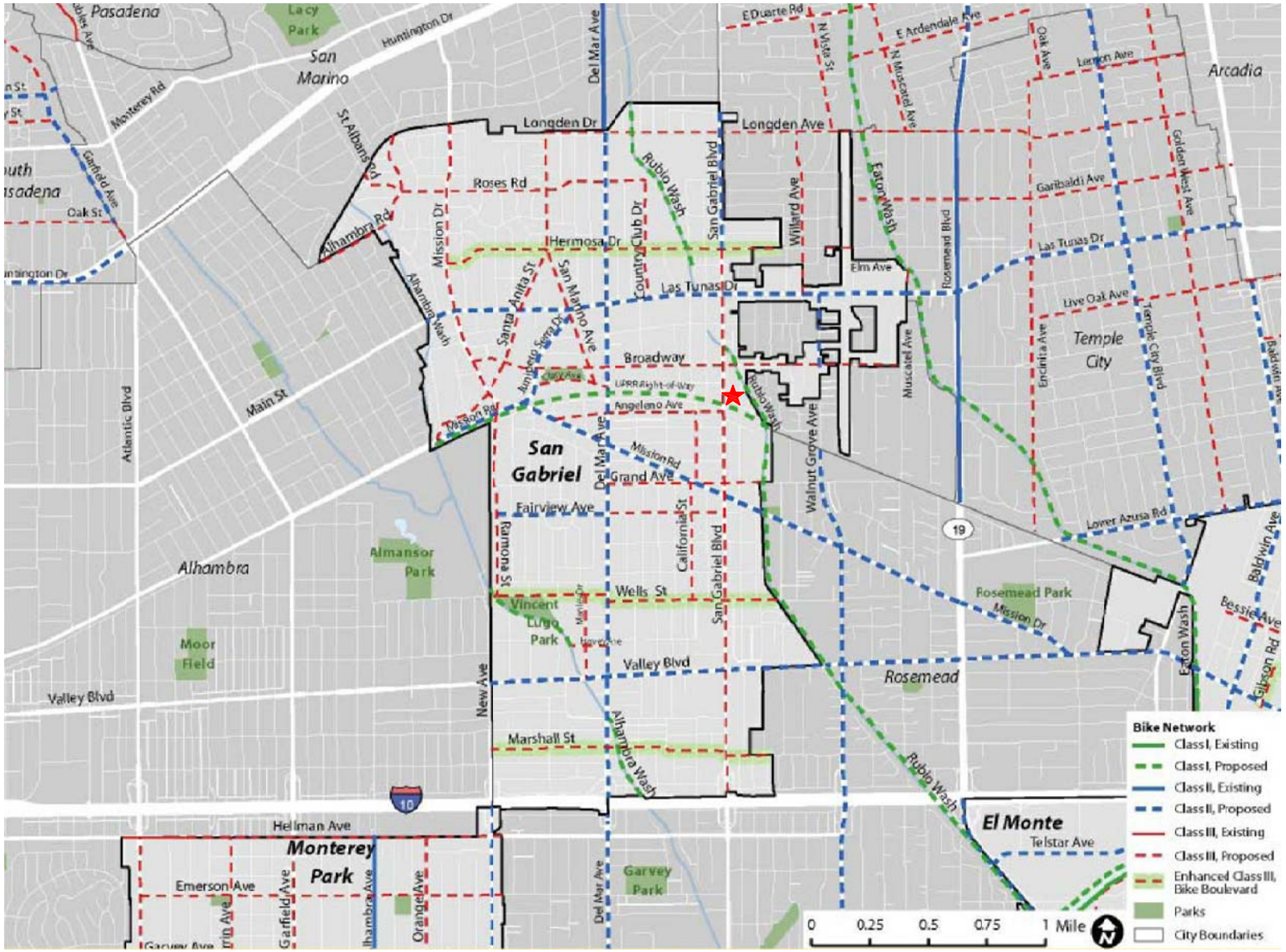
Use of bicycles as a transportation mode to and from the project site should be encouraged by the provision of ample and safe bicycle parking. One long-term and two short-term bicycle spaces will be provided in a readily accessible location on-site adjacent to the building. Appropriate lighting will be provided to increase safety and provide theft deterrent during night-time parking.

3.5 Sight Distance Review

A review has been conducted so as to evaluate the adequacy of sight distance at the project driveway intersections with San Gabriel Boulevard and Commercial Avenue which are being planned to serve as primary access to and from the project site. The critical sight distance was determined to be between exiting motorists and motorists traveling on San Gabriel Boulevard and Commercial Avenue. Specifically, sight distance analyses have been prepared at the subject locations in order to determine the adequacy of motorists' lines of sight and focuses on the

[4] Refer to http://www.walkscore.com/, which generates the bike score for the project site. Walk Score calculates the bike score of an address by locating nearby bicycling facilities as well as connections to bus/rail transit routes and stops. Walk Score measures how easy it is to live a car-lite lifestyle—not how pretty the area is for bicycling.

[5] Source: San Gabriel Valley Regional Bicycle Master Plan, prepared by Alta Planning + Design for Cities of Baldwin Park, El Monte, Monterey Park, San Gabriel, and South El Monte, dated November 2014.



N
NOT TO SCALE

MAP SOURCE: SAN GABRIEL VALLEY REGIONAL BICYCLE MASTER PLAN, NOVEMBER 2014

★ PROJECT SITE

FIGURE 3-1
EXISTING AND PROPOSED BIKEWAY FACILITIES

LINSCOTT, LAW & GREENSPAN, engineers

SAN GABRIEL SELF-STORAGE PROJECT

o:\job_file\4340\dwg\base4340.dwg LDP 11:16:26 05/08/2019 rodriquez

northbound approaching vehicles on San Gabriel Boulevard and the eastbound and westbound approaching vehicles on Commercial Avenue as well as the exiting left-turn and/or right-turn vehicles at the project site driveways (i.e., intersection sight distance). The sight distance analysis is based on the criteria set forth in the American Association of State Highway and Transportation Officials' (AASHTO) *A Policy on Geometric Design of Highways and Streets*.[6] Stopping sight distance is the distance that a driver of a vehicle, traveling at a certain speed, is able to bring the vehicle to a stop after an object on the road becomes visible. Sight distance is also provided for intersections (including private streets and driveways) to allow the drivers of stopped vehicles a sufficient view of the intersecting roadway to decide when to enter the intersecting roadway or to cross it. If available sight distance for an entering or crossing vehicle is at least equal to the appropriate stopping sight distance for the major roadway, then drivers have sufficient sight distance to anticipate and avoid collisions.

3.5.1 *Intersection Sight Distance at Project Driveways*

According to Table 9-7 *(Design Intersection Sight Distance-Case B1-Left Turn from Stop)* of the *AASHTO* document, a design speed of 30 miles per hour would require a minimum stopping sight distance of 200 feet and an intersection sight distance of 335 feet for passenger cars. Also, according to Table 9-9 *(Design Intersection Sight Distance-Case B2, Right Turn from Stop)* of the *AASHTO* document, a design speed of 40 miles per hour would require a minimum stopping sight distance of 305 feet and an intersection sight distance of 385 feet for passenger cars. It is noted that the sight distance values summarized in Table 9-7 of the *AASHTO* document are for a stopped vehicle to turn left onto a two-lane highway without a median such as Commercial Avenue. Table 9-9 is applicable for the San Gabriel Boulevard driveway since this driveway will be limited to right-turn ingress and right-turn egress movements only. No adjustments were necessary to be made for Commercial Avenue or San Gabriel Boulevard. As such, the minimum intersection sight distances of 335 feet and 385 feet for passenger cars were utilized for the sight distance analyses for the Commercial Avenue and San Gabriel Boulevard driveways, respectively.

Figure 3-2 provides a conceptual plan of the project site driveways with the adjacent street system and displays the minimum required intersection sight distances. According to AASHTO guidelines, *Figure 3-2* shows that when an exiting motorist's vehicle (i.e., front bumper) is set back such that 15 feet exists between the edge of the travel way to the motorists' eye at the project driveway, a line of sight to meet the stated minimum currently exists for the critical cases, which is Case B1 – Left Turn from Stop or Case B2 – Right Turn from Stop. The line of sight should be clear of any tall landscaping, signage, or objects (i.e., be less than 36 inches in height) so as to maintain a clear line of sight between exiting motorists and oncoming motorists. As shown in *Figure 3-2*, an adequate line is sight is provided for northbound motorists approaching the San Gabriel Boulevard project driveway.

---

[6] *A Policy on Geometric Design of Highways and Streets*, Chapter 9, American Association of State Highway and Transportation Officials (AASHTO), 7th Edition, 2018.

N

SCALE 1" = 60'

FIGURE 3-2
INTERSECTION SIGHT DISTANCE AT PROJECT DRIVEWAYS
HORIZONTAL PERSPECTIVE
SAN GABRIEL SELF-STORAGE PROJECT

LINSCOTT, LAW & GREENSPAN, engineers

o:\job_file\4340\dwg\f3-2.dwg 05/06/2020 11:54:52 rodriguez

Based on the design speed of 30 mph along Commercial Avenue, the sight distance analyses contained herein, and strict application of the AASHTO guidelines, it can be concluded that the existing intersection sight distance currently meets the minimum requirements for exiting project driveway motorists and oncoming westbound (approaching) vehicles on Commercial Avenue. While the intersection sight distance of less than 335 feet is provided for the oncoming eastbound (approaching) vehicles on Commercial Avenue, these vehicles will be controlled by the new traffic signal installation at the intersection of San Gabriel Boulevard/Commercial Avenue and thus will not be traveling at posted speeds just east of San Gabriel Boulevard.

In order to maintain the clear lines of sight at the project driveways, it is therefore recommended that red curb markings and signage be installed so as to remove on-street parking for the following segments: 1) along the north side of Commercial Avenue between the adjacent property's driveway and the project driveway, and 2) along the east side of San Gabriel Boulevard between Commercial Avenue and the northern project site boundary. The number of entering (i.e., inbound) vehicles forecast with development of the project site is discussed in detail in Section 8.1 of this report. With the removal of on-street parking along these portions, adequate intersection sight distances would exist between exiting motorists at the project driveways and oncoming (approaching) vehicles on San Gabriel Boulevard and Commercial Avenue.

4.0 PROJECT PARKING

4.1 City Code Parking Requirements

A calculation of the Code parking requirement was prepared in accordance with the City of San Gabriel Municipal Code off-street parking requirements (Section 153.220, Number of Parking Spaces Required). In accordance with the Municipal Code parking regulations, the following parking requirements applicable to the proposed project are as follows:

- Self-Storage Warehousing — 1.0 space for every 2,500 square feet of gross floor area, plus additional spaces as required for any associates residential use.
- Business/Professional Office (>5,001 SF) — 1.0 space for every 300 square feet of gross floor area.

Source: City of San Gabriel Municipal Code (Section 153.220)

Through strict application of the Municipal Code parking regulations, the following parking requirement would be calculated for the proposed project:

- Self-Storage Warehouse: 190,232 SF x 1.0 space/2,500 SF = rounded to 76 spaces
- Artist Studios/Gallery: 9,126 SF x 1.0 space/300 SF = rounded to 31 spaces

  Total Code Required Project Parking = 107 spaces

Based on the above calculation, the City Code parking requirement for the project would consist of a total of 107 spaces, with 76 spaces required for the self-storage project component and 31 spaces for the artist studios/office and art gallery component. Based on reviews of other parking standards established by other agencies in surrounding communities and parking demand characteristics at other existing self-storage facilities similar to the proposed project, it can be expected that parking demand would be much lower for the project than what is currently required by strict application of the City Code. The following sections provide a summary of these reviews. Parking for the artist studios/office and art gallery space will be provided based on the Code parking ratio for business/professional offices greater than 5,000 square feet (i.e., at 1.0 space for every 300 square feet).

4.2 Proposed Project Parking Supply

A total of 50 at-grade parking spaces is planned to be provided within the project site. As mentioned previously, the City of San Gabriel Code parking requirement applied strictly to the proposed project description results in a requirement of 107 spaces. Thus, the project parking supply of 50 spaces would be 57 spaces less than the Code parking requirement. However, the appropriate parking supply is determined based on a parking demand study of other self-storage facilities, which is presented in Section 4.4 below.

As part of the parking supply, the project must also provide a minimum of one (1) handicap accessible space in the parking area. This complies with the Americans with Disabilities Act requirement of a minimum of one (1) space of the total on-site parking supply as accessible spaces (i.e., for parking facilities with 26 to 50 spaces one in every six handicap spaces must be van accessible).

4.3 Other Agency Parking Requirements

Research was also conducted regarding the parking requirements for self-storage warehousing land use in other jurisdictions and is summarized below for informational purposes only.

- City of Alhambra
  The City of Alhambra Municipal Code (Section 35.52.040, Number of Parking Spaces Required), specifies the parking requirements for self-storage facilities as one (1) space for each employee, plus one (1) space for each 20,000 square feet of gross floor area and one (1) space for each vehicle or boat storage space, as well as two (2) enclosed spaces for a manager or caretaker's dwelling unit. Application of this parking requirement to the proposed project would result in a theoretical off-street parking requirement of 11 parking spaces (i.e., [190,232 square feet x 1 space / 20,000 square feet = 10 spaces] + [1 employee x 1 space per employee = 1 space] = 11 total spaces). The project's proposed parking supply of 19 parking spaces (for the self-storage component) would adequately accommodate the theoretical parking requirement specified by the City of Alhambra Municipal Code.

- City of Long Beach
  The City of Long Beach Municipal Code (Section 21.41.216, Table 41-1C, Required Parking Spaces for Commercial, Industrial/Manufacturing, and All Other Uses), specifies the parking requirements for mini-warehouse (self-storage) land uses as three (3) spaces plus one (1) space per 100 storage units. Application of this parking requirement to the proposed project would result in a theoretical off-street parking requirement of 18 parking spaces (i.e., [1,524 units x 1 space / 100 storage units = 15 spaces] + [3 spaces] = 18 total spaces). The project's proposed parking supply of 19 parking spaces (for the self-storage component) would also adequately accommodate the theoretical parking requirement specified by the City of Long Beach Municipal Code.

Generally, it is found that other jurisdictions would theoretically require significantly fewer parking spaces than the City of San Gabriel Municipal Code parking ratio for self-storage warehousing land uses. Thus, application of the self-storage warehouse land use parking ratio to the proposed project is not recommended based on LLG's experience as it would significantly overstate actual parking demand.

As stated above, these parking standards are provided for informational purposes only as it is recognized that parking demand is also influenced by a site's proximity to other influences including other comparable sites, employment, adjacent and convenient public transportation

services, nearby bicycle route networks, etc. However, it can be concluded that other local agencies have already employed parking ratios significantly lower than 1.0 space per 2,500 square feet for self-storage facilities of this nature.

4.4 Empirical Parking Demand Studies of Existing Self-Storage Facilities

This section summarizes other site-specific self-storage parking surveys that have been previously conducted by LLG. Empirical parking demand studies of existing self-storage sites that are similar in nature to the proposed project have been conducted and are included for purposes of this parking analysis. The purpose for these studies was to determine existing parking demand ratios for other self-storage sites that are similar in nature to the proposed project and to compare the forecast parking demand using the derived empirical parking ratios to that calculated simply through strict application of the City of San Gabriel Municipal Code.

In order to determine the expected actual peak parking demand for the proposed project, a site-specific parking demand analysis was conducted for two existing self-storage facilities located within the City of Burbank. The sites selected for the analysis are as follows:

- Extra Space Storage, 2801 Thornton Avenue, Burbank, California 91504
- Extra Space Storage, 175 West Verdugo Avenue, Burbank, California 91502

Parking accumulation surveys were conducted at each site by a traffic count subconsultant (The Traffic Solution) in hourly time increments on a typical mid-week day (i.e., Tuesday) from 9:30 AM to 5:30 PM, and on a typical weekend day (i.e., Saturday) from 9:00 AM to 5:00 PM in March 2019. Brief summaries of the parking accumulation surveys are presented below:

- Extra Space Storage, 2801 Thornton Avenue
  - On Saturday, March 16, 2019 the peak parking demand occurred at 10:00 AM and 11:00 AM when three (3) vehicles were parked at the site.
  - On Tuesday, March 19, 2019, the peak parking demand occurred at 10:30 AM and 5:30 PM when three (3) vehicles were parked at the site.

- Extra Space Storage, 175 West Verdugo Avenue
  - On Saturday, March 16, 2019, the peak parking demand occurred at 1:00 PM when six (6) vehicles were parked at the site.
  - On Tuesday, March 19, 2019, the peak parking demand occurred at 2:30 PM, 4:30 PM, and 5:30 PM when three (3) vehicles were parked at the site.

By comparing the peak parking demand at each site to the number of occupied storage units, the existing peak parking demand ratio can be calculated for each of the existing self-storage facilities. The calculated peak parking demand ratios for each survey location are contained in

Appendix A. The aggregate peak parking demand ratio, which blends the peak parking demand and number of occupied units for both sites in order to reduce the variation due to individual characteristics at each site, is also presented in *Appendix A*. It is concluded that the peak parking demand ratio, based on the aggregate of both existing Extra Space Storage sites, is 0.007 vehicles per occupied storage unit.

For comparison purposes, a review of the parking demand rates published in the Institute of Transportation Engineers' (ITE) *Parking Generation Manual*[7], 5th Edition, was conducted. The *Parking Generation Manual* presents the state-of-the-practice understanding of the relationship between parking demand and various characteristics associated with individual land use developments, based on parking studies conducted at locations throughout North America. The average parking rate for Land Use Code 151 (Mini-Warehouse) on a typical weekday is 1.36 parked vehicles per 100 storage units, while the average parking rate on a typical Saturday is 0.94 parked vehicles per 100 storage units. Application of the Land Use Code 151 average parking demand rates to the proposed project results in a forecast weekday peak parking demand of 21 vehicles (i.e., 1.36 parked vehicles x 1,524 units/100 units = 20.7 parked vehicles or 21 spaces). In comparison, the empirically derived peak parking demand (i.e., 11 spaces) represents approximately one half of the parking demand forecast using the ITE parking rates.

4.5 Forecast Project Peak Parking Demand

As described above, based on the empirical surveys conducted at the comparable sites, the highest aggregate peak parking demand ratio was determined to be 0.007 spaces per occupied storage unit. Application of this peak parking demand ratio is appropriate as it results in the most conservative analysis based on the empirical site-specific survey data. Application of this peak parking demand ratio to the proposed 1,524-unit self-storage project yields a forecast peak parking demand of 11 parking spaces (i.e., 0.007 spaces/occupied storage unit x 1,524 storage units = rounded to 11 spaces).

As previously noted, the project is planned to provide 50 total parking spaces (i.e., 31 spaces for the artists studios/art gallery space and 19 spaces for the self-storage). Therefore, it is concluded that the proposed parking supply for the self-storage component is sufficient to accommodate the empirically derived peak parking demand of 11 vehicles. During other time periods of the day and other days of the week, a greater parking surplus could be expected for the proposed project.

[7] Institute of Transportation Engineers *Parking Generation Manual*, 5th Edition, Washington D.C., 2019.

5.0 EXISTING STREET SYSTEM

5.1 Regional Highway System

Regional access to the project site is provided by Interstate 10 (San Bernardino) Freeway, which is located less than two miles south of the project site. The major east-west oriented I-10 Freeway is referred to as the Santa Monica Freeway between Santa Monica (to the west) and the I-5 Freeway in East Los Angeles and the I-10 Freeway is referred to as the San Bernardino Freeway east of the I-5 Freeway in Los Angeles, including within the project vicinity. In the project vicinity, four mainline travel lanes and one High Occupancy Vehicle (HOV) travel lane are provided in each direction. Full freeway interchanges (i.e., eastbound and westbound on- and off-ramps) are provided at San Gabriel Boulevard and Del Mar Avenue in the project vicinity.

5.2 Local Street System

Immediate access to the project site is provided via San Gabriel Boulevard and Commercial Avenue. The following three (3) study intersections were selected for analysis based on consultation with City staff in order to determine potential traffic impacts related to the proposed project:

1. San Gabriel Boulevard/Broadway (signalized)
2. San Gabriel Boulevard/Commercial Avenue (stop-controlled)
3. San Gabriel Boulevard/El Monte Street (signalized)

The San Gabriel Boulevard/Commercial Avenue intersection is currently stop-sign controlled with the stop sign facing the minor street approach (i.e., Commercial Avenue). Based on coordination with City staff, a traffic signal installation at this intersection was approved in June 2019 and is planned to be fully operational prior to the project build-out and occupancy year in 2021. As such, the future pre-project and future with project conditions include analysis of this location as a signalized intersection. The existing lane configurations at the study intersections are displayed in ***Figure 5-1***.

5.3 Roadway Classifications

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

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

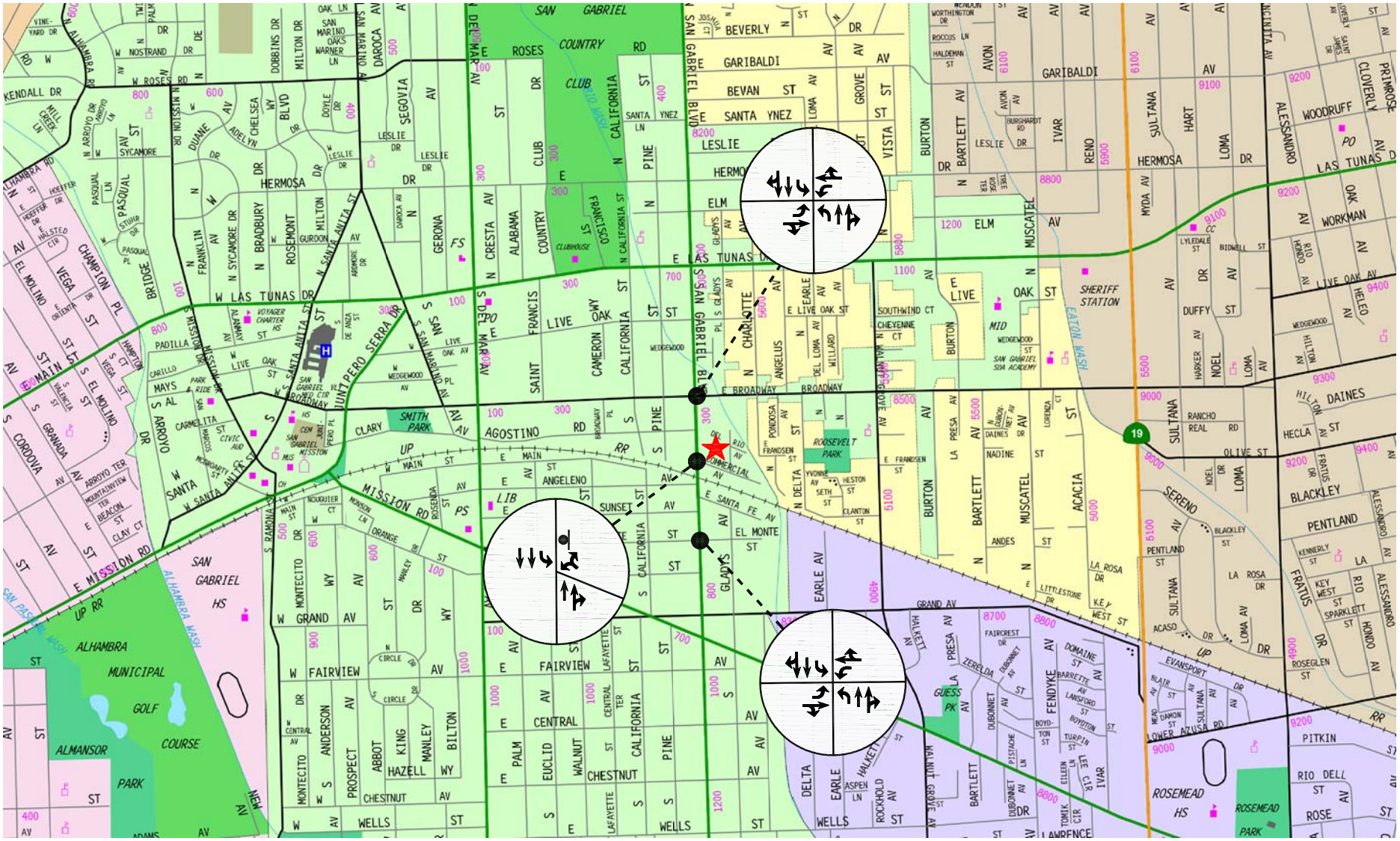


FIGURE 5-1
EXISTING LANE CONFIGURATIONS

LINSCOTT, LAW & GREENSPAN, engineers

SAN GABRIEL SELF-STORAGE PROJECT

o:\job_file\4340\dwg\f5-1.dwg LDP 17:40:03 08/01/2019 rodriquez

- *Arterial* roadways are major streets that primarily serve through-traffic and provide access to abutting properties as a secondary function. Arterials are generally designed with two to six travel lanes and their major intersections are signalized. This roadway type is divided into two categories: principal and minor arterials. Principal arterials are typically four-or-more lane roadways and serve both local and regional through-traffic. Minor arterials are typically two-to-four lane streets that service local and commute traffic.

- *Collector* roadways are streets that provide access and traffic circulation within residential and non-residential (e.g., commercial and industrial) areas. Collector roadways connect local streets to arterials and are typically designed with two through travel lanes (i.e., one through travel lane in each direction) that may accommodate on-street parking. They may also provide access to abutting properties.

- *Local* roadways distribute traffic within a neighborhood, or similar adjacent neighborhoods, and are not intended for use as a through-street or a link between higher capacity facilities such as collector or arterial roadways. Local streets are fronted by residential uses and do not typically serve commercial uses.

5.4 Roadway Descriptions

A review of the important roadways in the project site vicinity and study area is summarized in ***Table 5-1***. As indicated in *Table 5-1*, the important roadways within the project study area were reviewed in terms of the number of lanes provided, roadway median types, posted speed limits, etc. Additionally, the roadway classifications of key roads in the project study area are also presented in *Table 5-1*.

5.5 Existing Public Bus Transit Service

Public bus transit services within the project study area are currently provided by the Metropolitan Transportation Authority (Metro) and the City of Montebello bus lines. The nearest bus stops to the project site are located approximately one-half mile north and south of the project site (i.e., near the intersections of San Gabriel Boulevard/Las Tunas Drive and San Gabriel Boulevard/Mission Road). A summary of the existing transit services, including the transit routes, destinations and peak hour headways is presented in ***Table 5-2***. The existing public transit routes in the project site vicinity are illustrated in ***Figure 5-2***.

Table 5-1
EXISTING ROADWAY DESCRIPTIONS

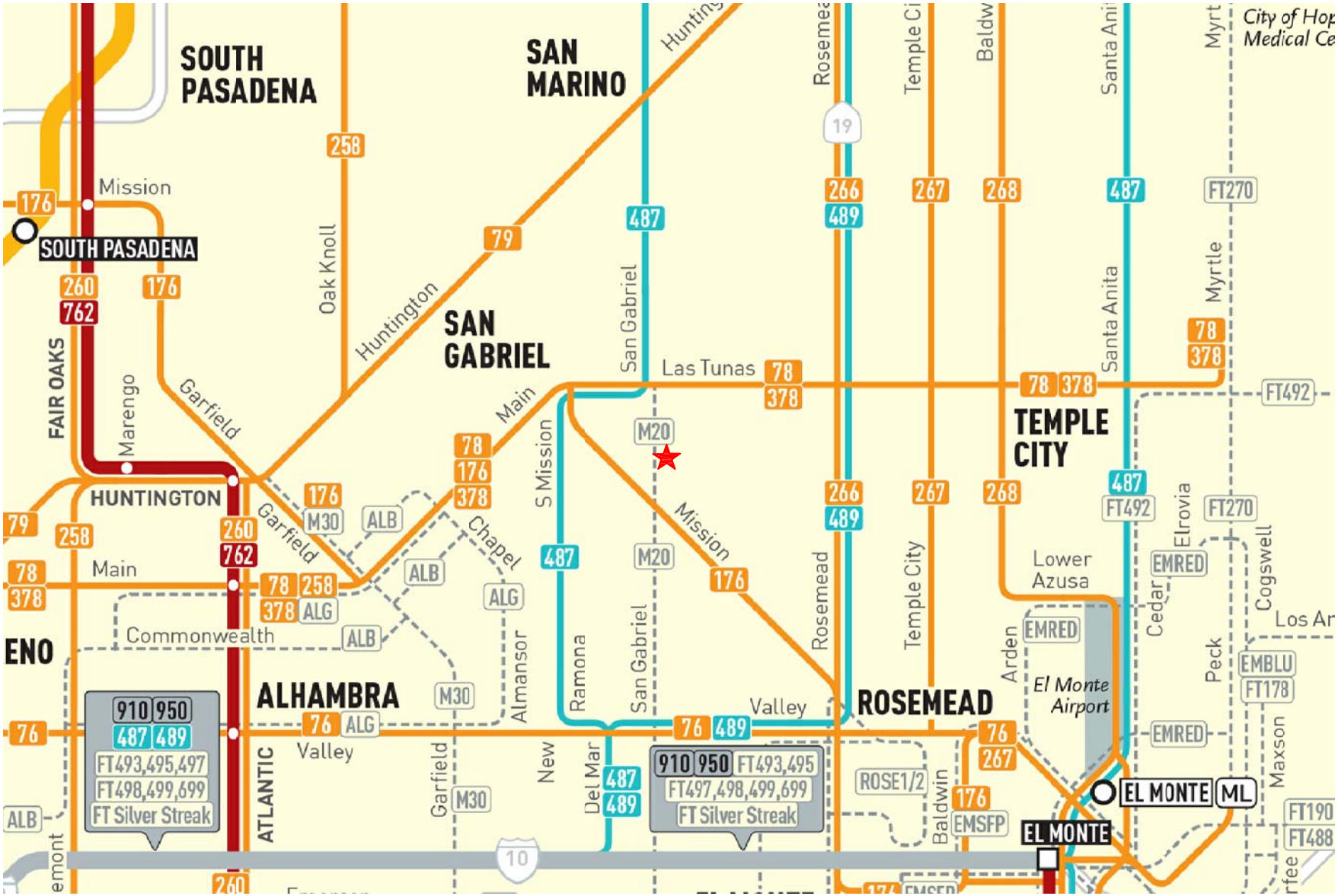
Roadway	Classification [1]	Travel Lanes		Median Types [4]	Speed Limit
		Direction [2]	No. Lanes [3]		
San Gabriel Boulevard	4-Lane Boulevard	NB-SB	4	RMI/2WLT	35
Broadway	2-Lane Limited Secondary Arterial	EB-WB	2	N/A	30
Commercial Avenue	Local Street	EB-WB	2	N/A	25
El Monte Street	Local Street	EB-WB	2	N/A	25

Notes:
[1] Roadway classifications obtained from *The Comprehensive General Plan of the City of San Gabriel , California 2004* , adopted May 18, 2004.
[2] Direction of roadways in the project area: NB-SB = northbound and southbound; and EB-WB = eastbound and westbound.
[3] Number of lanes in both directions on the roadway.
[4] Median type of the road: RMI = Raised Median Island; 2WLT = 2-Way Left-Turn Lane; and N/A = Not Applicable.

Table 5-2
EXISTING TRANSIT ROUTES [1]

ROUTE	DESTINATIONS	ROADWAY(S) NEAR SITE	NO. OF BUSES/TRAINS DURING PEAK HOUR		
			DIR	AM	PM
Metro 78/379	Downtown Los Angeles to Arcadia via South Arcadia, Alhambra and El Sereno	San Gabriel Boulevard, Las Tunas Drive	EB WB	2 6	6 4
Metro 176	Highland Park to Montebello via South Pasadena, San Gabriel, Rosemead, El Monte and South El Monte	San Gabriel Boulevard, Mission Drive	EB WB	2 1	2 1
Montebello 20	Pico Rivera to San Gabriel via Montebello, South San Gabriel and Rosemead	San Gabriel Boulevard, Broadway	NB SB	2 2	2 2
			Total	**15**	**17**

[1] Source: Los Angeles County Metropolitan Transportation Authority (Metro) and City of Montebello Bus Line websites, 2019.



N

NOT TO SCALE

MAP SOURCE: METROPOLITAN TRANSPORTATION AUTHORITY WEBSITE

★ PROJECT SITE

FIGURE 5-2
EXISTING TRANSIT ROUTES

LINSCOTT, LAW & GREENSPAN, engineers

SAN GABRIEL SELF-STORAGE PROJECT

o:\job_file\4340\dwg\f5-2.dwg LDP 11:06:12 07/23/2019 rodriquez

6.0 TRAFFIC COUNTS

6.1 Manual Intersection Traffic Counts

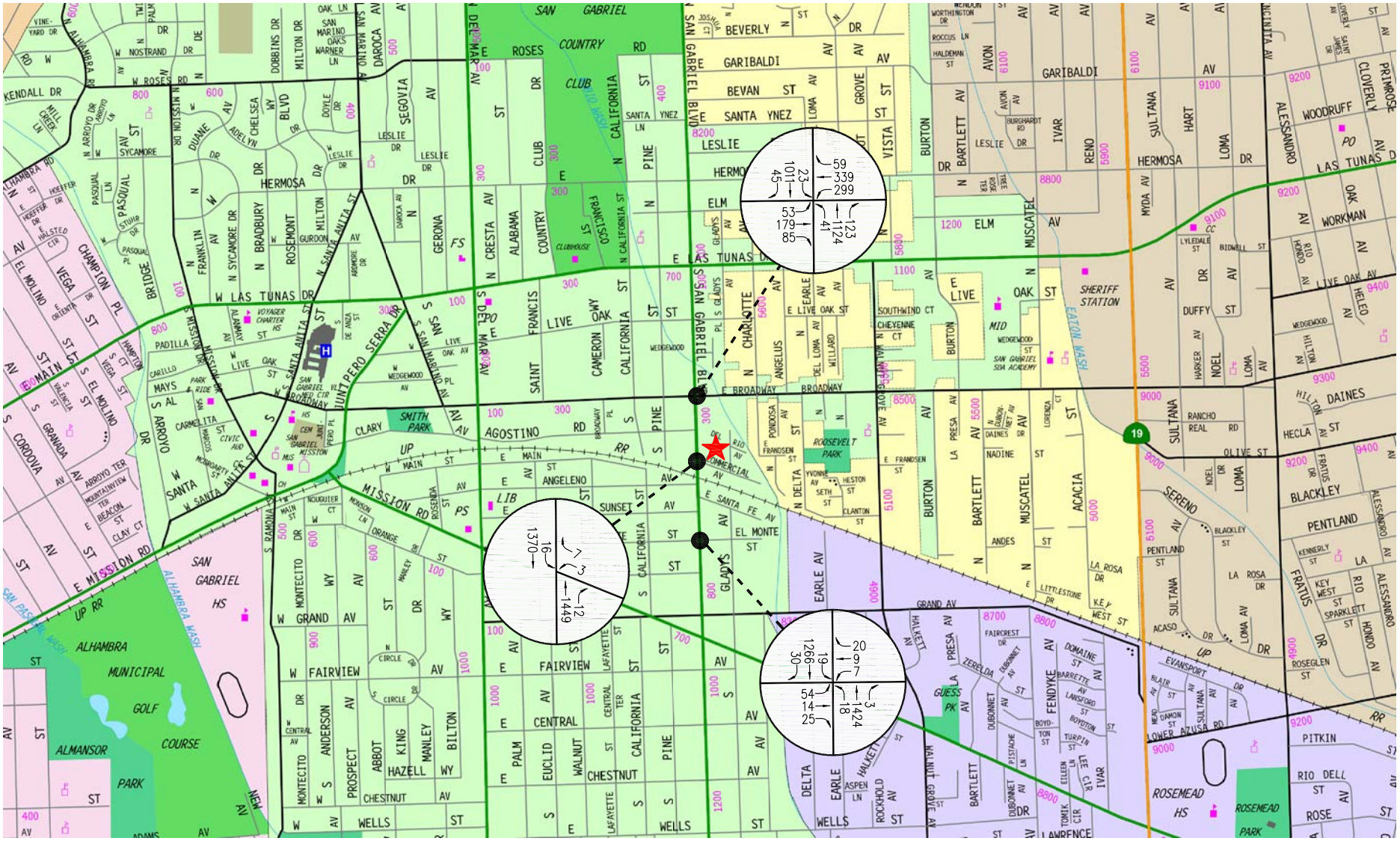
New manual counts of vehicular turning movements were conducted at the study intersections during the weekday morning (AM) and afternoon (PM) commuter periods to determine the peak hour traffic volumes. The manual traffic counts at the study intersections were conducted by a traffic count subconsultant in May 2019 from 7:00 AM to 9:00 AM to determine the weekday AM peak commuter hour and from 4:00 PM to 6:00 PM to determine the weekday PM peak commuter hour. Traffic volumes at the study intersections show the typical weekday peak periods from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM generally associated with the peak morning and afternoon commuter time periods.

The weekday AM and PM peak hour manual counts of vehicle movements at the study intersections are summarized in ***Table 6-1***. The existing traffic volumes at the study intersections during the weekday AM and PM peak hours are shown in ***Figures 6-1*** and ***6-2***, respectively. Summary data worksheets of the weekday manual traffic counts at the study intersections are contained in ***Appendix B***.

Table 6-1
EXISTING TRAFFIC VOLUMES [1]
WEEKDAY AM AND PM PEAK HOURS

NO.	INTERSECTION	DATE	DIR	AM PEAK HOUR		PM PEAK HOUR	
				BEGAN	VOLUME	BEGAN	VOLUME
1	San Gabriel Boulevard/ Broadway	05/14/2019	NB	7:30	1,288	5:00	1,105
			SB		1,079		1,216
			EB		317		440
			WB		697		394
2	San Gabriel Boulevard/ Commercial Avenue	05/14/2019	NB	7:30	1,461	5:00	1,207
			SB		1,386		1,286
			EB		0		0
			WB		10		35
3	San Gabriel Boulevard/ El Monte Street	05/14/2019	NB	7:15	1,445	5:00	1,292
			SB		1,315		1,361
			EB		93		93
			WB		36		34

[1] Counts conducted by City Traffic Counters



MAP SOURCE: RAND MCNALLY & COMPANY

N

NOT TO SCALE

PROJECT SITE

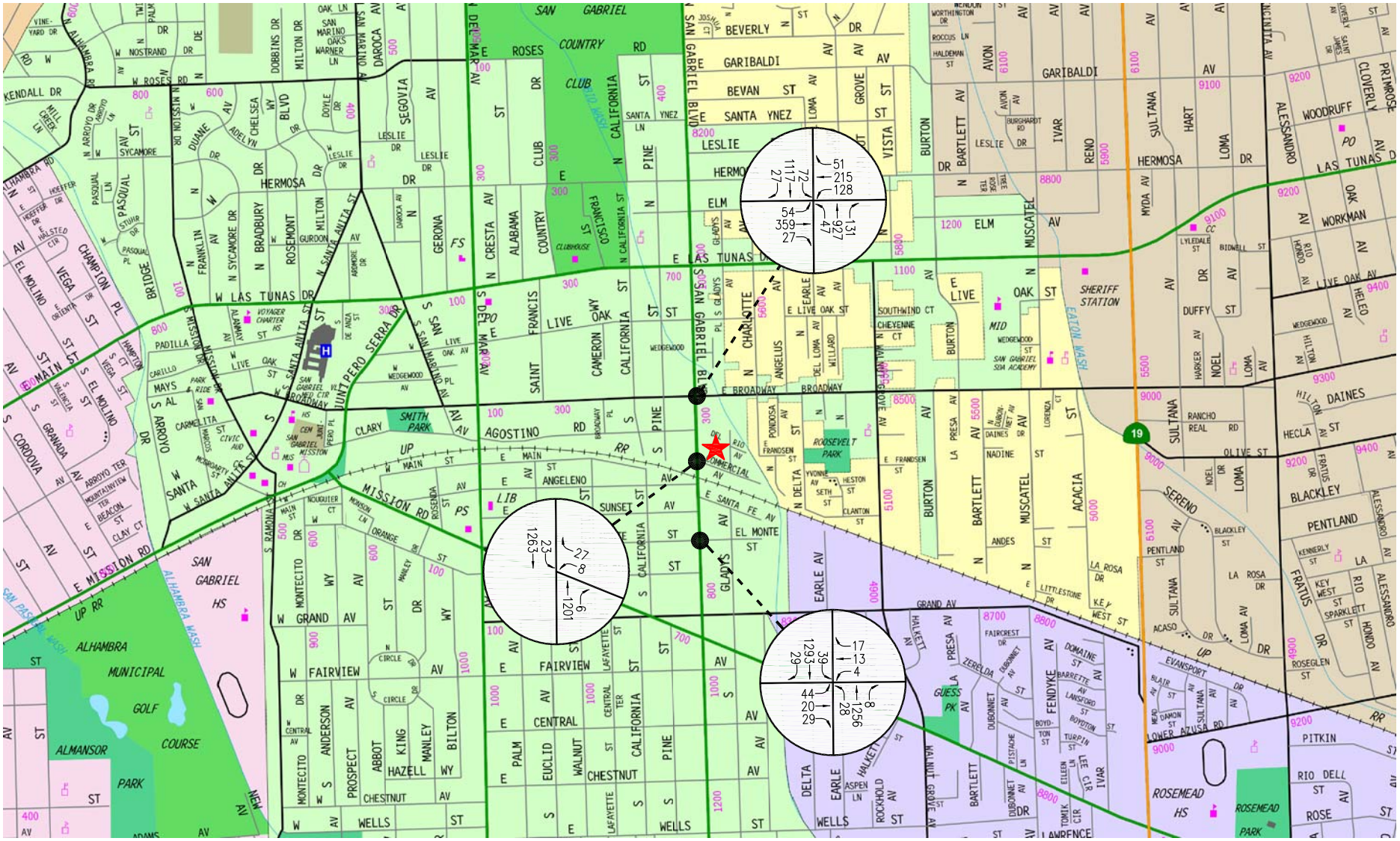
FIGURE 6-1
EXISTING TRAFFIC VOLUMES

WEEKDAY AM PEAK HOUR

SAN GABRIEL SELF-STORAGE PROJECT

LINSCOTT, LAW & GREENSPAN, engineers

o:\job_file\4340\dwg\f6-1.dwg LDP 11:52:04 07/23/2019 rodriquez



MAP SOURCE: RAND MCNALLY & COMPANY

N

NOT TO SCALE

PROJECT SITE

FIGURE 6-2
EXISTING TRAFFIC VOLUMES

WEEKDAY PM PEAK HOUR

SAN GABRIEL SELF-STORAGE PROJECT

LINSCOTT, LAW & GREENSPAN, engineers

o:\job_file\4340\dwg\f6-2.dwg LDP 16:32:19 04/09/2020 rodriquez

7.0 CUMULATIVE DEVELOPMENT PROJECTS

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

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

Accordingly, the traffic analysis provides a highly conservative estimate of future pre-project traffic volumes as it incorporates both the "A" and "B" options outlined in the CEQA Guidelines for purposes of developing the forecast.

7.1 Related Projects

A forecast of on-street traffic conditions prior to occupancy of the proposed project was prepared by incorporating the potential trips associated with other known development projects (related projects) in the area. With this information, the potential impact of the proposed project can be evaluated within the context of the cumulative impact of all ongoing development. The list of related projects was based on information on file at the Community Development/Planning Departments for the City of San Gabriel and the Los Angeles County Department of Regional Planning. The list of related projects in the project study area is presented in ***Table 7-1***. The locations of the related projects are shown in ***Figure 7-1***.

Traffic volumes expected to be generated by the related projects were calculated using rates provided in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*[8]. The related projects' respective traffic generation for the weekday AM and PM peak hours, as well as on a daily basis for a typical weekday, is also summarized in *Table 7-1*. The anticipated distribution of the related projects traffic volumes to the study intersections during the weekday AM and PM peak hours are displayed in ***Figures 7-2*** and ***7-3***, respectively.

[8] Institute of Transportation Engineers *Trip Generation Manual*, 10th Edition, Washington, D.C., 2017.

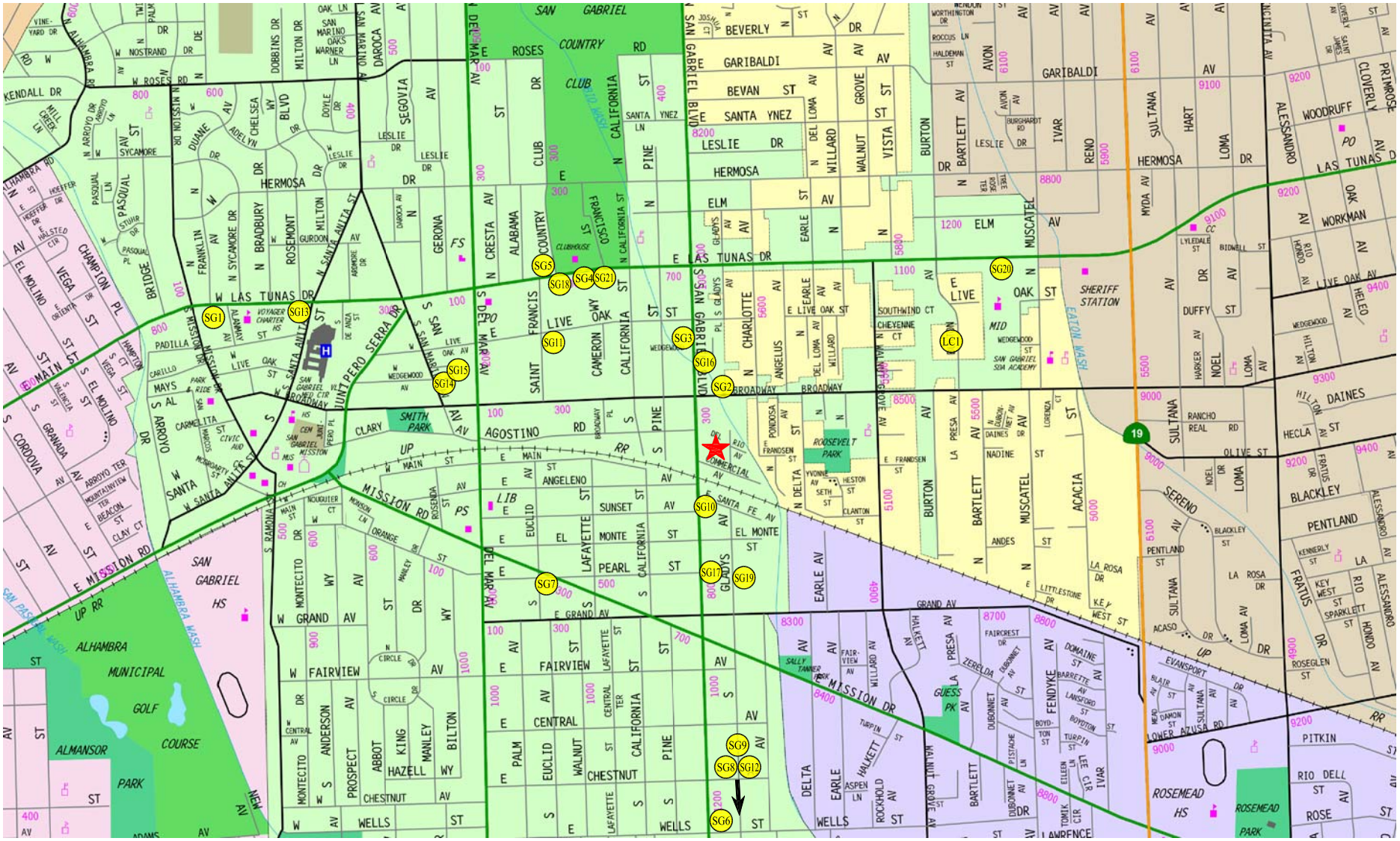
Table 7-1
RELATED PROJECTS LIST AND TRIP GENERATION [1]

MAP NO.	PROJECT STATUS	PROJECT NAME/NUMBER ADDRESS/LOCATION	LAND USE DATA		PROJECT DATA SOURCE	DAILY TRIP ENDS [2] VOLUMES	AM PEAK HOUR VOLUMES [2]			PM PEAK HOUR VOLUMES [2]		
			LAND-USE	SIZE			IN	OUT	TOTAL	IN	OUT	TOTAL
City of San Gabriel												
SG1	Under Construction	704-712 W. Las Tunas Drive	Condominium	37 DU	[3]	271	4	13	17	13	8	21
			Retail	17,768 GLSF	[5]	671	11	6	17	33	35	68
SG2	Proposed	825 E. Broadway	Medical Office	11,000 GSF	[4]	383	24	7	31	11	27	38
SG3	Proposed	201-217 S. San Gabriel Boulevard	Condominium	159 DU	[3]	865	15	42	57	43	27	70
			Retail	12,000 GLSF	[5]	453	7	4	11	22	24	46
			Restaurant	4,600 GSF	[6]	1,450	7	3	10	36	29	65
SG4	Under Construction	402 E. Las Tunas Drive	Medical Office	9,000 GSF	[4]	313	20	5	25	9	22	31
SG5	Built	237 E. Las Tunas Drive	Medical Office	12,000 GSF	[4]	418	26	7	33	12	30	42
SG6	Proposed	807-811 E. Wells Street	Medical Office	2,280 GSF	[7]	496	25	19	44	9	15	24
			General Office	800 GSF								
			Retail	846 GLSF								
			Coffee Shop	800 GSF								
			(Less Existing Single-Family)	(2) DU								
SG7	Under Construction	314 E. Mission Road	Condominium	3 DU	[3]	22	0	1	1	1	1	2
SG8	Proposed	810 E. Valley Boulevard	Apartment	7 DU	[3]	51	1	2	3	3	1	4
			Retail	25,288 GLSF	[5]	955	15	9	24	46	50	96
SG9	Proposed	1613 S. Gladys Avenue	Condominium	7 DU	[3]	51	1	2	3	3	1	4
SG10	Proposed	600 S. San Gabriel Boulevard	Condominium	18 DU	[8]	428	24	24	48	19	13	32
			Retail	6,460 GLSF								
			Restaurant	3,540 GSF								
SG11	Approved	328 E. Live Oak Street	Condominium	12 DU	[3]	88	1	5	6	4	3	7
SG12	Approved	850-860 E. Valley Boulevard	Condominium	49 DU	[3]	359	5	18	23	17	10	27
			Retail	4,600 GLSF	[5]	174	2	2	4	9	9	18
			Restaurant	4,600 GSF	[6]	1,450	7	3	10	36	29	65
SG13	Proposed	506 W. Las Tunas Drive	Medical Office	78,000 GSF	[4]	2,714	169	48	217	76	194	270
			Retail	4,100 GLSF	[5]	155	2	2	4	8	8	16
			Restaurant	5,700 GSF	[6]	1,796	8	4	12	45	36	81
SG14	Proposed	230 S. San Marino Avenue	Condominium	4 DU	[3]	29	0	2	2	1	1	2

Table 7-1 (Continued)
RELATED PROJECTS LIST AND TRIP GENERATION [1]

MAP NO.	PROJECT STATUS	PROJECT NAME/NUMBER ADDRESS/LOCATION	LAND USE DATA		PROJECT DATA SOURCE	DAILY TRIP ENDS [2] VOLUMES	AM PEAK HOUR VOLUMES [2]			PM PEAK HOUR VOLUMES [2]		
			LAND-USE	SIZE			IN	OUT	TOTAL	IN	OUT	TOTAL
SG15	Under Construction	116 Del Marino Place	Apartment	3 DU	[3]	22	0	1	1	1	1	2
SG16	Proposed	220 S. San Gabriel Boulevard	Condominium	163 DU	[9]	1,505	91	127	218	75	50	125
			Retail	12,230 GLSF								
			Restaurant	16,435 GSF								
SG17	Proposed	700-800 S. San Gabriel Boulevard	Condominium	243 DU	[10]	1,322	23	64	87	65	42	107
			Retail	80,000 GLSF	[5]	3,020	47	28	75	146	159	305
SG18	Proposed	324 E. Las Tunas Drive	Condominium	11 DU	[3]	81	1	4	5	4	2	6
			Retail	5,289 GLSF	[5]	200	3	2	5	10	10	20
SG19	Proposed	806-824 S. Gladys Avenue	Assisted Living	197 Beds	[11]	512	23	14	37	19	32	51
SG20	Built	1320 E. Las Tunas Drive	Office	8,600 GSF	[12]	84	9	1	10	2	8	10
SG21	Proposed	416 E. Las Tunas Drive	Condominium	15 DU	[3]	110	2	5	7	5	3	8
			Live/Work	18 DU	[3]	132	2	6	8	6	4	10
			Retail	6,200 GLSF	[5]	234	4	2	6	12	12	24
Los Angeles County												
LC1	Proposed	5561 Burton Avenue	Condominium	3 DU	[3]	22	0	1	1	1	1	2
TOTAL						20,836	579	483	1,062	802	897	1,699

[1] Sources: City of San Gabriel Community Development Department and the County of Los Angeles Department of Regional Planning, except as noted below.
The peak hour traffic volumes were forecast on trip data provided by applying trip rates as provided in the ITE "Trip Generation Manual", 9th and 10th Editions, 2012 and 2017, respectively.
[2] Trips are one-way traffic movements, entering or leaving.
[3] ITE Land Use Code 220 (Multifamily Housing (Low-Rise) trip generation average rates.
[4] ITE Land Use Code 720 (Medical-Dental Office Building) trip generation average rates.
[5] ITE Land Use Code 820 (Shopping Center) trip generation average rates.
[6] ITE Land Use Code 930 (Fast Casual Restaurant) trip generation average rates.
[7] Source: "Artistry Project Traffic Impact Study", prepared by LLG Engineers, May 11, 2016.
[8] Source: "La Ville Soleil at 600 South San Gabriel Boulevard in the City of San Gabriel", prepared by Michael Baker International, August 30, 2016.
[9] Source: "San Gabriel Plaza at 220 South San Gabriel Boulevard in the City of San Gabriel", prepared by Michael Baker International, July 5, 2018.
[10] ITE Land Use Code 221 (Multifamily Housing [Mid-Rise]) trip generation average rates.
[11] ITE Land Use Code 254 (Assisted Living) trip generation average rates.
[12] ITE Land Use Code 710 (General Office Building) trip generation average rates.



MAP SOURCE: RAND MCNALLY & COMPANY

N

NOT TO SCALE

★ PROJECT SITE

(SB) CITY OF SAN GABRIEL RELATED PROJECT

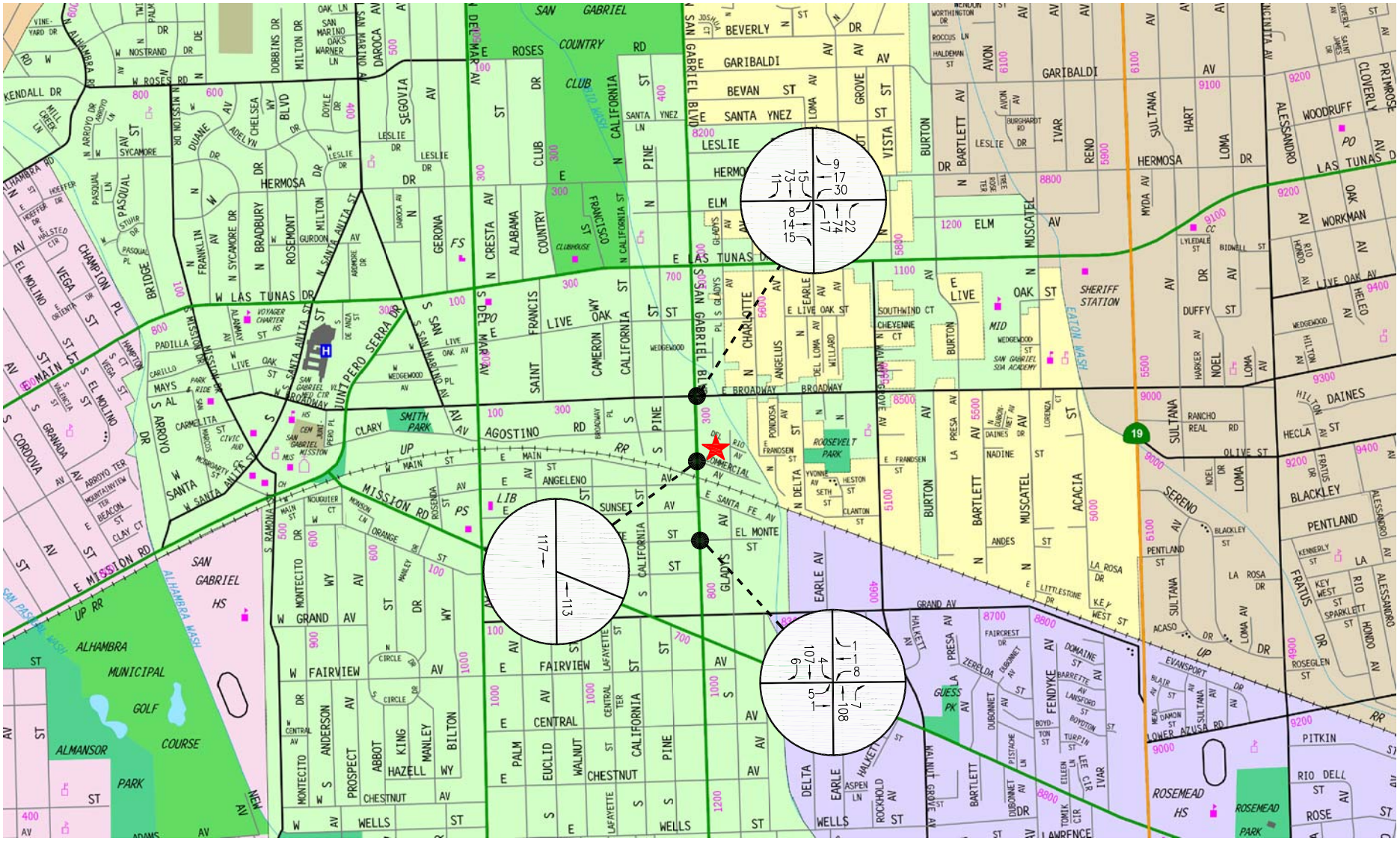
(LC) LOS ANGELES COUNTY RELATED PROJECT

FIGURE 7-1
LOCATION OF RELATED PROJECTS

LINSCOTT, LAW & GREENSPAN, engineers

SAN GABRIEL SELF-STORAGE PROJECT

o:\job_file\4340\dwg\f7-1.dwg LDP 13:28:42 07/23/2019 rodriquez



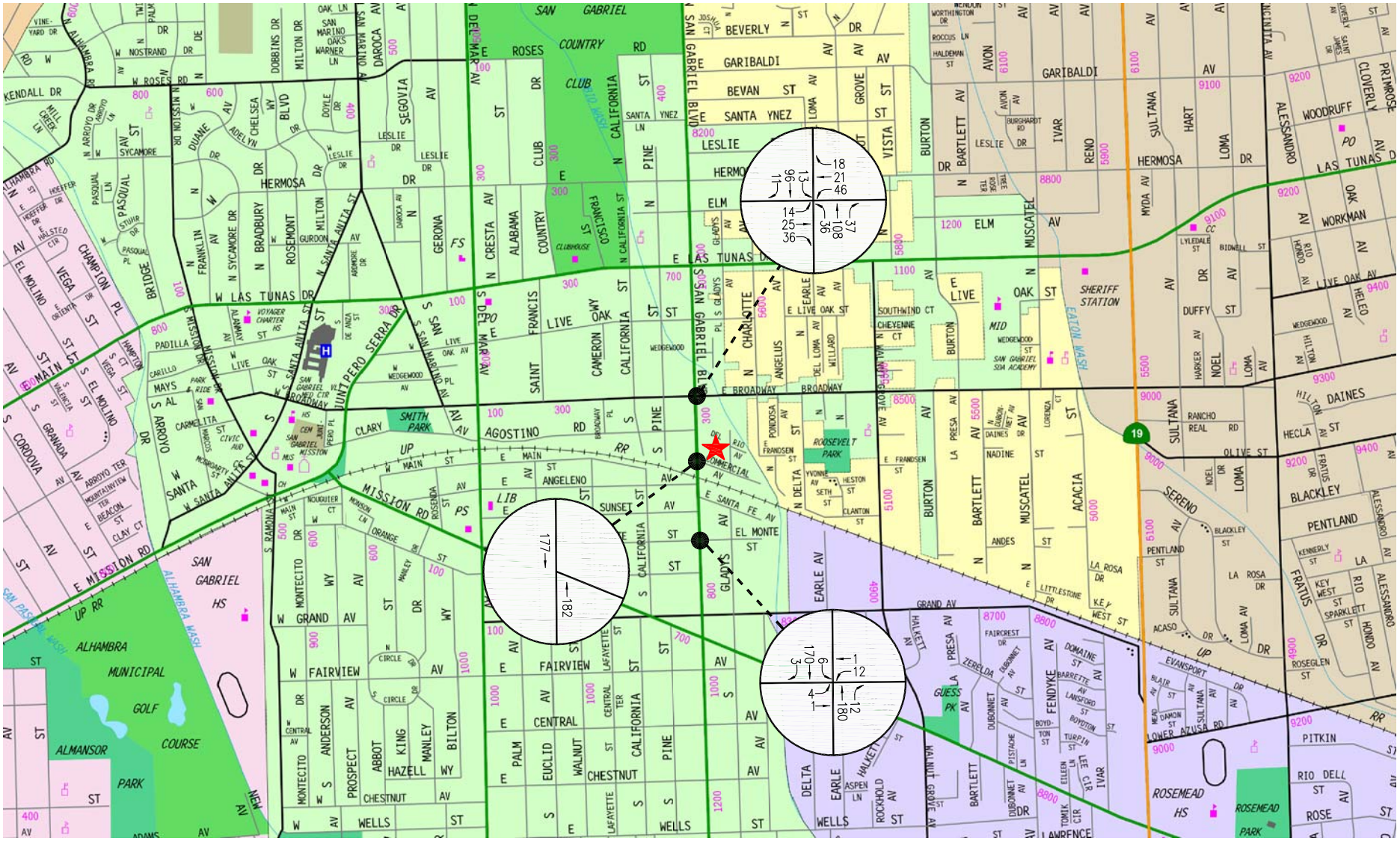
MAP SOURCE: RAND MCNALLY & COMPANY

NOT TO SCALE

FIGURE 7-2
RELATED PROJECTS TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR
SAN GABRIEL SELF-STORAGE PROJECT

LINSCOTT, LAW & GREENSPAN, engineers

o:\job_file\4340\dwg\f7-2.dwg LDP 13:37:10 07/23/2019 rodriquez



MAP SOURCE: RAND MCNALLY & COMPANY

PROJECT SITE

NOT TO SCALE

FIGURE 7-3
RELATED PROJECTS TRAFFIC VOLUMES

WEEKDAY PM PEAK HOUR

SAN GABRIEL SELF-STORAGE PROJECT

LINSCOTT, LAW & GREENSPAN, engineers

o:\job_file\4340\dwg\f7-3.dwg LDP 13:54:58 07/23/2019 rodriquez

7.2 Ambient Traffic Growth

In order to account for area-wide regional growth not included in this analysis, the existing traffic volumes were increased at an annual rate of 0.82 percent (0.82%) to the year 2021 (i.e., the anticipated year of project build-out). The ambient growth factor was based on general traffic growth factors provided in the *2010 Congestion Management Program for Los Angeles County* (the "CMP manual") and determined in consultation with City staff. It is noted that based on review of the general traffic growth factors provided in the CMP manual for the San Gabriel Valley area, it is anticipated that the existing traffic volumes are expected to increase at an annual rate of 0.82% per year between the years 2015 and 2020. Thus, application of this annual growth factor allows for a conservative, worst case forecast of future traffic volumes in the area. Further, it is noted that the CMP manual's traffic growth rate is intended to anticipate future traffic generated by development projects in the project vicinity. Thus, the inclusion in this traffic analysis of both a forecast of traffic generated by known related projects plus the use of an ambient traffic growth factor based on the CMP travel demand model data results in a conservative estimate of future traffic volumes at the study intersections.

8.0 TRAFFIC FORECASTING METHODOLOGY

In order to estimate the traffic impact characteristics of the San Gabriel Self-Storage project, a multi-step process has been utilized. The first step is trip generation, which estimates the total arriving and departing traffic volumes on a peak hour and daily basis. The traffic generation potential is forecast by applying the appropriate vehicle trip generation equations or rates to the project development tabulation.

The second step of the forecasting process is trip distribution, which identifies the origins and destinations of inbound and outbound project traffic volumes. These origins and destinations are typically based on demographics and existing/anticipated travel patterns in the study area.

The third step is traffic assignment, which involves the allocation of project traffic to study area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway links and intersection turning movements throughout the study area.

With the forecasting process complete and project traffic assignments developed, the impact of the proposed project is isolated by comparing operational (i.e., Levels of Service) conditions at the selected key intersections using existing and expected future traffic volumes with and without forecast project traffic. The need for site-specific and/or cumulative local area traffic improvements can then be evaluated and the significance of the project's impacts identified.

8.1 Project Traffic Generation

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the generating land use. Traffic volumes expected to be generated by the proposed project during the weekday AM and PM peak hours, as well as on a daily basis for a weekday, were estimated using rates published in the ITE *Trip Generation Manual.* Traffic volumes expected to be generated by the proposed project were based upon rates per thousand square feet of gross floor area. ITE Land Use Code 151 (Mini-Warehouse) trip generation average rates were used to forecast the traffic volumes expected to be generated by the proposed self-storage component of the project and ITE Land Use Code 710 (General Office Building) trip generation average rates were used to forecast the traffic volumes expected to be generated by the proposed artist studios/office and gallery space. As mentioned previously, the artist tenants would have access to their studios 24 hours a day, seven days a week. Thus, the application of the general office trip generation rates is conservative since the artists would not all arrive/depart during the weekday AM and PM commuter peak periods.

Traffic volumes expected to be generated by the existing active uses located on the project site were also estimated using rates published in the ITE *Trip Generation Manual*. ITE Land Use Code 140 (Manufacturing) and Land Use Code 710 (General Office Building) trip generation

average rates were used to forecast traffic volumes expected to be generated by the existing uses on the project site.

8.1.1 *Project Trip Generation Summary*

The trip generation rates and forecast of the vehicular trips anticipated to be generated by the proposed project are presented in ***Table 8-1***. The project trip generation forecast was submitted for review and approval by City staff. As summarized in *Table 8-1*, the proposed project is expected to generate a net increase of 24 vehicle trips (15 inbound trips and 9 outbound trips) during the weekday AM peak hour. During the weekday PM peak hour, the proposed project is expected to generate a net increase of 36 vehicle trips (15 inbound trips and 21 outbound trips). Over a 24-hour period, the proposed project is forecast to generate a net increase of 334 daily trip ends during a typical weekday (approximately 167 inbound trips and 167 outbound trips).

8.2 Project Trip Distribution and Assignment

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

- The site's proximity to major traffic corridors (i.e., San Gabriel Boulevard, Las Tunas Drive, Mission Road, etc.);
- Expected localized traffic flow patterns based on adjacent roadway channelization and presence of traffic signals;
- Existing intersection traffic volumes;
- Ingress/egress scheme planned for the proposed project; and
- Input from City staff.

For intersections located outside of the traffic analysis study area, the project traffic distribution is expected to continue to disperse the greater the distance from the project site. The general, directional traffic distribution patterns for the proposed project is presented in ***Figure 8-1***. The total net new forecast project weekday AM and PM peak hour traffic volumes at the study intersections are presented in ***Figures 8-2*** and ***8-3***, respectively. The traffic volume assignments presented in *Figures 8-2* and *8-3* reflect the traffic distribution characteristics shown in *Figure 8-1* and the project traffic generation forecast presented in *Table 8-1*.

Table 8-1
PROJECT TRIP GENERATION [1]

LAND USE	SIZE	DAILY TRIP ENDS [2] VOLUMES	AM PEAK HOUR VOLUMES [2] IN	AM PEAK HOUR VOLUMES [2] OUT	AM PEAK HOUR VOLUMES [2] TOTAL	PM PEAK HOUR VOLUMES [2] IN	PM PEAK HOUR VOLUMES [2] OUT	PM PEAK HOUR VOLUMES [2] TOTAL
Proposed Use								
Mini-Warehouse [3]	190,232 GSF	288	11	8	19	15	17	32
Professional Office [4]	9,126 GSF	88	9	2	11	2	8	10
Subtotal Proposed Use		**376**	**20**	**10**	**30**	**17**	**25**	**42**
Existing Uses to be Removed								
Manufacturing [5]	(3,100) GSF	(12)	(2)	0	(2)	(1)	(1)	(2)
Office [4]	(3,099) GSF	(30)	(3)	(1)	(4)	(1)	(3)	(4)
Subtotal Existing Uses		**(42)**	**(5)**	**(1)**	**(6)**	**(2)**	**(4)**	**(6)**
NET TOTAL PROJECT TRIPS		**334**	**15**	**9**	**24**	**15**	**21**	**36**

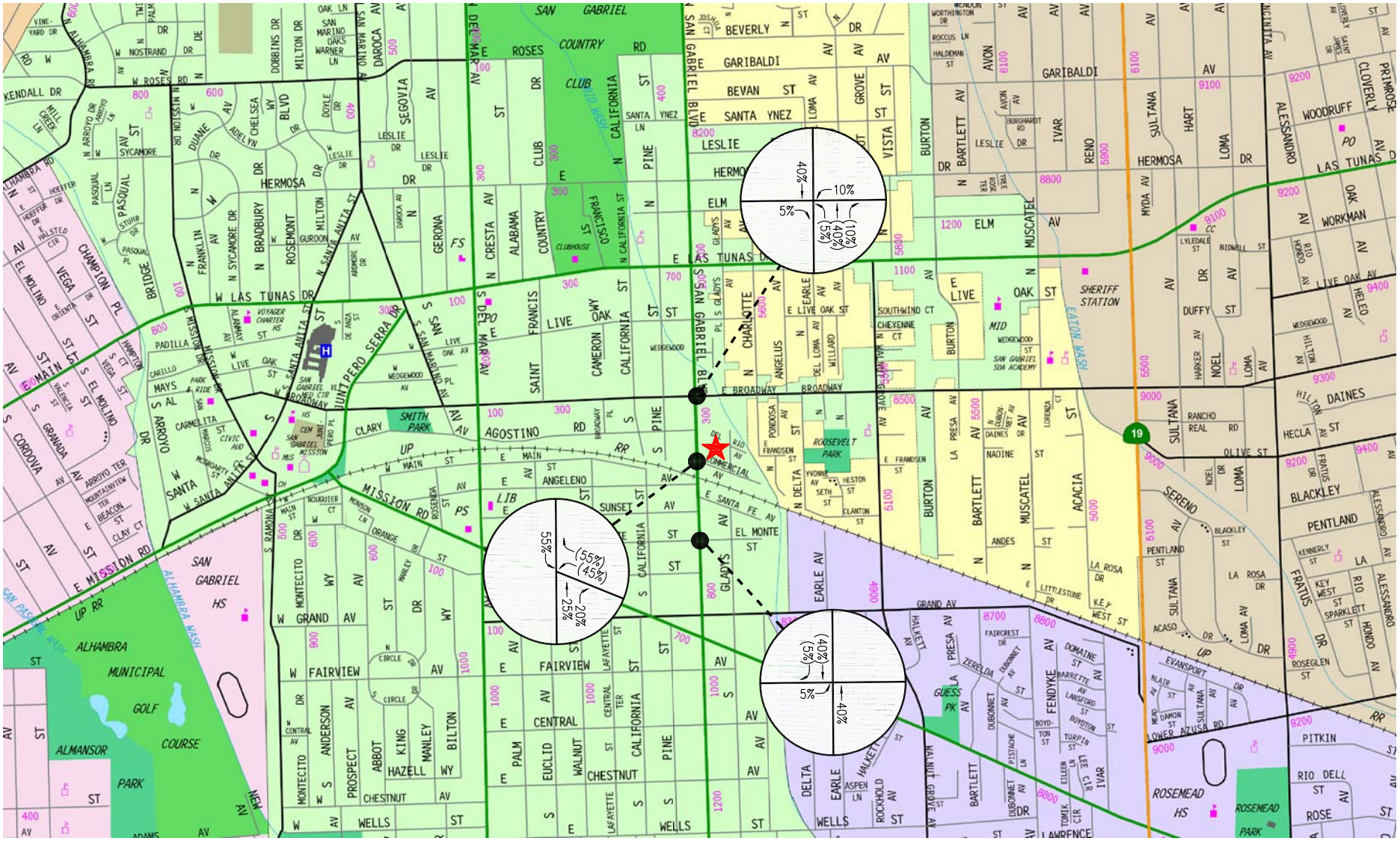
[1] Source: ITE "Trip Generation Manual", 10th Edition, 2017.

[2] Trips are one-way traffic movements, entering or leaving.

[3] ITE Land Use Code 151 (Mini-Warehouse) trip generation average rates.
- Weekday Daily Trip Rate: 1.51 trips/1,000 SF of floor area; 50% inbound/50% outbound
- Weekday AM Peak Hour Trip Rate: 0.10 trips/1,000 SF of floor area; 60% inbound/40% outbound
- Weekday PM Peak Hour Trip Rate: 0.17 trips/1,000 SF of floor area; 47% inbound/53% outbound

[4] ITE Land Use Code 710 (General Office Building) trip generation average rates.
- Daily Trip Rate: 9.74 trips/1,000 SF of floor area; 50% inbound/50% outbound
- AM Peak Hour Trip Rate: 1.16 trips/1,000 SF of floor area; 86% inbound/14% outbound
- PM Peak Hour Trip Rate: 1.15 trips/1,000 SF of floor area; 16% inbound/84% outbound

[5] ITE Land Use Code 140 (Manufacturing) trip generation average rates.
- Daily Trip Rate: 3.93 trips/1,000 SF of floor area; 50% inbound/50% outbound
- AM Peak Hour Trip Rate: 0.62 trips/1,000 SF of floor area; 77% inbound/23% outbound
- PM Peak Hour Trip Rate: 0.67 trips/1,000 SF of floor area; 31% inbound/69% outbound



MAP SOURCE: RAND MCNALLY & COMPANY

N

NOT TO SCALE

★ PROJECT SITE

XX = INBOUND PERCENTAGE

(XX) = OUTBOUND PERCENTAGE

FIGURE 8-1
PROJECT TRIP DISTRIBUTION

LINSCOTT, LAW & GREENSPAN, engineers

SAN GABRIEL SELF-STORAGE PROJECT

o:\job_file\4340\dwg\f8-1.dwg LDP 13:56:26 07/23/2019 rodriquez

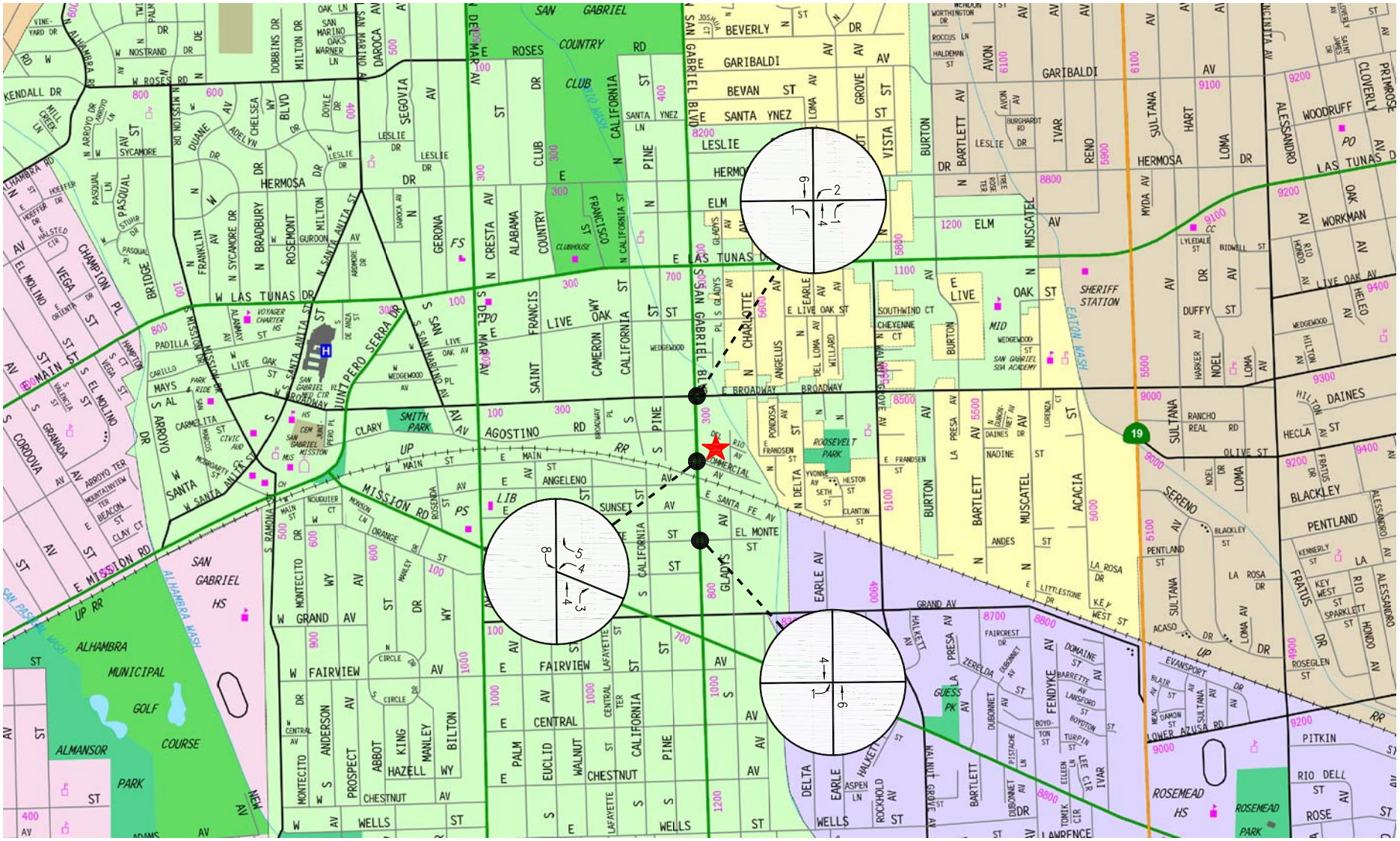


FIGURE 8-2
NET TOTAL PROJECT TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR
SAN GABRIEL SELF-STORAGE PROJECT

LINSCOTT, LAW & GREENSPAN, engineers

o:\job_file\4340\dwg\f8-2.dwg LDP 16:30:38 12/18/2019 rodriquez

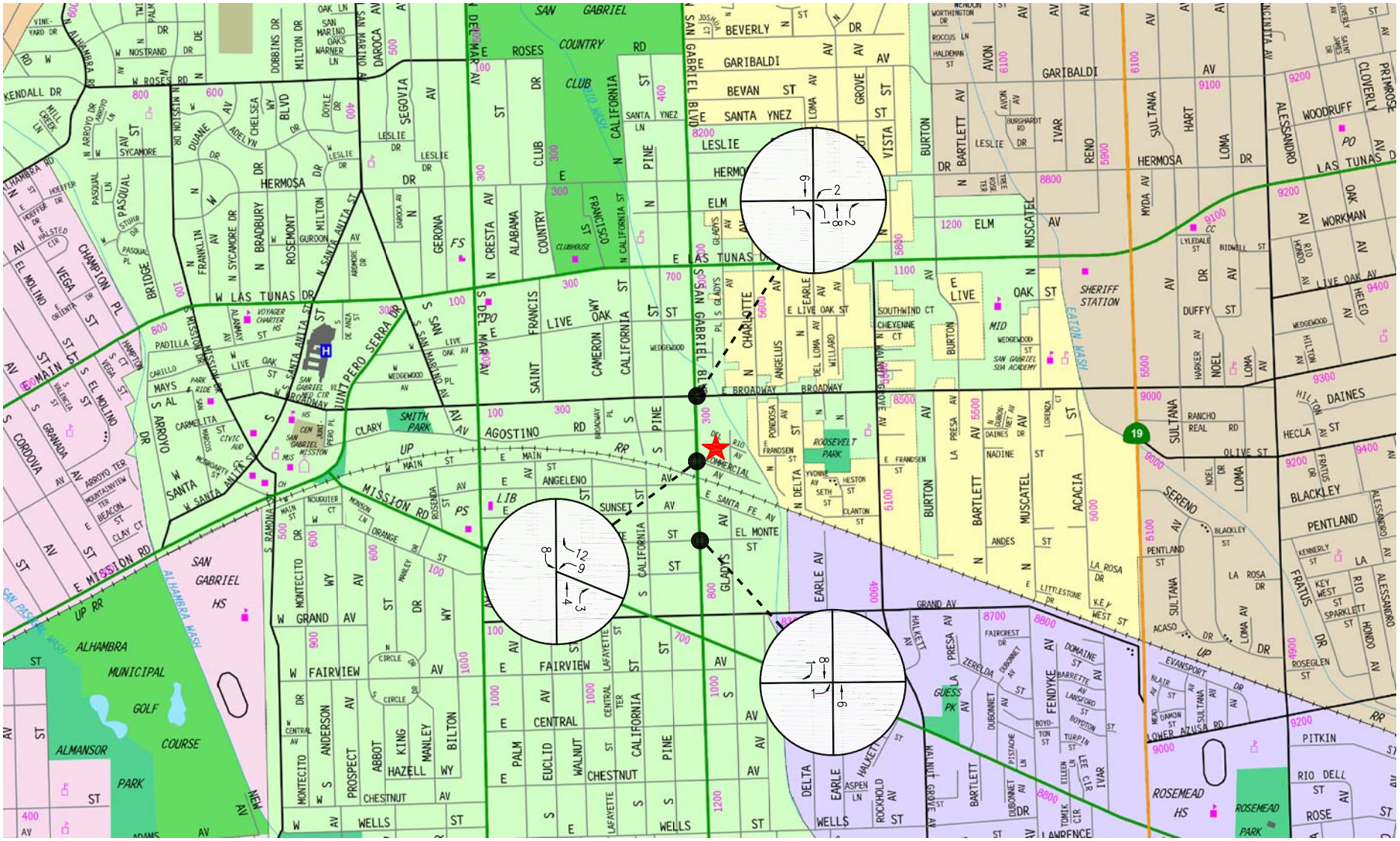


FIGURE 8-3
NET TOTAL PROJECT TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR
SAN GABRIEL SELF-STORAGE PROJECT

LINSCOTT, LAW & GREENSPAN, engineers

o:\job_file\4340\dwg\f8-3.dwg LDP 16:33:16 12/18/2019 rodriquez

9.0 TRANSPORTATION IMPACT ANALYSIS METHODOLOGY

9.1 Intersection Analysis Methodology

Pursuant to the City's transportation study guidelines, signalized study intersections are typically evaluated using the Intersection Capacity Utilization (ICU) method of analysis. The ICU method determines the Volume-to-Capacity (*v/c*) ratios on a critical lane basis (i.e., based on the individual *v/c* ratios for key conflicting traffic movements). The ICU numerical value represents the percent signal (green) time, and thus capacity, required by existing and/or future traffic. It should be noted that the ICU methodology assumes uniform traffic distribution per intersection approach lane and optimal signal timing. The overall intersection *v/c* ratio is subsequently assigned a Level of Service (LOS) value to describe intersection operations. Level of Service varies from LOS A (free flow) to LOS F (jammed condition). The six qualitative categories of Level of Service have been defined along with the corresponding ICU value range and are shown in ***Table 9-1***. Detailed description of the ICU method and corresponding Levels of Service is provided in ***Appendix C***.

TABLE 9-1
LEVEL OF SERVICE CRITERIA AND ICU CHARACTERISTICS

Level of Service (LOS)	Intersection Capacity Utilization Value (V/C)	Level of Service Description
A	≤ 0.600	EXCELLENT. No vehicle waits longer than one red light, and no approach phase is fully used.
B	0.601 – 0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701 – 0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801 – 0.900	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	0.901 – 1.000	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 1.000	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Potentially very long delays with continuously increasing queue lengths.

As the ICU method is intended for signalized intersection analysis, the unsignalized/two-way stop-controlled (TWSC) study intersection (i.e., San Gabriel Boulevard/Commercial Avenue) was also analyzed using the methodology outlined in Chapter 19 of the *Highway Capacity Manual* (HCM) 6th edition for unsignalized intersections. The TWSC methodology estimates the

average control delay for each minor-street movement (or shared movement) as well as major-street left-turns and determines the LOS for each constrained movement. It should be noted that LOS is not defined for the overall TWSC intersection because major-street movements with no delays typically result in a weighted average delay that is extremely low. The six qualitative categories of Level of Service have been defined along with the corresponding HCM control delay value range, as shown in ***Table 9-2***:

TABLE 9-2
LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Level of Service (LOS)	Control Delay Value (sec/veh)	Level of Service Description
A	≤ 10.0	Little or no delay
B	> 10.0 and ≤ 15.0	Short traffic delays
C	> 15.0 and ≤ 25.0	Average traffic delays
D	> 25.0 and ≤ 35.0	Long traffic delays
E	> 35.0 and ≤ 50.0	Very long traffic delays
F	> 50.0	Severe congestion

Average control delay for any particular movement is a function of the capacity of the approach and the degree of saturation. The average control delay is measured in seconds per vehicle, and includes delay due to deceleration to a stop at the back of the queue from free-flow speed, move-up time within the queue, stopped delay at the front of the queue, and delay due to acceleration back to free-flow speed. Detailed description of the HCM method and corresponding Level of Service is also provided in *Appendix C*.

9.2 Intersection Impact Criteria and Thresholds

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

The significance of the potential impacts of project-generated traffic at the study intersections was identified using criteria set forth in the City's *Traffic Study Guidelines for Development Projects in the City of San Gabriel*, September 26, 2006. According to the City's Sliding Scale Method for calculating the level of impact due to traffic generated by the proposed project, a significant transportation impact is determined based on the criteria presented in ***Table 9-3***.

Table 9-3 CITY OF SAN GABRIEL INTERSECTION IMPACT THRESHOLD CRITERIA		
Final *v/c*	**Level of Service**	**Project Related Increase in *v/c***
0.600 - 0.700	A, B	equal to or greater than 0.06
> 0.700 - 0.800	C	equal to or greater than 0.04
> 0.800 - 0.900	D	equal to or greater than 0.02
> 0.900	E, F	equal to or greater than 0.01

The City's Sliding Scale Method requires mitigation of project traffic impacts whenever traffic generated by the proposed development causes an increase of the analyzed intersection *v/c* ratio by an amount equal to or greater than the values shown in *Table 9-3*. The ICU calculations use a lane capacity of 1,600 vehicles per hour (vph) for left-turn, through, and right-turn lanes, and a dual-lane capacity of 2,880 vph. A clearance interval of 0.10 is also included in the ICU calculations.

9.3 Transportation Impact Analysis Scenarios

Traffic impacts at the study intersections were analyzed for the following conditions:

[a] Existing conditions.

[b] Condition [a] with completion and occupancy of the proposed project.

[c] Condition [a] plus 0.82 percent annual ambient traffic growth through year 2021.

[d] Condition [c] with completion and occupancy of the related projects.

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

[f] Condition [e] with implementation of project mitigation measures, where necessary.

The traffic volumes for each new condition were added to the volumes in the prior condition to determine the change in capacity utilization at the study intersections. The proposed project ICU/HCM data worksheets for the analyzed intersections are contained in *Appendix C*.

10.0 TRANSPORTATION ANALYSIS

Summaries of the *v/c* ratios or delays and LOS values for the study intersections during the weekday AM and PM peak hours are shown in ***Table 10-1***.

10.1 Existing Conditions

As indicated in column [1] of *Table 10-1*, one of the study intersections (San Gabriel Boulevard/Commercial Avenue) is presently operating at LOS F during the weekday AM peak hour and LOS E during the PM peak hour under existing conditions. It is important to note that this intersection is already planned for signalization prior to the proposed project's completion and occupancy (i.e., year 2021). The existing conditions ICU data worksheets and the HCM data worksheets for the study intersections during the weekday AM and PM peak hours are contained in *Appendix C*. As previously mentioned, the existing traffic volumes at the study intersections during the weekday AM and PM peak hours are provided in *Figures 6-1* and *6-2*, respectively.

10.2 Existing With Project Conditions

As shown in column [2] of *Table 10-1,* the existing with project conditions were forecast based on the addition of traffic expected by the proposed project. The *v/c* ratios and *delays* at the study intersections appropriately reflect the addition of traffic generated by the proposed project in combination with the existing traffic volumes. As presented in column [2] of *Table 10-1*, the following study intersection is anticipated to operate at LOS F for the peak hour/s shown below with the addition of project traffic:

- Int. No. 2: San Gabriel Blvd./Commercial Ave. AM Peak Hour: 88.5 sec. of delay, LOS F
  PM Peak Hour: 67.8 sec. of delay, LOS F

As mentioned previously for future conditions, this intersection has been approved for the traffic signal installation which would improve overall delay than what is reported for the existing with project condition. The existing with project traffic volumes at the study intersections during the weekday AM and PM peak hours are presented in ***Figures 10-1*** and ***10-2***, respectively.

10.3 Future Pre-Project with Ambient Growth and Related Projects Conditions

The future year 2021 pre-project conditions were forecast based on the addition of traffic expected to be generated by the related projects, as well as the growth in traffic due to the combined effects of continuing development, intensification of existing developments and other factors (i.e., ambient growth). The *v/c* ratios and *delays* at the study intersections appropriately reflect the addition of traffic generated by the related projects listed in *Table 7-1* and growth in ambient traffic.

As presented in column [3] of *Table 10-1*, one of the study intersections is expected to operate at LOS E during the weekday AM and PM peak hours. The following study intersection is

Table 10-1
SUMMARY OF VOLUME TO CAPACITY RATIOS
AND LEVELS OF SERVICE
WEEKDAY AM AND PM PEAK HOURS

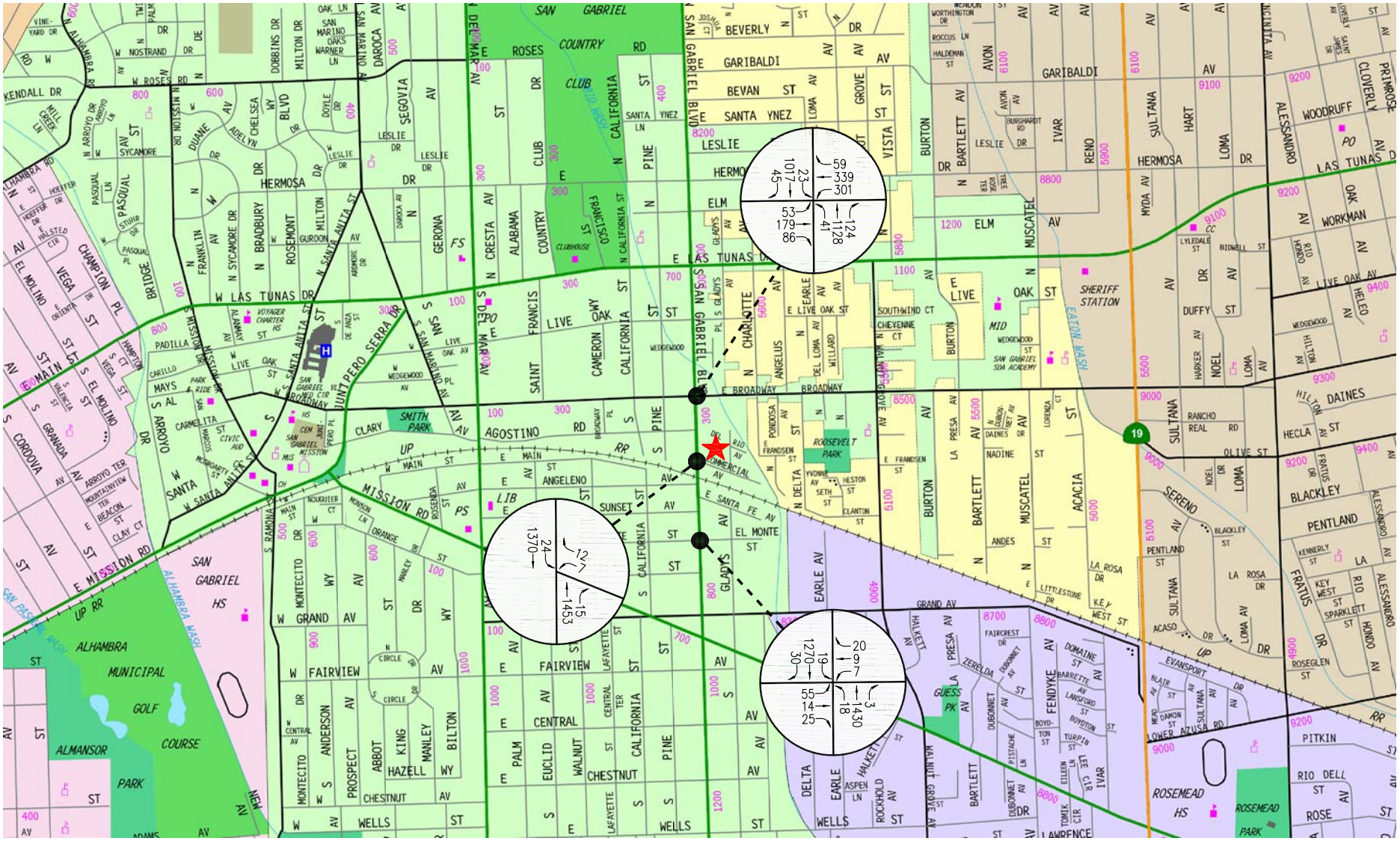
NO.	INTERSECTION	PEAK HOUR	[1] YEAR 2019 EXISTING V/C or DELAY	[1] LOS [b]	[2] YEAR 2019 EXISTING W/ PROJECT V/C or Delay	[2] LOS [b]	[3] YEAR 2021 FUTURE PRE-PROJECT V/C or DELAY	[3] LOS [b]	[4] YEAR 2021 FUTURE W/ PROJECT V/C or DELAY	[4] LOS [b]	[4] CHANGE V/C or DELAY [(4)-(3)]	[4] SIGNIF. IMPACT
1	San Gabriel Boulevard/	AM	0.856	D	0.859	D	0.944	E	0.948	E	0.004	NO
	Broadway	PM	0.808	D	0.813	D	0.942	E	0.947	E	0.005	NO
2	San Gabriel Boulevard/	AM	58.8 sec.	F	88.5 sec.	F	0.614	B	0.624	B	0.010	NO
	Commercial Avenue [a]	PM	38.5 sec.	E	67.8 sec.	F	0.573	A	0.586	A	0.013	NO
		AM	0.573		0.586							
		PM	0.517		0.534							
3	San Gabriel Boulevard/	AM	0.610	B	0.612	B	0.660	B	0.663	B	0.003	NO
	El Monte Street	PM	0.577	A	0.580	A	0.641	B	0.645	B	0.004	NO

[a] Currently unsignalized intersection. Reported delay values represent the delays associated with the most constrained approach of the intersection. The City has approved a traffic signal installation at this location which is planned to be fully operational prior to the project build-out and occupancy year in 2021. As such, the future pre-project and with project conditions include analysis of this location as a signalized intersection.

[b] Level of Service (LOS) is based on the reported ICU value for the signalized intersection and the delay value for the unsignalized intersection.

City of San Gabriel intersection impact threshold criteria is as follows:

Final v/c	LOS	Project Related Increase in v/c
>=0.600 - 0.700	A,B	equal to or greater than 0.06
>=0.700 - 0.800	C	equal to or greater than 0.04
>=0.800 - 0.900	D	equal to or greater than 0.02
> 0.900	E,F	equal to or greater than 0.01



PROJECT SITE

N

NOT TO SCALE

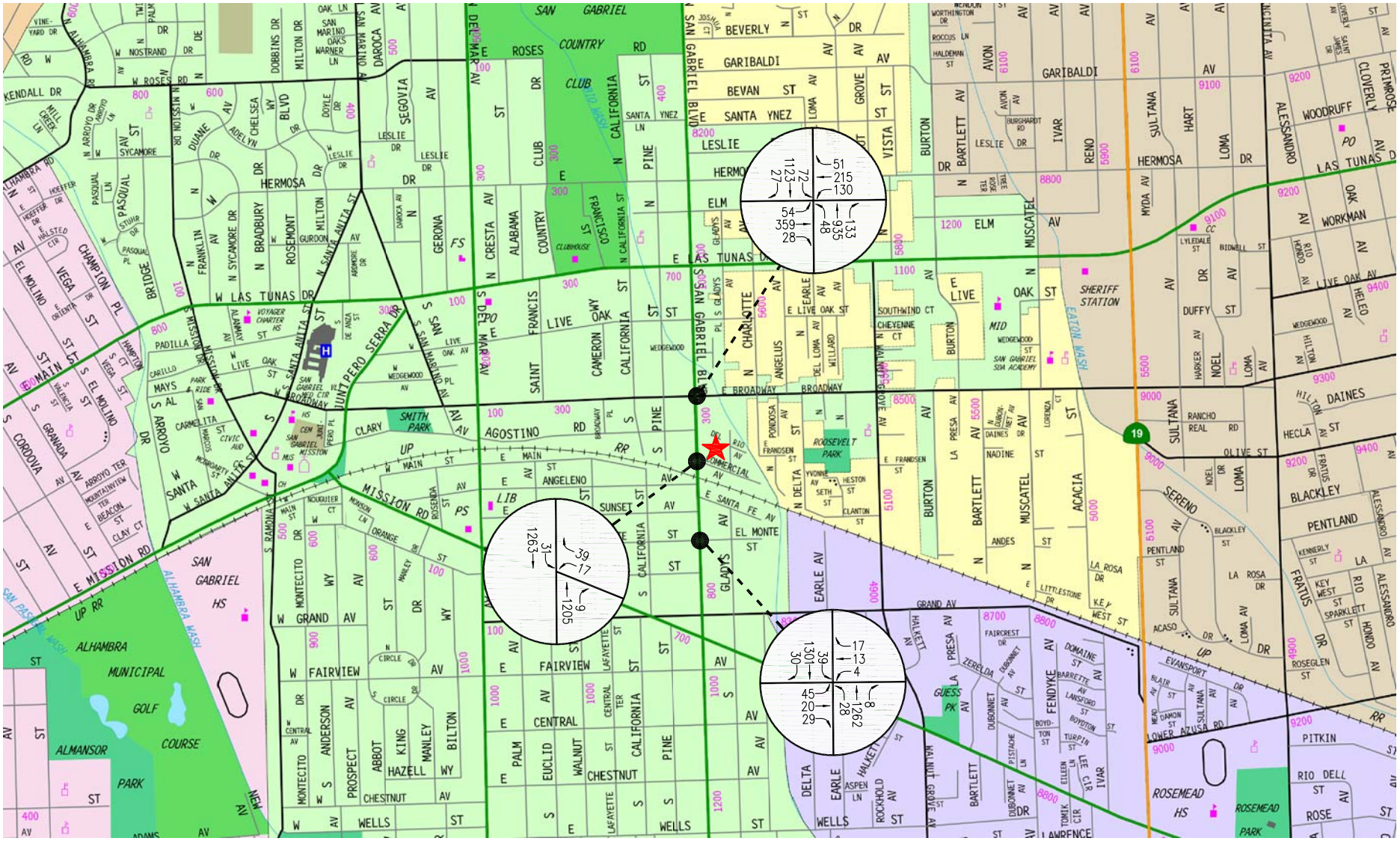
LINSCOTT, LAW & GREENSPAN, engineers

FIGURE 10-1
EXISTING WITH PROJECT TRAFFIC VOLUMES

WEEKDAY AM PEAK HOUR

SAN GABRIEL SELF-STORAGE PROJECT

o:\job_file\4340\dwg\f10-1.dwg LDP 16:34:17 12/18/2019 rodriquez



MAP SOURCE: RAND MCNALLY & COMPANY

PROJECT SITE

NOT TO SCALE

FIGURE 10-2
EXISTING WITH PROJECT TRAFFIC VOLUMES

WEEKDAY PM PEAK HOUR

SAN GABRIEL SELF-STORAGE PROJECT

LINSCOTT, LAW & GREENSPAN, engineers

o:\job_file\4340\dwg\f10-2.dwg LDP 16:35:15 12/18/2019 rodriquez

anticipated to operate at LOS E for the peak hour/s shown below with the addition of related projects traffic and ambient traffic:

- Int. No. 1: San Gabriel Blvd./Broadway — AM Peak Hour: *v/c*=0.944, LOS E; PM Peak Hour: *v/c*=0.942, LOS E

The future pre-project (existing, ambient growth and related projects) traffic volumes at the study intersections during the weekday AM and PM peak hours are presented in ***Figures 10-3*** and ***10-4***, respectively.

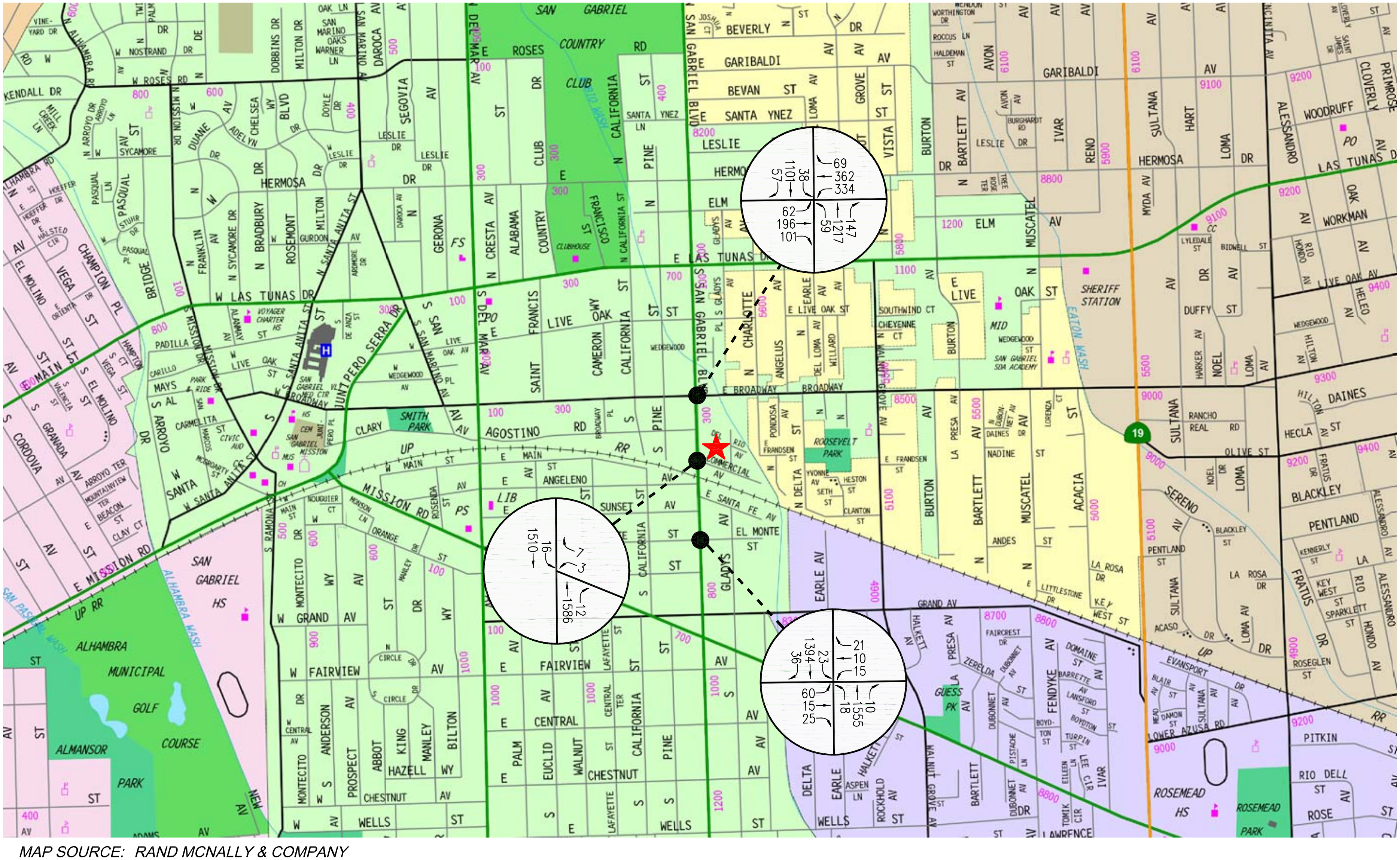
10.4 Future With Project Conditions

In order to determine the operating conditions of the street system under the year 2021 future with project conditions, traffic expected to be generated by the proposed project was added to the year 2021 future pre-project conditions. As indicated in column [4] of *Table 10-1*, application of the City's threshold criteria to the "Future With Project" scenario indicates that the proposed project is not expected to create any significant impacts at any of the three study intersections. Incremental, but less than significant impacts are noted at the study intersections, as presented in *Table 10-1*. Because there are no significant impacts, no traffic mitigation measures are required or recommended for the study intersections under the "Future With Project" conditions. The future with project (existing, ambient growth, related projects and project) traffic volumes at the study intersections during the weekday AM and PM peak hours are illustrated in ***Figures 10-5*** and ***10-6***, respectively. The future cumulative with project (existing, ambient growth, related projects, and project) traffic volumes at the study intersections during the weekday AM and PM peak hours are presented in the ICU worksheets in *Appendix C*.

10.5 Project Driveway Vehicle Queuing Review

The City of San Gabriel has requested that a vehicle queuing analysis be prepared for the project driveways on San Gabriel Boulevard and Commercial Avenue, as well as at the San Gabriel Boulevard/Commercial Avenue intersection, in order to evaluate the project's potential queuing impacts on the adjacent roadways. Specifically, the key traffic movements reviewed include the southbound left-turn movement on San Gabriel Boulevard into the site and the eastbound left-turn movement on Commercial Avenue into the site. However, due to the presence of the existing southbound left-turn lane associated with San Gabriel Boulevard/Commercial Avenue intersection, which extends along the project frontage, no project trips are assigned to the southbound left-turn movement at the San Gabriel Boulevard project driveway. As such, this analysis focuses on the evaluation of the southbound left-turn movement at the San Gabriel Boulevard/Commercial Avenue intersection and the eastbound left-turn movement at the Project Driveway/Commercial Avenue intersection.

In forecasting future vehicle queues, the HCS7 software considers traffic volume data, lane configurations, and available vehicle storage lengths for the respective traffic movements. For purposes of this analysis, it is assumed that the subject Project Driveway/Commercial Avenue



NOT TO SCALE

PROJECT SITE

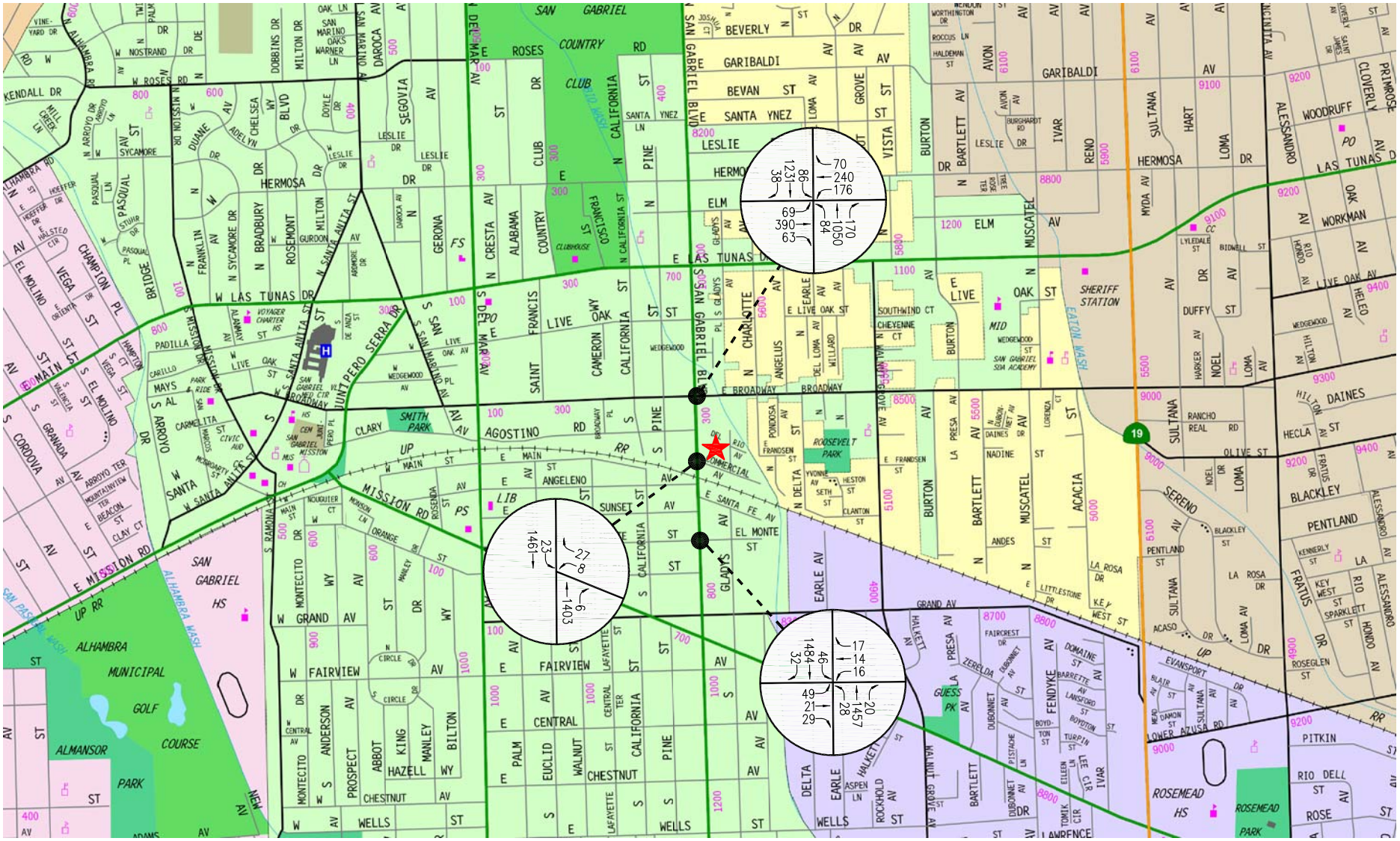
LINSCOTT, LAW & GREENSPAN, engineers

FIGURE 10-3
FUTURE PRE-PROJECT WITH AMBIENT GROWTH AND RELATED PROJECTS TRAFFIC VOLUMES

WEEKDAY AM PEAK HOUR

SAN GABRIEL SELF-STORAGE PROJECT

o:\job_file\4340\dwg\f10-3.dwg LDP 14:07:30 07/23/2019 rodriquez



MAP SOURCE: RAND MCNALLY & COMPANY

PROJECT SITE

NOT TO SCALE

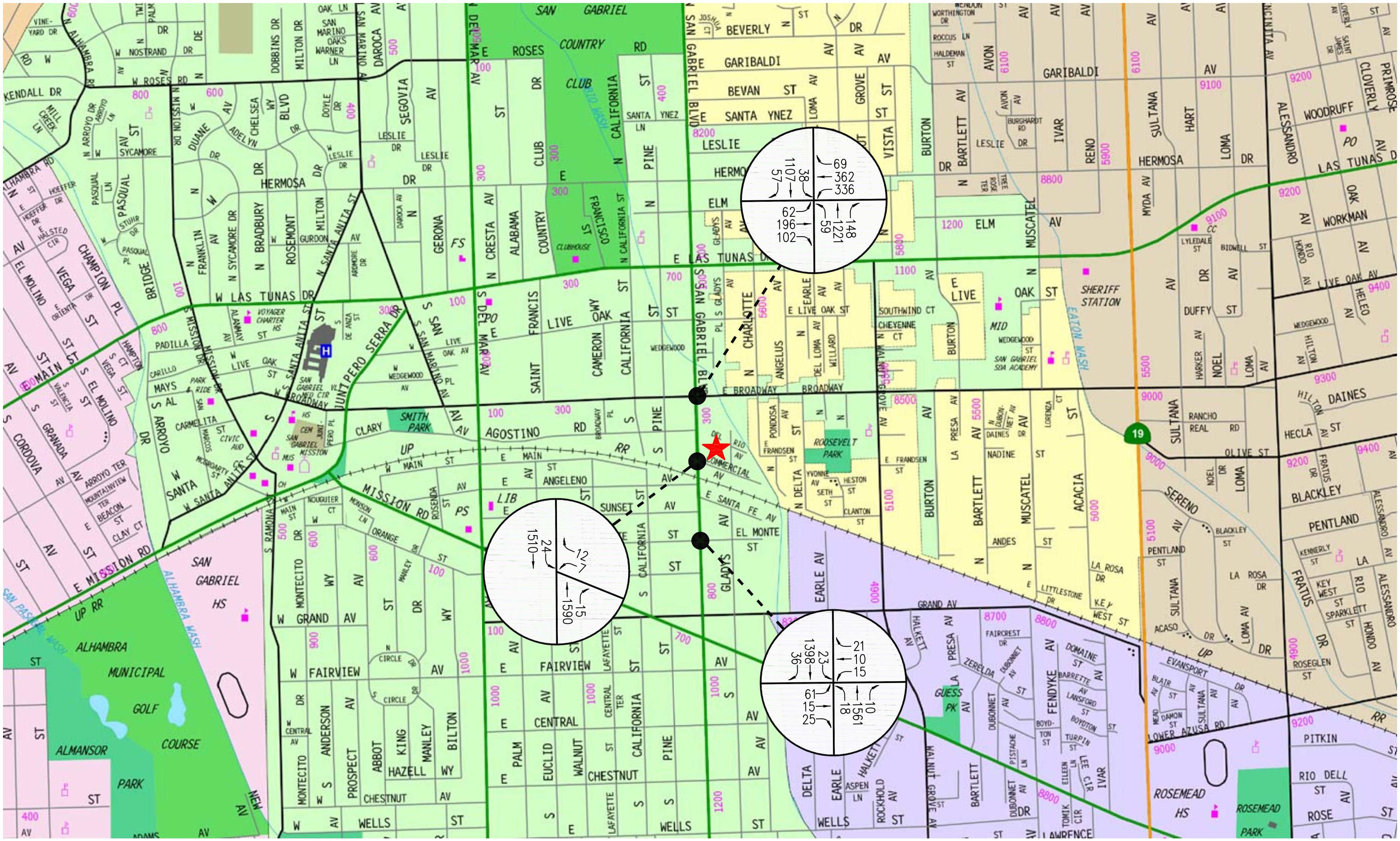
FIGURE 10-4
FUTURE PRE-PROJECT WITH AMBIENT GROWTH AND RELATED PROJECTS TRAFFIC VOLUMES

WEEKDAY PM PEAK HOUR

SAN GABRIEL SELF-STORAGE PROJECT

LINSCOTT, LAW & GREENSPAN, engineers

o:\job_file\4340\dwg\f10-4.dwg LDP 14:08:00 07/23/2019 rodriquez



MAP SOURCE: RAND MCNALLY & COMPANY

NOT TO SCALE

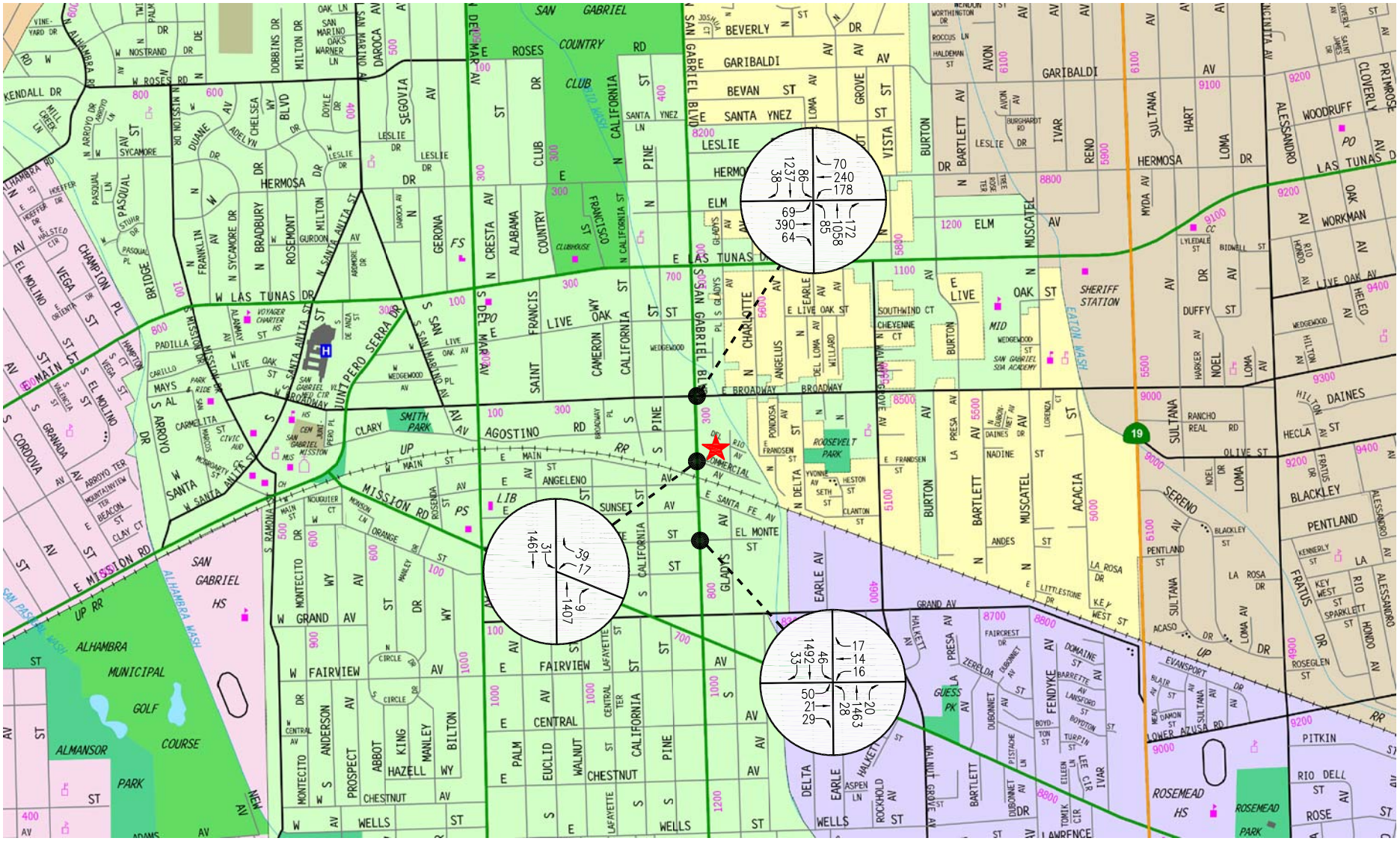
★ PROJECT SITE

LINSCOTT, LAW & GREENSPAN, engineers

FIGURE 10-5
FUTURE WITH PROJECT TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR

SAN GABRIEL SELF-STORAGE PROJECT

o:\job_file\4340\dwg\f10-5.dwg LDP 16:36:02 12/18/2019 rodriquez



MAP SOURCE: RAND MCNALLY & COMPANY

PROJECT SITE

NOT TO SCALE

FIGURE 10-6
FUTURE WITH PROJECT TRAFFIC VOLUMES

WEEKDAY PM PEAK HOUR

SAN GABRIEL SELF-STORAGE PROJECT

LINSCOTT, LAW & GREENSPAN, engineers

o:\job_file\4340\dwg\f10-6.dwg LDP 16:36:47 12/18/2019 rodriquez

intersection would operate as a two-way stop-controlled intersection, with a stop-sign facing the minor street approach (i.e., project driveway). As mentioned previously, the San Gabriel Boulevard/Commercial Avenue intersection is planned to be signalized prior to the project construction and occupancy and is assumed to operate as a two-phase signal (i.e., with the left-turn movements being accommodated under permissive vs. protected operation).

This analysis has been prepared using the respective year 2021 future with project weekday AM peak hour and PM peak hour traffic volume forecasts. The HCM analysis provides a forecast of the 95th percentile vehicle queue for the analysis time periods. The 95th percentile queue is the maximum back of vehicle queue with 95th percentile traffic volumes and is typically utilized for design purposes. ***Table 10-2*** provides a summary of the forecast vehicle queuing anticipated at the project driveways as well as at the southbound left-turn movement at the San Gabriel Boulevard/Commercial Avenue intersection during the weekday AM and PM peak hours. *Table 10-2* summarizes the 95th percentile vehicle queue forecasts for each of the analysis time periods under the year 2021 future with project conditions. *Table 10-2* also summarizes the available storage length for those movements. Based on this analysis, vehicular queuing is expected to be fully accommodated at each of the proposed project access locations. Summary data worksheets of the queuing analyses are contained in ***Appendix D***.

Table 10-2
SUMMARY OF PROJECT DRIVEWAYS VEHICLE QUEUING ANALYSIS [1]
WEEKDAY AM AND PM PEAK HOURS

LOCATION	PEAK HOUR	AVAILABLE STORAGE [2] (FEET)	FUTURE YEAR 2021 WITH PROJECT CONDITIONS	
			95th PERCENTILE QUEUE [3] (FEET)	EXCEEDS STORAGE? (YES/NO)
San Gabriel Boulevard/	AM	---	0	No
Project Driveway (SB Left-Turn) [4]	PM	---	0	No
San Gabriel Boulevard/	AM	115	25	No
Commercial Avenue (SB Left-Turn) [5]	PM	115	25	No
Project Driveway/	AM	160	25	No
Commercial Avenue (EB Left-Turn)	PM	160	25	No

[1] Based on the Highway Capacity Manual 6th Edition operational analysis methodology for unsignalized (two-way stop-controlled) intersections.

[2] Available storage measured via Google Earth aerial imagery dated March 2018.

[3] The 95th percentile queue is the maximum back of queue with 95th percentile traffic volumes. An average vehicle length of 25 feet (including vehicle separation) was assumed for analysis purposes. A minimum of 25 feet (i.e., one vehicle) was reported for queues of less than 25 feet.

[4] Due to the presence of the existing southbound left-turn lane associated with the San Gabriel Boulevard/Commercial Avenue intersection, which extends along the project frontage, no project trips are assigned to the southbound left-turn ingress traffic movement at the project driveway on San Gabriel Boulevard, as the driveway will be limited to right-turn ingress/egress movements only.

[5] The intersection is currently planned to be signalized prior to construction and occupancy of the proposed project.

11.0 TRANSPORTATION IMPROVEMENT MEASURES

In accordance with the City's *Traffic Study Guidelines for Development Projects in the City of San Gabriel*, September 26, 2006, Transportation Demand Management (TDM) is a component to be addressed in the Transportation Study. However, as the project is below the established threshold, mandatory TDM measures are not required for the project. As such, the Applicant will be encouraged to volunteer TDM opportunities to employees and patrons but any specific measures are not addressed in this study nor are they required.

12.0 CONGESTION MANAGEMENT PROGRAM TRAFFIC IMPACT ASSESSMENT

The Congestion Management Program (CMP) is a state-mandated program that was enacted by the California State Legislature with the passage of Proposition 111 in 1990. The program is intended to address the impact of local growth on the regional transportation system.

As required by the *2010 Congestion Management Program for Los Angeles County*, a Traffic Impact Assessment (TIA) has been prepared to determine the potential impacts on designated monitoring locations on the CMP highway system. The analysis has been prepared in accordance with procedures outlined in the *2010 Congestion Management Program for Los Angeles County*, County of Los Angeles Metropolitan Transportation Authority, 2010.

According to Section D.9.1 (Appendix D, page D-6) of the 2010 CMP manual, the criteria for determining a significant transportation impact is listed below:

> "A significant transportation impact occurs when the proposed project increases traffic demand on a CMP facility by 2% of capacity (V/C $\geq$ 0.02), causing or worsening LOS F (V/C > 1.00)."

The CMP impact criteria apply for analysis of both intersection and freeway monitoring locations.

12.1 Intersections

The following CMP intersection monitoring locations in the project vicinity have been identified:

CMP Station	Intersection
No. 131	Rosemead Boulevard/Valley Boulevard
No. 146	Rosemead Boulevard/Las Tunas Drive

The CMP TIA guidelines require that intersection monitoring locations must be examined if the proposed project will add 50 or more trips during either the AM or PM weekday peak hours. The proposed project will not add 50 or more trips during either the weekday AM or PM peak hours (i.e., of adjacent street traffic) at either of the two CMP monitoring intersections in the project vicinity, which is stated in the CMP manual as the threshold criteria for a traffic impact assessment. Based on a review of the project trip generation summarized previously in *Table 8-1*, the project is forecast to result in the addition of at most 24 net new trips during the weekday AM peak hour and 36 net new trips during the weekday PM peak hour, which is below the CMP trip threshold of 50 trips. Therefore, no further review of potential impacts to intersection monitoring locations that are part of the CMP highway system is required.

12.2 Freeways

The following CMP freeway monitoring locations have been identified in the project vicinity:

CMP Station	Location
No. 1015	I-10 Freeway at Atlantic Boulevard
No. 1016	I-10 Freeway at Rosemead Boulevard

The CMP TIA guidelines require that freeway monitoring locations must be examined if the proposed project will add 150 or more trips (in either direction) during either the AM or PM weekday peak hours. The proposed project will not add 150 or more trips (in either direction) during either the weekday AM or PM peak hours to CMP freeway monitoring locations which is the threshold for preparing a traffic impact assessment, as stated in the CMP manual. As summarized in *Table 8-1,* the project is anticipated to generate at most a total of 15 net new inbound vehicle trips during the AM peak hour and a total of 21 net new outbound vehicle trips during the PM peak hour, which is well below the 150 trips threshold. Therefore, no further review of potential impacts to freeway monitoring locations that are part of the CMP highway system is required.

12.3 Transit Impact Review

As required by the *2010 Congestion Management Program for Los Angeles County*, a review has been made of the potential impacts of the project on transit service. As previously discussed in Section 5.5, existing transit service is provided in the vicinity of the proposed San Gabriel Self-Storage project.

The project trip generation, as shown in *Table 8-1*, was adjusted by values set forth in the CMP (i.e., person trips equal 1.4 times vehicle trips, and transit trips equal 3.5 percent of the total person trips) to estimate transit trip generation. Pursuant to the CMP guidelines, the proposed project is forecast to generate demand for approximately two net new transit trips during the weekday AM peak hour and two net new transit trips during the weekday PM peak hour. Over a 24-hour weekday period, the proposed project is forecast to generate demand for roughly 17 net new daily transit trips. The transit trip calculations are as follows:

- Weekday AM Peak Hour = $24 \times 1.4 \times 0.035 = 2$ Transit Trips
- Weekday PM Peak Hour = $36 \times 1.4 \times 0.035 = 2$ Transit Trips
- Weekday Daily Trips = $334 \times 1.4 \times 0.035 = 17$ Transit Trips

As shown in *Table 5-2,* three bus transit lines are provided adjacent to or in close proximity of the project site. As outlined in *Table 5-2*, under the "No. of Buses During Peak Hour" column, these transit lines provide services for an average (i.e., average of the directional number of

buses during the peak hours) of generally 15 buses during the AM peak hour and 17 buses during the PM peak hour. Therefore, based on the above calculated weekday AM and PM peak hour trips, this would correspond to no more than one additional transit rider per bus. It is anticipated that the existing transit service in the project area will adequately accommodate the increase in project-generated transit trips. Thus, given the low number of project-generated transit trips per bus, no project impacts on existing or future transit services in the project area are expected to occur as a result of the proposed project.

13.0 SUMMARY AND CONCLUSIONS

- ***Project Description*** – The proposed project consists of the development of a five-story neighborhood storage facility consisting of 190,232 gross square feet totaling 1,524 storage units. On the first two levels in the western portion of the building, artist studios/office space and a community art gallery totaling 9,126 square feet are planned fronting San Gabriel Boulevard. Completion and occupancy of the proposed San Gabriel Self-Storage project is expected by the end of year 2021.

- ***Vehicular Site Access*** – Vehicular access into and out of the project site will be provided via three access driveways: one on San Gabriel Boulevard, one on Commercial Avenue, and one on Gladys Avenue.

- ***Project Parking*** – A total of 50 at-grade parking spaces is planned to be provided within the project site. The City of San Gabriel Code parking requirement applied strictly to the proposed project description results in a requirement of 107 spaces. Thus, the project parking supply of 50 spaces would be 57 spaces less than the Code parking requirement. Application of the peak parking demand ratios derived from comparable sites to the proposed project yields a forecast peak parking demand of only 11 parking spaces (i.e., 0.007 spaces/occupied storage unit x 1,524 storage units = rounded to 11 spaces). It is concluded that the proposed parking supply for the self-storage component is sufficient to accommodate the empirically-derived peak parking demand of 11 vehicles.

- ***Study Scope –*** Three (3) intersections in the project vicinity were selected for detailed peak hour level of service analyses under existing and future conditions, without and with the proposed project traffic. The analysis focused on assessing potential traffic impacts during the AM and PM peak hours on a typical weekday.

- ***Project Trip Generation*** – The proposed project is expected to generate 24 net new vehicle trips (15 inbound trips and 9 outbound trips) during the weekday AM peak hour. During the weekday PM peak hour, the proposed project development is expected to generate 36 net new vehicle trips (15 inbound trips and 21 outbound trips). Over a 24-hour period, the proposed project development is forecast to generate an increase of approximately 334 net new daily trips during a typical weekday.

- ***Related Projects*** – The City of San Gabriel Community Development Department and the County of Los Angeles Department of Regional Planning were consulted to obtain the list of development projects (related projects) in the area. A total of 22 related projects was identified and considered as part of the cumulative traffic analysis.

- ***Traffic Impact Analysis*** – It is concluded that the proposed project is not expected to result in a significant project impact at any of the study intersections based on the City of San Gabriel's thresholds of significance used for evaluating traffic impacts.

- ***Project Driveway Vehicle Queuing Review*** – A vehicle queuing analysis was prepared for the project driveways on San Gabriel Boulevard and Commercial Avenue as well as at the San Gabriel Boulevard/Commercial Avenue intersection in order to evaluate the project's potential queuing impacts on the adjacent roadways. Based on the 95th percentile vehicle queues forecast for each of the analysis time periods, vehicular queuing issues are not expected at any of the proposed project access locations under the year 2021 future with project conditions.

- ***CMP Traffic Assessment*** – The results of the Los Angeles CMP traffic assessment indicated that the proposed project will not adversely affect any CMP arterial monitoring intersections or freeway monitoring locations. Therefore, no improvements/mitigation measures are required or recommended.

14.0 RECOMMENDATIONS

The following provides an overview of the recommended transportation improvement measures which are anticipated to address impacts to the local roadway network associated with the proposed project. Based on the sight distance analysis, it is proposed that red curb markings and signage be installed to prohibit on-street parking along the north side of Commercial Avenue between the adjacent property's driveway and the project driveway and along the east side of San Gabriel Boulevard between Commercial Avenue and the northern project site boundary. Additionally, a 25-foot roadway dedication along the west side of the Gladys Avenue along the project frontage will be required.

In accordance with the City's *Traffic Study Guidelines for Development Projects in the City of San Gabriel*, September 26, 2006, Transportation Demand Management (TDM) is a component to be addressed in the Transportation Study. However, as the project is below the established threshold, mandatory TDM measures are not required for the proposed project. As such, the Applicant will be encouraged to volunteer TDM opportunities to employees and patrons but any specific measures are not addressed in this study nor are they required.

APPENDIX A

PARKING DEMAND ANALYSIS DATA

Appendix Table A-1
SUMMARY OF PEAK PARKING RATIOS [1]
Existing Extra Space Self-Storage Facilities

Date	OBSERVED PEAK PARKING DEMAND SPACES	TOTAL UNITS UNITS	TOTAL OCCUPIED UNITS OCC. UNITS	PEAK PARKING RATIOS (PER OCC. UNIT) SPS/OCC. UNIT	PEAK PARKING RATIOS RATIOS APPLIED TO PROPOSED PROJECT OCC. UNITS	SPACES
Extra Space Storage, 2801 Thornton Avenue						
Saturday, March 16, 2019	3 [2]	468	452	0.007	1,524	11
Tuesday, March 19, 2019	3 [3]	468	452	0.007	1,524	11
Extra Space Storage, 175 W. Verdugo Avenue						
Saturday, March 16, 2019	6 [4]	973	916	0.007	1,524	11
Tuesday, March 19, 2019	3 [5]	973	916	0.003	1,524	5
Aggregate of Both Sites						
Saturday, March 16, 2019	9	1,441	1,368	0.007	1,524	11
Tuesday, March 19, 2019	6	1,441	1,368	0.004	1,524	6

[1] Based on parking accumulation surveys conducted by The Traffic Solution on Saturday, March 16 and Tuesday, March 19, 2019 at existing Extra Space Self-Storage facilities in the City of Burbank.
[2] The peak parking demand occurred at 10:00 AM and 11:00 AM on Saturday, March 16, 2019.
[3] The peak parking demand occurred at 10:30 AM and 5:30 PM on Tuesday, March 19, 2019.
[4] The peak parking demand occurred at 1:00 PM on Saturday, March 16, 2019.
[5] The peak parking demand occurred at 2:30 PM, 4:30 PM, and 5:30 PM on Tuesday, March 19, 2019.

APPENDIX B

MANUAL INTERSECTION TRAFFIC COUNT DATA – WEEKDAY AM AND PM PEAK PERIODS

CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : SanGabriel_Broadway
Site Code : 00000000
Start Date : 5/14/2019
Page No : 1

Groups Printed- Vehicles

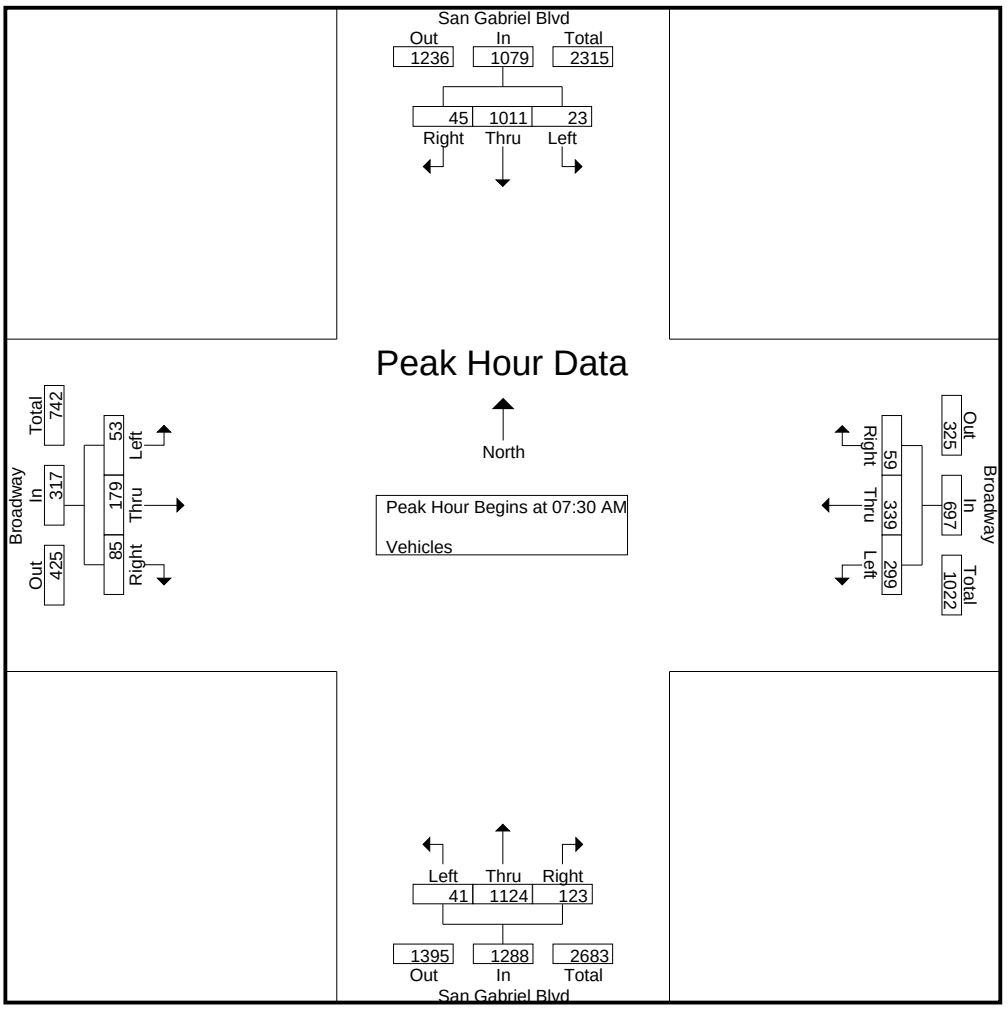
	San Gabriel Blvd Southbound			Broadway Westbound			San Gabriel Blvd Northbound			Broadway Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	2	179	3	31	40	13	6	210	15	5	19	10	533
07:15 AM	5	219	9	32	57	10	7	279	14	8	26	20	686
07:30 AM	6	261	10	56	85	14	7	283	15	10	31	31	809
07:45 AM	2	236	14	74	75	16	13	304	48	18	53	29	882
Total	15	895	36	193	257	53	33	1076	92	41	129	90	2910
08:00 AM	6	243	11	88	94	18	15	279	36	14	65	13	882
08:15 AM	9	271	10	81	85	11	6	258	24	11	30	12	808
08:30 AM	11	250	8	41	75	16	4	239	21	9	35	23	732
08:45 AM	5	272	12	36	47	11	8	239	12	9	28	17	696
Total	31	1036	41	246	301	56	33	1015	93	43	158	65	3118
04:00 PM	17	280	4	20	46	6	9	214	15	7	83	23	724
04:15 PM	14	271	3	20	43	6	6	226	20	13	90	17	729
04:30 PM	18	274	4	26	58	19	15	228	26	21	84	9	782
04:45 PM	19	310	5	19	53	15	7	235	34	7	93	4	801
Total	68	1135	16	85	200	46	37	903	95	48	350	53	3036
05:00 PM	14	303	3	28	55	13	6	179	34	18	99	11	763
05:15 PM	23	282	9	31	49	17	13	254	27	16	69	4	794
05:30 PM	20	244	7	28	66	13	13	232	36	11	107	8	785
05:45 PM	15	288	8	41	45	8	15	262	34	9	84	4	813
Total	72	1117	27	128	215	51	47	927	131	54	359	27	3155
Grand Total	186	4183	120	652	973	206	150	3921	411	186	996	235	12219
Apprch %	4.1	93.2	2.7	35.6	53.1	11.3	3.3	87.5	9.2	13.1	70.3	16.6	
Total %	1.5	34.2	1	5.3	8	1.7	1.2	32.1	3.4	1.5	8.2	1.9	

CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : SanGabriel_Broadway
Site Code : 00000000
Start Date : 5/14/2019
Page No : 2

	San Gabriel Blvd Southbound				Broadway Westbound				San Gabriel Blvd Northbound				Broadway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	6	261	10	277	56	85	14	155	7	283	15	305	10	31	**31**	72	809
07:45 AM	2	236	**14**	252	74	75	16	165	13	**304**	**48**	**365**	**18**	53	29	**100**	**882**
08:00 AM	6	243	11	260	**88**	**94**	**18**	**200**	**15**	279	36	330	14	**65**	13	92	882
08:15 AM	**9**	**271**	10	**290**	81	85	11	177	6	258	24	288	11	30	12	53	808
Total Volume	23	1011	45	1079	299	339	59	697	41	1124	123	1288	53	179	85	317	3381
% App. Total	2.1	93.7	4.2		42.9	48.6	8.5		3.2	87.3	9.5		16.7	56.5	26.8		
PHF	.639	.933	.804	.930	.849	.902	.819	.871	.683	.924	.641	.882	.736	.688	.685	.793	.958

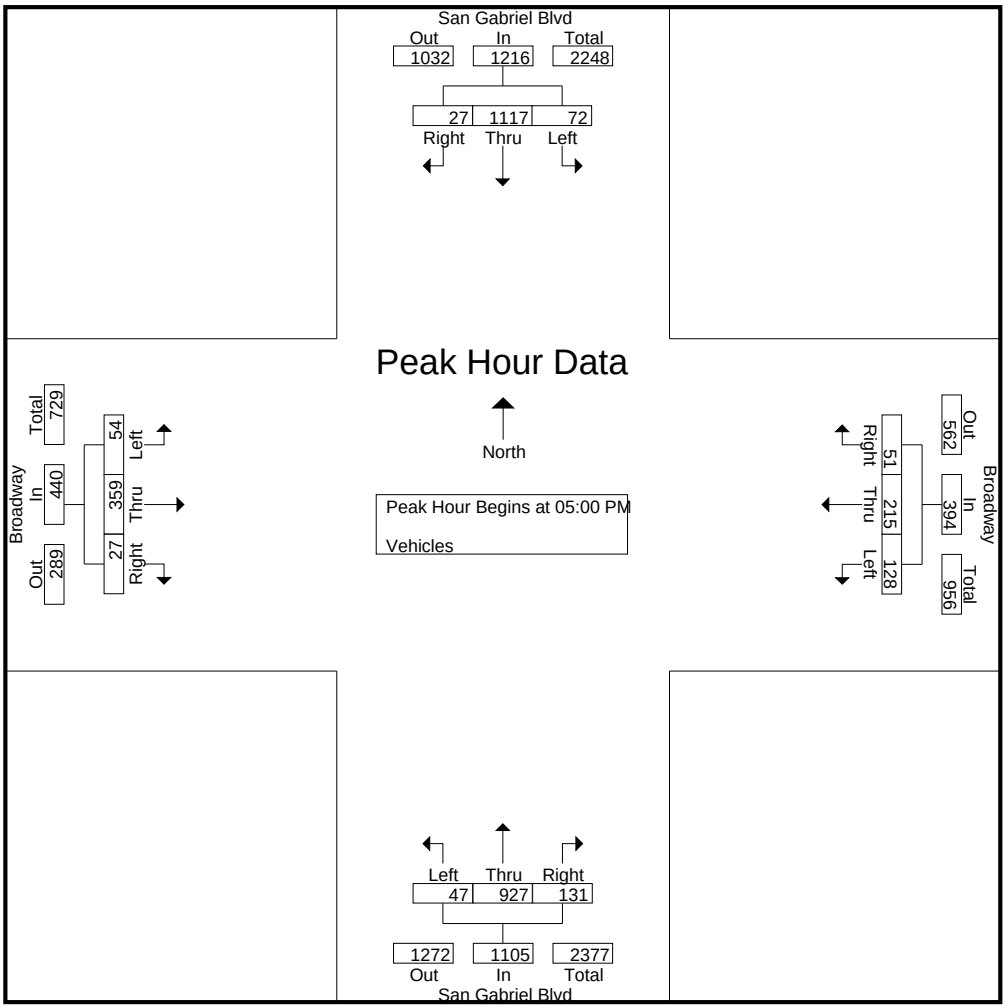


CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : SanGabriel_Broadway
Site Code : 00000000
Start Date : 5/14/2019
Page No : 3

	San Gabriel Blvd Southbound				Broadway Westbound				San Gabriel Blvd Northbound				Broadway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	14	**303**	3	**320**	28	55	13	96	6	179	34	219	**18**	99	**11**	**128**	763
05:15 PM	**23**	282	**9**	314	31	49	**17**	97	13	254	27	294	16	69	4	89	794
05:30 PM	20	244	7	271	28	**66**	13	**107**	13	232	**36**	281	11	**107**	8	126	785
05:45 PM	15	288	8	311	**41**	45	8	94	**15**	**262**	34	**311**	9	84	4	97	**813**
Total Volume	72	1117	27	1216	128	215	51	394	47	927	131	1105	54	359	27	440	3155
% App. Total	5.9	91.9	2.2		32.5	54.6	12.9		4.3	83.9	11.9		12.3	81.6	6.1		
PHF	.783	.922	.750	.950	.780	.814	.750	.921	.783	.885	.910	.888	.750	.839	.614	.859	.970



CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : SanGabriel_Broadway_BP
Site Code : 00000000
Start Date : 5/14/2019
Page No : 1

Groups Printed- Bikes & Peds

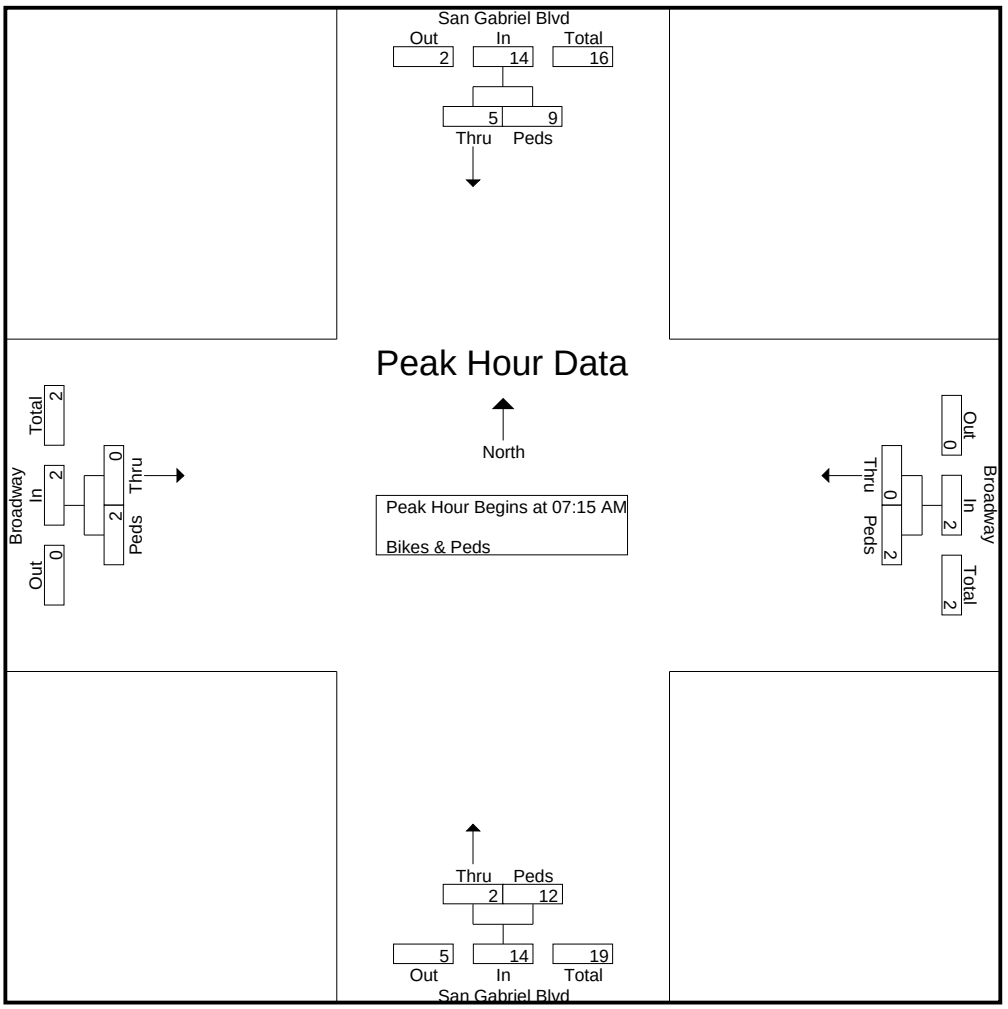
	San Gabriel Blvd Southbound		Broadway Westbound		San Gabriel Blvd Northbound		Broadway Eastbound		
Start Time	Bikes	Peds	Bikes	Peds	Bikes	Peds	Bikes	Peds	Int. Total
07:15 AM	0	2	0	1	0	2	0	0	5
07:30 AM	2	2	0	1	1	2	0	2	10
07:45 AM	3	3	0	0	0	1	0	0	7
Total	5	7	0	2	1	5	0	2	22
08:00 AM	0	2	0	0	1	7	0	0	10
08:15 AM	0	0	0	0	0	3	0	0	3
08:30 AM	0	0	0	0	0	1	0	0	1
08:45 AM	0	1	0	0	0	4	0	0	5
Total	0	3	0	0	1	15	0	0	19
04:00 PM	1	0	2	0	1	1	0	0	5
04:15 PM	1	1	0	1	0	0	0	0	3
04:30 PM	0	0	0	2	0	0	0	2	4
04:45 PM	0	1	0	0	0	3	0	0	4
Total	2	2	2	3	1	4	0	2	16
05:00 PM	1	1	0	0	2	1	0	0	5
05:15 PM	1	2	2	0	3	0	0	0	8
05:30 PM	0	0	0	2	0	1	0	2	5
05:45 PM	0	0	0	0	1	1	1	2	5
Total	2	3	2	2	6	3	1	4	23
Grand Total	9	15	4	7	9	27	1	8	80
Apprch %	37.5	62.5	36.4	63.6	25	75	11.1	88.9	
Total %	11.2	18.8	5	8.8	11.2	33.8	1.2	10	

CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : SanGabriel_Broadway_BP
Site Code : 00000000
Start Date : 5/14/2019
Page No : 2

	San Gabriel Blvd Southbound			Broadway Westbound			San Gabriel Blvd Northbound			Broadway Eastbound			
Start Time	Bikes	Peds	App. Total	Bikes	Peds	App. Total	Bikes	Peds	App. Total	Bikes	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	0	2	2	0	**1**	**1**	0	2	2	0	0	0	5
07:30 AM	2	2	4	0	1	1	**1**	2	3	0	**2**	**2**	**10**
07:45 AM	**3**	**3**	**6**	0	0	0	0	1	1	0	0	0	7
08:00 AM	0	2	2	0	0	0	1	**7**	**8**	0	0	0	10
Total Volume	5	9	14	0	2	2	2	12	14	0	2	2	32
% App. Total	35.7	64.3		0	100		14.3	85.7		0	100		
PHF	.417	.750	.583	.000	.500	.500	.500	.429	.438	.000	.250	.250	.800

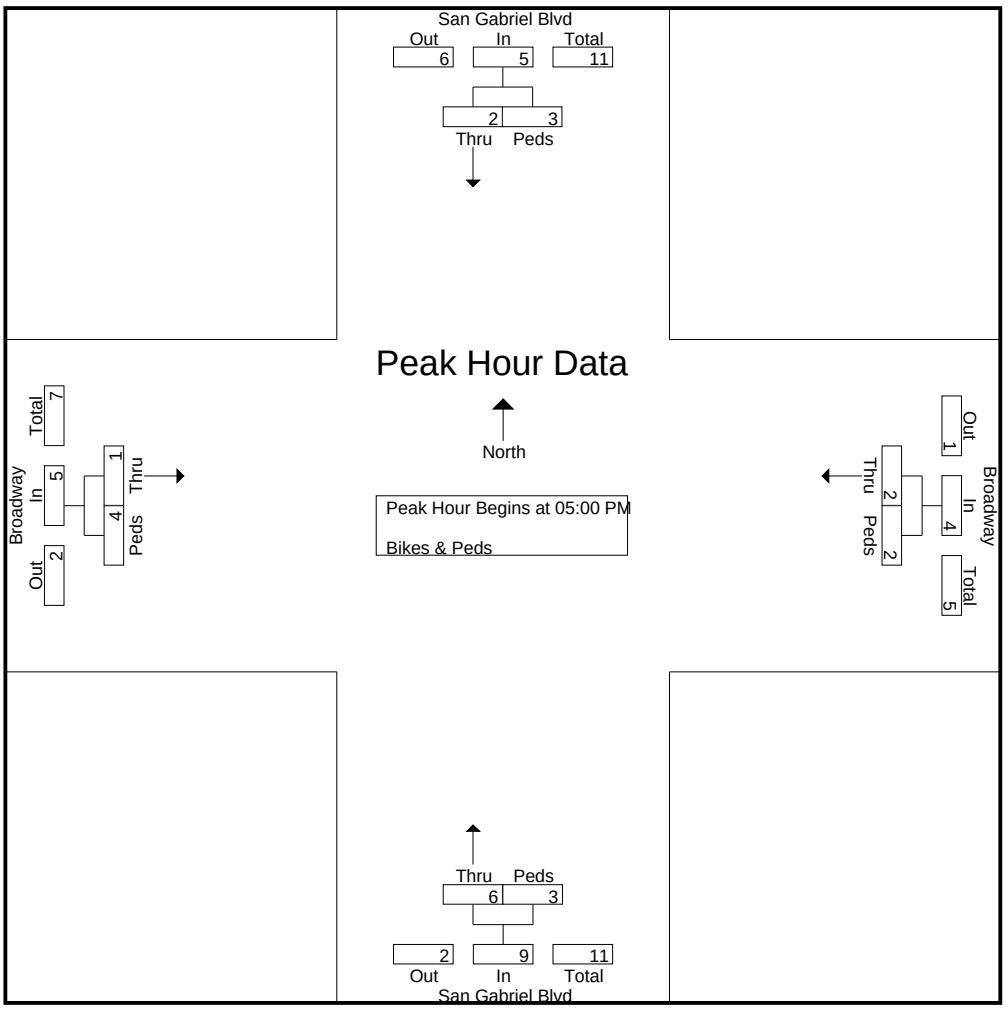


CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : SanGabriel_Broadway_BP
Site Code : 00000000
Start Date : 5/14/2019
Page No : 3

	San Gabriel Blvd Southbound			Broadway Westbound			San Gabriel Blvd Northbound			Broadway Eastbound			
Start Time	Bikes	Peds	App. Total	Bikes	Peds	App. Total	Bikes	Peds	App. Total	Bikes	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	**1**	1	2	0	0	0	2	**1**	**3**	0	0	0	5
05:15 PM	1	**2**	**3**	**2**	0	**2**	**3**	0	3	0	0	0	**8**
05:30 PM	0	0	0	0	**2**	2	0	1	1	0	**2**	2	5
05:45 PM	0	0	0	0	0	0	1	1	2	**1**	2	**3**	5
Total Volume	2	3	5	2	2	4	6	3	9	1	4	5	23
% App. Total	40	60		50	50		66.7	33.3		20	80		
PHF	.500	.375	.417	.250	.250	.500	.500	.750	.750	.250	.500	.417	.719



CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : SanGabriel_Commercial
Site Code : 00000000
Start Date : 5/14/2019
Page No : 1

Groups Printed- Vehicles

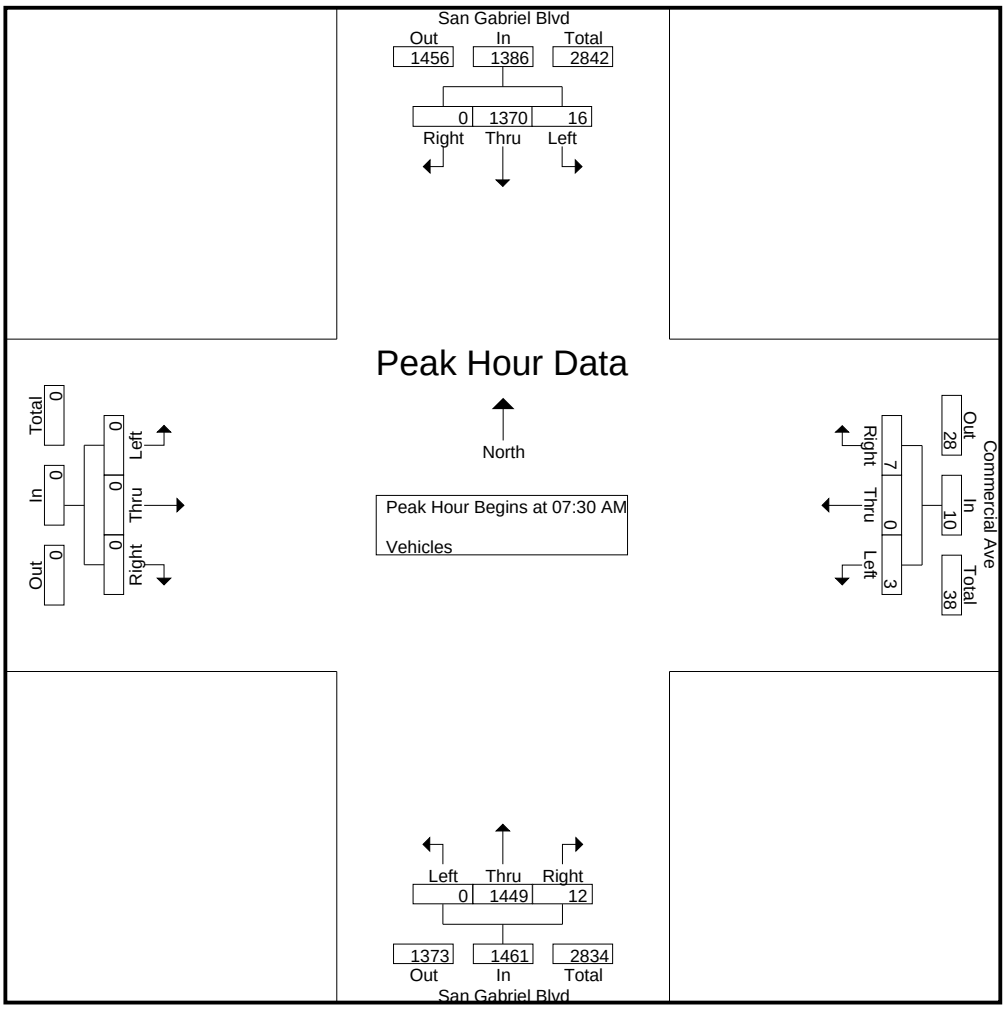
	San Gabriel Blvd Southbound			Commercial Ave Westbound			San Gabriel Blvd Northbound			Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	3	214	0	1	0	0	0	295	2	0	0	0	515
07:15 AM	3	280	0	2	0	3	0	349	1	0	0	0	638
07:30 AM	1	356	0	2	0	1	0	359	4	0	0	0	723
07:45 AM	2	353	0	0	0	3	0	392	1	0	0	0	751
Total	9	1203	0	5	0	7	0	1395	8	0	0	0	2627
08:00 AM	6	319	0	1	0	1	0	411	3	0	0	0	741
08:15 AM	7	342	0	0	0	2	0	287	4	0	0	0	642
08:30 AM	2	284	0	4	0	1	0	284	7	0	0	0	582
08:45 AM	2	311	0	3	0	2	0	295	5	0	0	0	618
Total	17	1256	0	8	0	6	0	1277	19	0	0	0	2583
04:00 PM	1	353	0	1	0	4	0	243	1	0	0	0	603
04:15 PM	3	305	0	1	0	3	0	293	3	0	0	0	608
04:30 PM	9	284	0	1	0	3	0	301	2	0	0	0	600
04:45 PM	7	322	0	1	0	8	0	292	2	0	0	0	632
Total	20	1264	0	4	0	18	0	1129	8	0	0	0	2443
05:00 PM	5	335	0	2	0	8	0	241	2	0	0	0	593
05:15 PM	2	327	0	2	0	6	0	334	3	0	0	0	674
05:30 PM	8	271	0	2	0	6	0	299	1	0	0	0	587
05:45 PM	8	330	0	2	0	7	0	327	0	0	0	0	674
Total	23	1263	0	8	0	27	0	1201	6	0	0	0	2528
Grand Total	69	4986	0	25	0	58	0	5002	41	0	0	0	10181
Apprch %	1.4	98.6	0	30.1	0	69.9	0	99.2	0.8	0	0	0	
Total %	0.7	49	0	0.2	0	0.6	0	49.1	0.4	0	0	0	

CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : SanGabriel_Commercial
Site Code : 00000000
Start Date : 5/14/2019
Page No : 2

	San Gabriel Blvd Southbound				Commercial Ave Westbound				San Gabriel Blvd Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	1	**356**	0	**357**	**2**	0	1	**3**	0	359	**4**	363	0	0	0	0	723
07:45 AM	2	353	0	355	0	0	**3**	3	0	392	1	393	0	0	0	0	**751**
08:00 AM	6	319	0	325	1	0	1	2	0	**411**	3	**414**	0	0	0	0	741
08:15 AM	**7**	342	0	349	0	0	2	2	0	287	4	291	0	0	0	0	642
Total Volume	16	1370	0	1386	3	0	7	10	0	1449	12	1461	0	0	0	0	2857
% App. Total	1.2	98.8	0		30	0	70		0	99.2	0.8		0	0	0		
PHF	.571	.962	.000	.971	.375	.000	.583	.833	.000	.881	.750	.882	.000	.000	.000	.000	.951

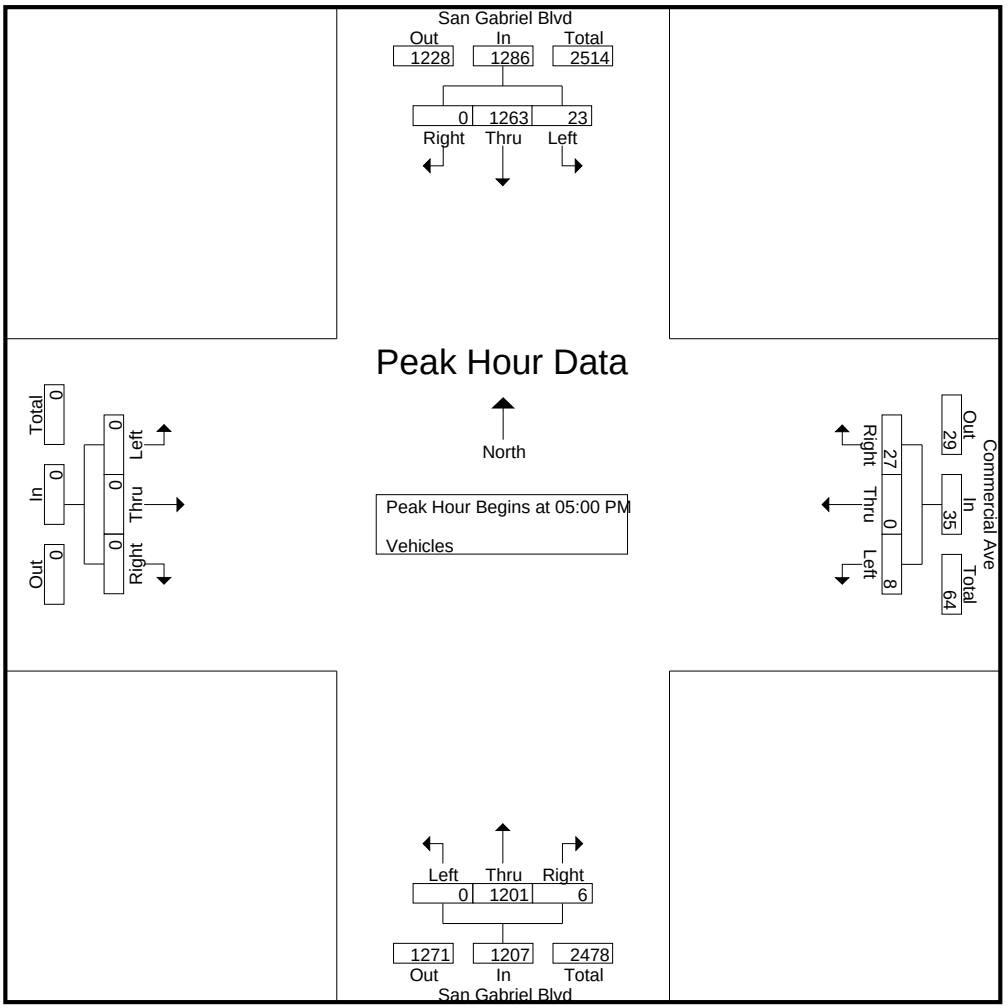


CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : SanGabriel_Commercial
Site Code : 00000000
Start Date : 5/14/2019
Page No : 3

	San Gabriel Blvd Southbound				Commercial Ave Westbound				San Gabriel Blvd Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	5	**335**	0	**340**	**2**	0	**8**	**10**	0	241	2	243	0	0	0	0	593
05:15 PM	2	327	0	329	2	0	6	8	0	**334**	**3**	**337**	0	0	0	0	**674**
05:30 PM	**8**	271	0	279	2	0	6	8	0	299	1	300	0	0	0	0	587
05:45 PM	8	330	0	338	2	0	7	9	0	327	0	327	0	0	0	0	674
Total Volume	23	1263	0	1286	8	0	27	35	0	1201	6	1207	0	0	0	0	2528
% App. Total	1.8	98.2	0		22.9	0	77.1		0	99.5	0.5		0	0	0		
PHF	.719	.943	.000	.946	1.00	.000	.844	.875	.000	.899	.500	.895	.000	.000	.000	.000	.938



CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : SanGabriel_Commercial_BP
Site Code : 00000000
Start Date : 5/14/2019

Groups Printed- Bikes & Peds

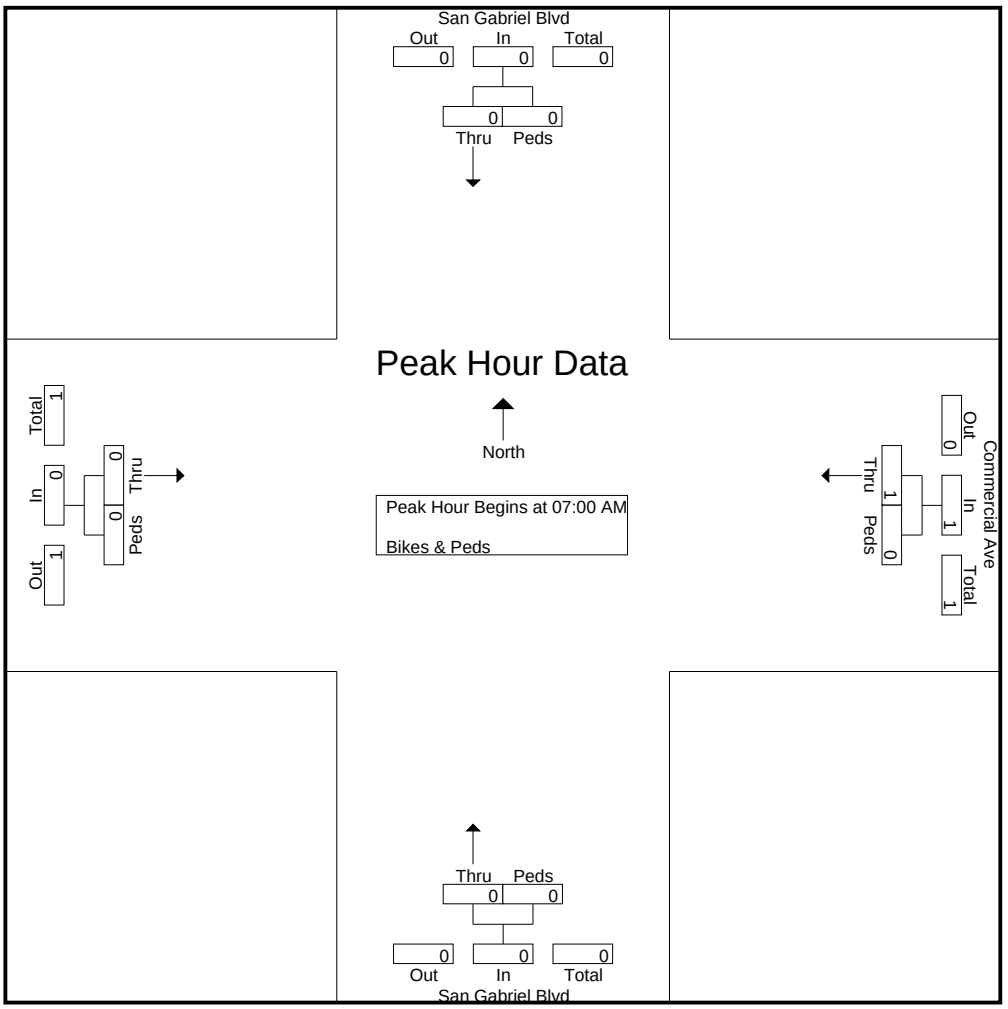
	San Gabriel Blvd Southbound		Commercial Ave Westbound		San Gabriel Blvd Northbound		Eastbound		
Start Time	Bikes	Peds	Bikes	Peds	Bikes	Peds	Bikes	Peds	Int. Total
07:00 AM	0	0	1	0	0	0	0	0	1
Total	0	0	1	0	0	0	0	0	1
08:45 AM	0	1	0	0	0	0	0	0	1
Total	0	1	0	0	0	0	0	0	1
04:30 PM	0	1	0	0	0	0	0	0	1
04:45 PM	2	0	5	0	0	0	0	0	7
Total	2	1	5	0	0	0	0	0	8
05:00 PM	0	1	0	2	0	0	0	0	3
05:30 PM	0	1	0	0	0	0	0	0	1
Total	0	2	0	2	0	0	0	0	4
Grand Total	2	4	6	2	0	0	0	0	14
Apprch %	33.3	66.7	75	25	0	0	0	0	
Total %	14.3	28.6	42.9	14.3	0	0	0	0	

CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : SanGabriel_Commercial_BP
Site Code : 00000000
Start Date : 5/14/2019
Page No : 2

	San Gabriel Blvd Southbound			Commercial Ave Westbound			San Gabriel Blvd Northbound			Eastbound			
Start Time	Bikes	Peds	App. Total	Bikes	Peds	App. Total	Bikes	Peds	App. Total	Bikes	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	0	0	0	**1**	0	**1**	0	0	0	0	0	0	**1**
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	1	0	1	0	0	0	0	0	0	1
% App. Total	0	0		100	0		0	0		0	0		
PHF	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.250

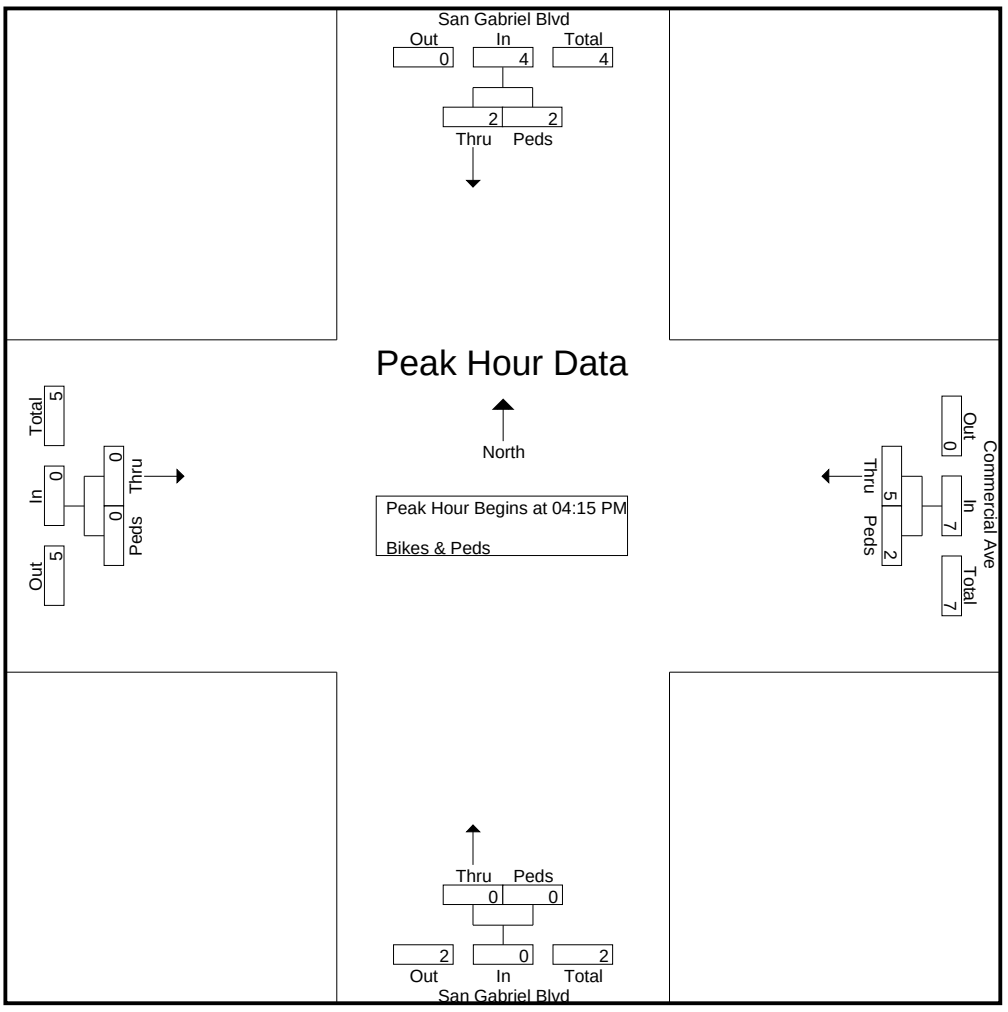


CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : SanGabriel_Commercial_BP
Site Code : 00000000
Start Date : 5/14/2019
Page No : 3

	San Gabriel Blvd Southbound			Commercial Ave Westbound			San Gabriel Blvd Northbound			Eastbound			
Start Time	Bikes	Peds	App. Total	Bikes	Peds	App. Total	Bikes	Peds	App. Total	Bikes	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	**1**	1	0	0	0	0	0	0	0	0	0	1
04:45 PM	**2**	0	**2**	**5**	0	**5**	0	0	0	0	0	0	**7**
05:00 PM	0	1	1	0	**2**	2	0	0	0	0	0	0	3
Total Volume	2	2	4	5	2	7	0	0	0	0	0	0	11
% App. Total	50	50		71.4	28.6		0	0		0	0		
PHF	.250	.500	.500	.250	.250	.350	.000	.000	.000	.000	.000	.000	.393



CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : SanGabriel_ElMonte
Site Code : 00000000
Start Date : 5/14/2019
Page No : 1

Groups Printed- Vehicles

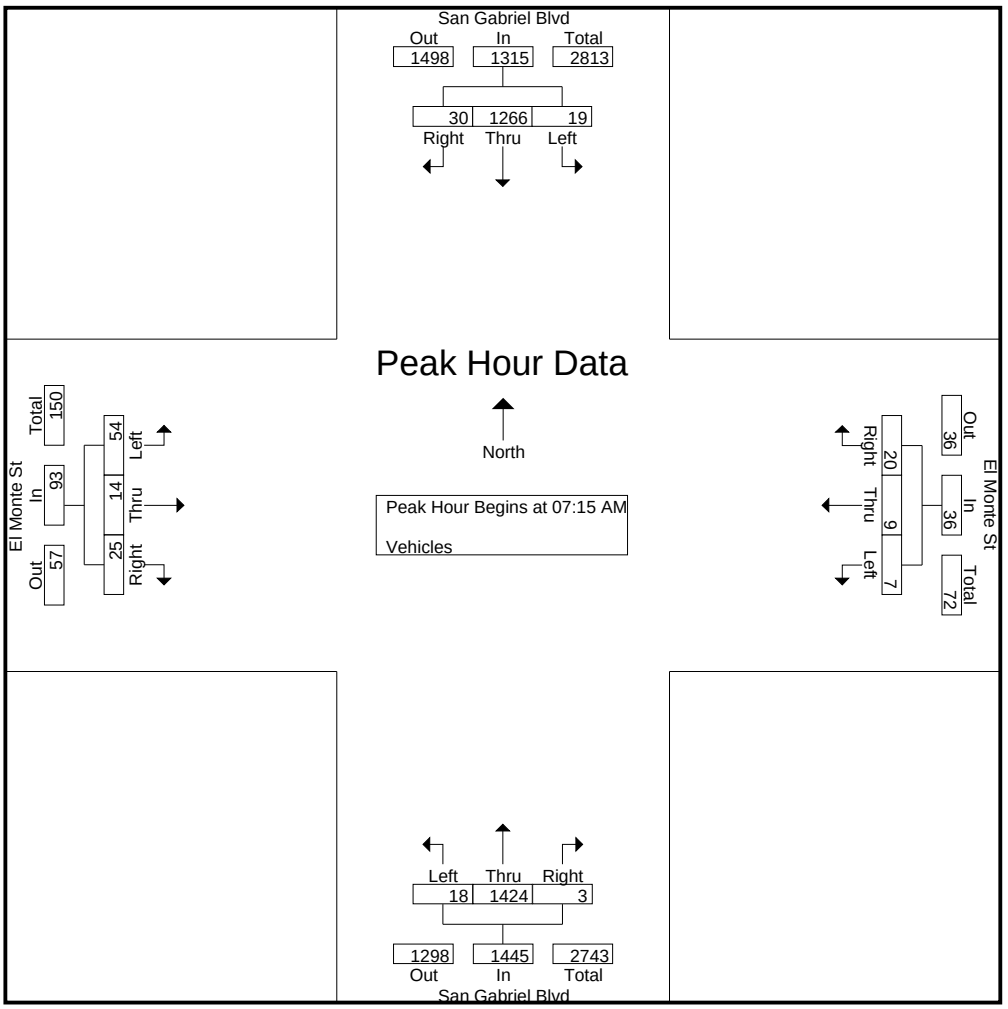
	San Gabriel Blvd Southbound			El Monte St Westbound			San Gabriel Blvd Northbound			El Monte St Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	205	4	2	3	4	3	292	0	4	0	2	519
07:15 AM	0	286	3	2	3	3	5	342	1	9	1	6	661
07:30 AM	4	346	5	2	0	6	2	335	0	8	4	8	720
07:45 AM	8	336	14	2	4	6	7	358	0	23	6	5	769
Total	12	1173	26	8	10	19	17	1327	1	44	11	21	2669
08:00 AM	7	298	8	1	2	5	4	389	2	14	3	6	739
08:15 AM	4	323	10	5	0	5	3	247	1	12	1	4	615
08:30 AM	3	295	4	3	5	11	8	299	1	7	2	8	646
08:45 AM	0	323	3	4	1	4	2	272	1	8	2	4	624
Total	14	1239	25	13	8	25	17	1207	5	41	8	22	2624
04:00 PM	15	346	10	1	3	2	5	278	3	6	1	2	672
04:15 PM	13	302	12	2	2	5	9	290	1	11	2	5	654
04:30 PM	12	284	3	3	1	3	9	329	2	6	1	4	657
04:45 PM	6	306	5	1	3	3	2	288	3	7	4	7	635
Total	46	1238	30	7	9	13	25	1185	9	30	8	18	2618
05:00 PM	14	324	12	1	3	3	5	266	5	8	1	10	652
05:15 PM	7	333	9	2	6	3	4	329	2	13	10	6	724
05:30 PM	8	308	6	0	2	8	11	335	0	8	4	7	697
05:45 PM	10	328	2	1	2	3	8	326	1	15	5	6	707
Total	39	1293	29	4	13	17	28	1256	8	44	20	29	2780
Grand Total	111	4943	110	32	40	74	87	4975	23	159	47	90	10691
Apprch %	2.1	95.7	2.1	21.9	27.4	50.7	1.7	97.8	0.5	53.7	15.9	30.4	
Total %	1	46.2	1	0.3	0.4	0.7	0.8	46.5	0.2	1.5	0.4	0.8	

CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : SanGabriel_ElMonte
Site Code : 00000000
Start Date : 5/14/2019
Page No : 2

	San Gabriel Blvd Southbound				El Monte St Westbound				San Gabriel Blvd Northbound				El Monte St Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	286	3	289	**2**	3	3	8	5	342	1	348	9	1	6	16	661
07:30 AM	4	**346**	5	355	2	0	**6**	8	2	335	0	337	8	4	**8**	20	720
07:45 AM	**8**	336	**14**	**358**	2	**4**	6	**12**	**7**	358	0	365	**23**	**6**	5	**34**	**769**
08:00 AM	7	298	8	313	1	2	5	8	4	**389**	**2**	**395**	14	3	6	23	739
Total Volume	19	1266	30	1315	7	9	20	36	18	1424	3	1445	54	14	25	93	2889
% App. Total	1.4	96.3	2.3		19.4	25	55.6		1.2	98.5	0.2		58.1	15.1	26.9		
PHF	.594	.915	.536	.918	.875	.563	.833	.750	.643	.915	.375	.915	.587	.583	.781	.684	.939

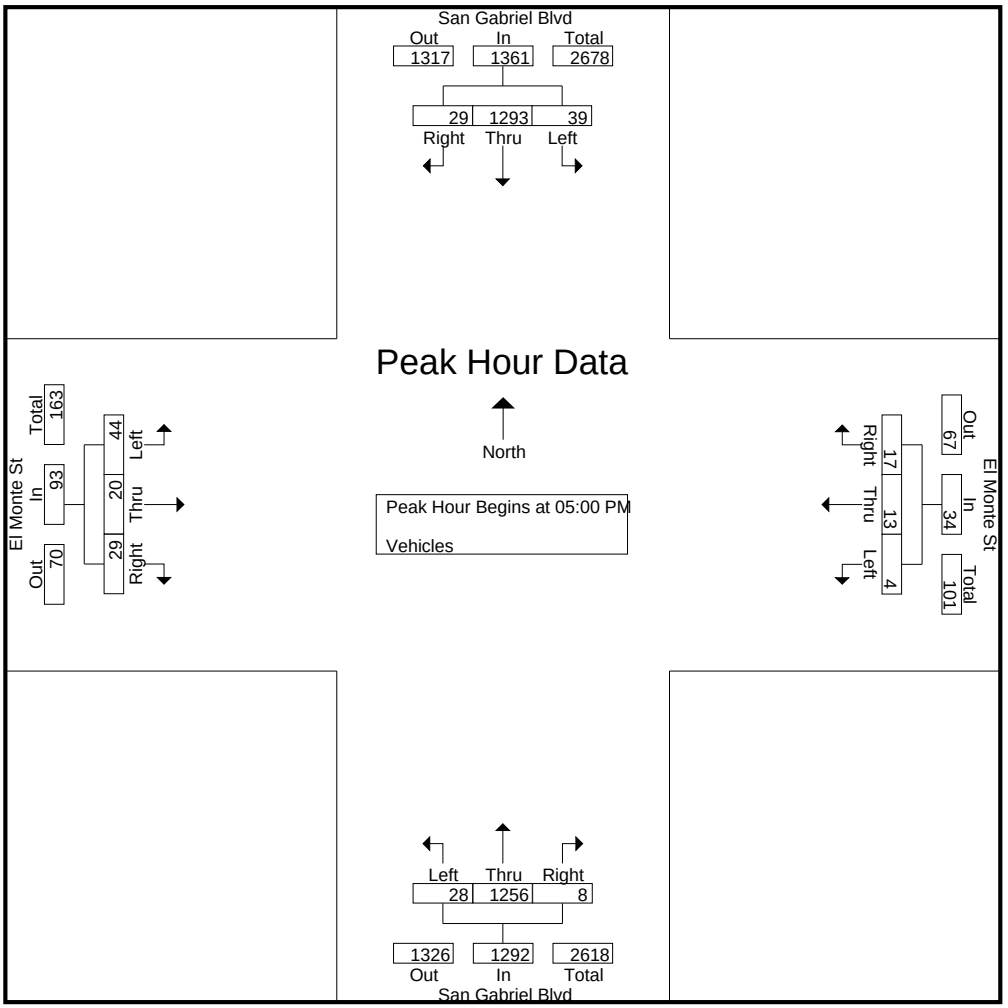


CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : SanGabriel_ElMonte
Site Code : 00000000
Start Date : 5/14/2019
Page No : 3

	San Gabriel Blvd Southbound				El Monte St Westbound				San Gabriel Blvd Northbound				El Monte St Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**14**	324	**12**	**350**	1	3	3	7	5	266	**5**	276	8	1	**10**	19	652
05:15 PM	7	**333**	9	349	**2**	**6**	3	**11**	4	329	2	335	13	**10**	6	**29**	**724**
05:30 PM	8	308	6	322	0	2	**8**	10	**11**	**335**	0	**346**	8	4	7	19	697
05:45 PM	10	328	2	340	1	2	3	6	8	326	1	335	**15**	5	6	26	707
Total Volume	39	1293	29	1361	4	13	17	34	28	1256	8	1292	44	20	29	93	2780
% App. Total	2.9	95	2.1		11.8	38.2	50		2.2	97.2	0.6		47.3	21.5	31.2		
PHF	.696	.971	.604	.972	.500	.542	.531	.773	.636	.937	.400	.934	.733	.500	.725	.802	.960



CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : SanGabriel_ElMonte_BP
Site Code : 00000000
Start Date : 5/14/2019
Page No : 1

Groups Printed- Bikes & Peds

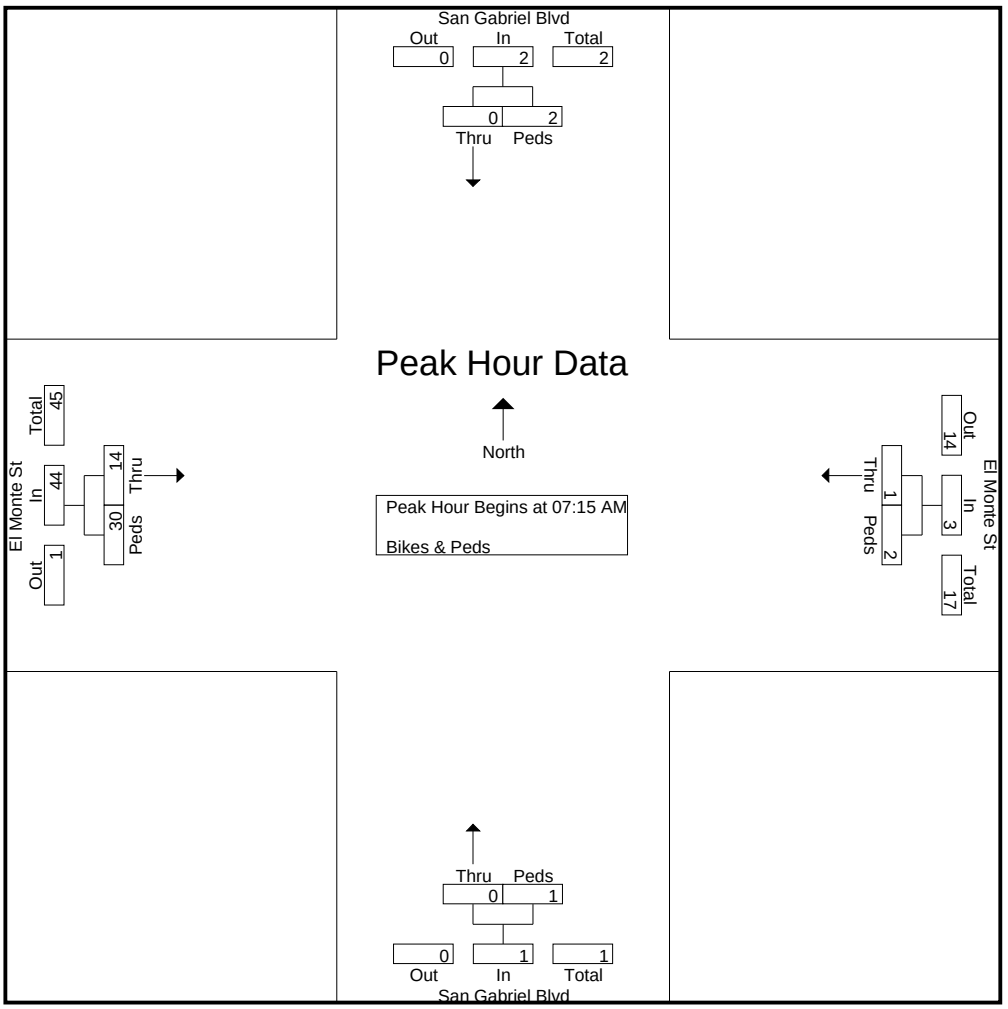
	San Gabriel Blvd Southbound		El Monte St Westbound		San Gabriel Blvd Northbound		El Monte St Eastbound		
Start Time	Bikes	Peds	Bikes	Peds	Bikes	Peds	Bikes	Peds	Int. Total
07:00 AM	0	0	0	0	0	0	1	1	2
07:15 AM	0	1	0	0	0	0	0	9	10
07:30 AM	0	0	1	2	0	0	5	15	23
07:45 AM	0	1	0	0	0	1	8	4	14
Total	0	2	1	2	0	1	14	29	49
08:00 AM	0	0	0	0	0	0	1	2	3
08:15 AM	0	1	0	3	0	1	1	3	9
08:30 AM	0	2	0	1	0	1	1	4	9
08:45 AM	0	0	1	1	0	0	0	0	2
Total	0	3	1	5	0	2	3	9	23
04:00 PM	0	1	2	0	0	1	2	5	11
04:15 PM	0	0	1	1	0	1	0	0	3
04:30 PM	0	0	2	1	0	0	0	3	6
04:45 PM	0	1	4	1	0	0	1	0	7
Total	0	2	9	3	0	2	3	8	27
05:00 PM	0	1	0	1	0	0	2	1	5
05:30 PM	0	0	0	3	0	0	1	4	8
05:45 PM	0	0	0	0	0	0	0	5	5
Total	0	1	0	4	0	0	3	10	18
Grand Total	0	8	11	14	0	5	23	56	117
Apprch %	0	100	44	56	0	100	29.1	70.9	
Total %	0	6.8	9.4	12	0	4.3	19.7	47.9	

CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : SanGabriel_ElMonte_BP
Site Code : 00000000
Start Date : 5/14/2019
Page No : 2

	San Gabriel Blvd Southbound			El Monte St Westbound			San Gabriel Blvd Northbound			El Monte St Eastbound			
Start Time	Bikes	Peds	App. Total	Bikes	Peds	App. Total	Bikes	Peds	App. Total	Bikes	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	0	**1**	**1**	0	0	0	0	0	0	0	9	9	10
07:30 AM	0	0	0	**1**	**2**	**3**	0	0	0	5	**15**	**20**	**23**
07:45 AM	0	1	1	0	0	0	0	**1**	**1**	**8**	4	12	14
08:00 AM	0	0	0	0	0	0	0	0	0	1	2	3	3
Total Volume	0	2	2	1	2	3	0	1	1	14	30	44	50
% App. Total	0	100		33.3	66.7		0	100		31.8	68.2		
PHF	.000	.500	.500	.250	.250	.250	.000	.250	.250	.438	.500	.550	.543

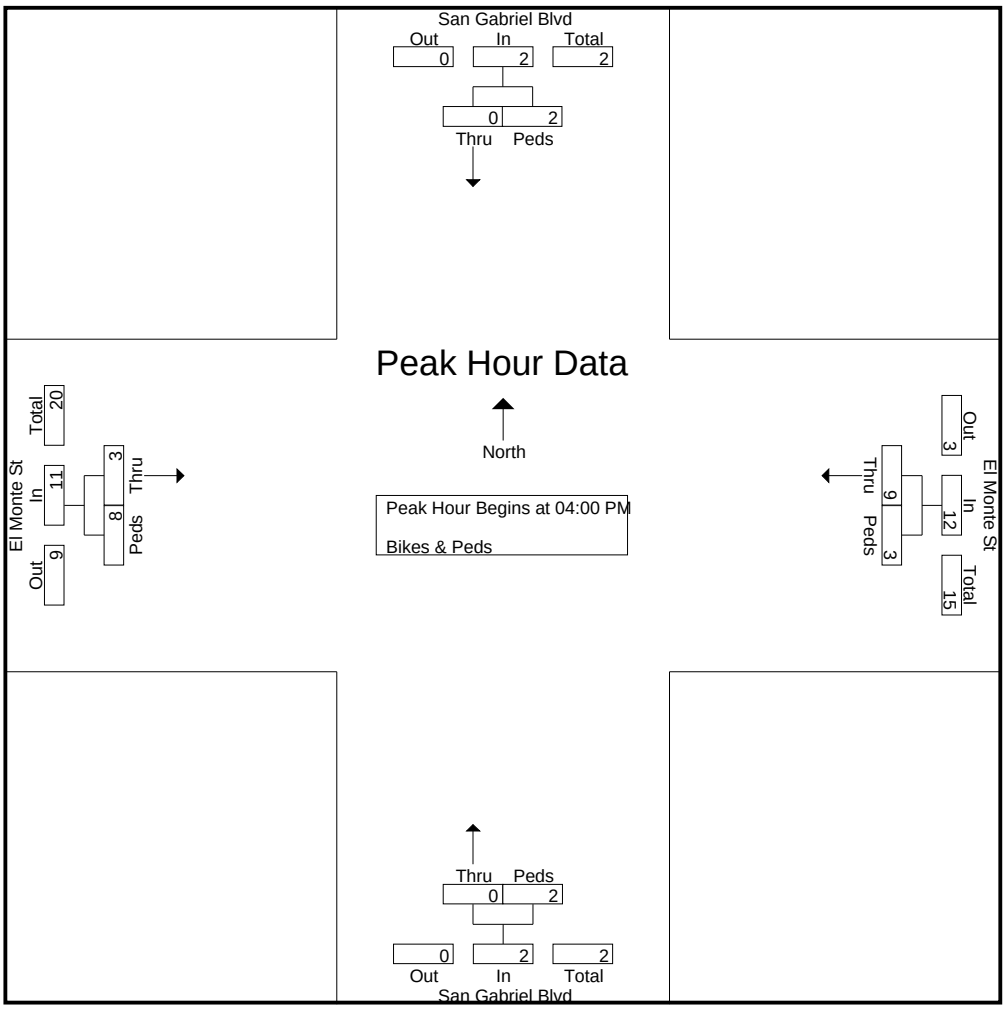


CITY TRAFFIC COUNTERS

WWW.CTCOUNTERS.COM

File Name : SanGabriel_ElMonte_BP
Site Code : 00000000
Start Date : 5/14/2019
Page No : 3

	San Gabriel Blvd Southbound			El Monte St Westbound			San Gabriel Blvd Northbound			El Monte St Eastbound			
Start Time	Bikes	Peds	App. Total	Bikes	Peds	App. Total	Bikes	Peds	App. Total	Bikes	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	0	**1**	**1**	2	0	2	0	**1**	**1**	**2**	**5**	**7**	**11**
04:15 PM	0	0	0	1	**1**	2	0	1	1	0	0	0	3
04:30 PM	0	0	0	2	1	3	0	0	0	0	3	3	6
04:45 PM	0	1	1	**4**	1	**5**	0	0	0	1	0	1	7
Total Volume	0	2	2	9	3	12	0	2	2	3	8	11	27
% App. Total	0	100		75	25		0	100		27.3	72.7		
PHF	.000	.500	.500	.563	.750	.600	.000	.500	.500	.375	.400	.393	.614



APPENDIX C

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

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

INTERSECTION CAPACITY UTILIZATION (ICU) DESCRIPTION

Level of Service is a term used to describe prevailing conditions and their effect on traffic. Broadly interpreted, the Levels of Service concept denotes any one of a number of differing combinations of operating conditions which may occur as a roadway is accommodating various traffic volumes. Level of Service is a qualitative measure of the effect of such factors as travel speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience.

Six Levels of Service, A through F, have been defined in the 1965 *Highway Capacity Manual*, published by the Transportation Research Board. Level of Service A describes a condition of free flow, with low traffic volumes and relatively high speeds, while Level of Service F describes forced traffic flow at low speeds with jammed conditions and queues which cannot clear during the green phases.

The Intersection Capacity Utilization (ICU) method of intersection capacity analysis has been used in our studies. It directly relates traffic demand and available capacity for key intersection movements, regardless of present signal timing, The capacity per hour of green time for each approach is calculated based on the methods of the *Highway Capacity Manual*. The proportion of total signal time needed by each key movement is determined and compared to the total time available (100 percent of the hour). The result of summing the requirements of the conflicting key movements plus an allowance for clearance times is expressed as a decimal fraction. Conflicting key traffic movements are those opposing movements whose combined green time requirements are greatest.

The resulting ICU represents the proportion of the total hour required to accommodate intersection demand volumes if the key conflicting traffic movements are operating at capacity. Other movements may be operating near capacity, or may be operating at significantly better levels. The ICU may be translated to a Level of Service as tabulated below.

The Levels of Service (abbreviated from the *Highway Capacity Manual*) are listed here with their corresponding ICU and Load Factor equivalents. Load Factor is that proportion of the signal cycles during the peak hour which are fully loaded; i.e. when all of the vehicles waiting at the beginning of green are not able to clear on that green phase.

Intersection Capacity Utilization Characteristics

Level of Service	Load Factor	Equivalent ICU
A	0.0	0.00 - 0.60
B	0.0 - 0.1	0.61 - 0.70
C	0.1 - 0.3	0.71 - 0.80
D	0.3 - 0.7	0.81 - 0.90
E	0.7 - 1.0	0.91 - 1.00
F	Not Applicable	Not Applicable

SERVICE LEVEL A
There are no loaded cycles and few are even close to loaded at this service level. No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.

SERVICE LEVEL B
This level represents stable operation where an occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel restricted within platoons of vehicles.

SERVICE LEVEL C
At this level stable operation continues. Loading is still intermittent but more frequent than at Level B. Occasionally drivers may have to wait through more than one red signal indication and backups may develop behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so.

SERVICE LEVEL D
This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak hour, but enough cycles with lower demand occur to permit periodic clearance of queues, thus preventing excessive backups. Drivers frequently have to wait through more than one red signal. This level is the lower limit of acceptable operation to most drivers.

SERVICE LEVEL E
This represents near capacity and capacity operation. At capacity (ICU = 1.0) it represents the most vehicles that the particular intersection can accommodate. However, full utilization of every signal cycle is seldom attained no matter how great the demand. At this level all drivers wait through more than one red signal, and frequently through several.

SERVICE LEVEL F
Jammed conditions. Traffic backed up from a downstream location on one of the street restricts or prevents movement of traffic through the intersection under consideration.

LEVEL OF SERVICE FOR UNSIGNALIZED INTERSECTIONS

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

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

Level of Service Criteria for TWSC/AWSC Intersections

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

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

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

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

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

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

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

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

LINSCOTT, LAW & GREENSPAN, ENGINEERS
600 S. Lake Avenue, Ste 500, Pasadena 91106
(626) 796.2322 Fax (626) 792.0941

INTERSECTION CAPACITY UTILIZATION

San Gabriel Boulevard @ Broadway

N-S St: San Gabriel Boulevard
E-W St: Broadway
Project: San Gabriel Self-Storage Project/1-19-4340-1
File: ICU1

Peak hr: AM
Annual Growth: 0.82%

Date: 12/17/2019
Date of Count: 2019
Projection Year: 2021

	2019 EXISTING TRAFFIC			2019 EXISTING WITH PROJECT				2021 FUTURE PRE-PROJECT					2021 FUTURE WITH PROJECT			
Movement	1 Volume	2 Capacity	V/C Ratio	Added Volume	Total Volume	2 Capacity	V/C Ratio	Added Amb. Grow. Volume	Added Rel. Proj. Volume	Total Volume	2 Capacity	V/C Ratio	Added Volume	Total Volume	2 Capacity	V/C Ratio
NB Left	41	1600	0.026	0	41	1600	0.026	1	17	59	1600	0.037	0	59	1600	0.037
NB Thru	1124	3200	0.390 *	4	1128	3200	0.391 *	19	74	1217	3200	0.426 *	4	1221	3200	0.428 *
NB Right	123	0	0.000	1	124	0	0.000	2	22	147	0	0.000	1	148	0	0.000
SB Left	23	1600	0.014 *	0	23	1600	0.014 *	0	15	38	1600	0.024 *	0	38	1600	0.024 *
SB Thru	1011	3200	0.330	6	1017	3200	0.332	17	73	1101	3200	0.362	6	1107	3200	0.364
SB Right	45	0	0.000	0	45	0	0.000	1	11	57	0	0.000	0	57	0	0.000
EB Left	53	1600	0.033	0	53	1600	0.033	1	8	62	1600	0.039	0	62	1600	0.039
EB Thru	179	1600	0.165 *	0	179	1600	0.166 *	3	14	196	1600	0.186 *	0	196	1600	0.186 *
EB Right	85	0	0.000	1	86	0	0.000	1	15	101	0	0.000	1	102	0	0.000
WB Left	299	1600	0.187 *	2	301	1600	0.188 *	5	30	334	1600	0.209 *	2	336	1600	0.210 *
WB Thru	339	1600	0.249	0	339	1600	0.249	6	17	362	1600	0.269	0	362	1600	0.269
WB Right	59	0	0.000	0	59	0	0.000	1	9	69	0	0.000	0	69	0	0.000
Yellow Allowance			0.100 *				0.100 *					0.100 *				0.100 *
ICU			0.856				0.859					0.944				0.948
LOS			D				D					E				E

** Key conflicting movement as a part of ICU*
1 Counts conducted by: City Traffic Counters
2 Capacity expressed in veh/hour of green

LINSCOTT, LAW & GREENSPAN, ENGINEERS
600 S. Lake Avenue, Ste 500, Pasadena 91106
(626) 796.2322 Fax (626) 792.0941

INTERSECTION CAPACITY UTILIZATION

San Gabriel Boulevard @ Broadway

N-S St: San Gabriel Boulevard
E-W St: Broadway
Project: San Gabriel Self-Storage Project/1-19-4340-1
File: ICU1

Peak hr: PM
Annual Growth: 0.82%

Date: 12/17/2019
Date of Count: 2019
Projection Year: 2021

	2019 EXISTING TRAFFIC			2019 EXISTING WITH PROJECT				2021 FUTURE PRE-PROJECT					2021 FUTURE WITH PROJECT			
Movement	1 Volume	2 Capacity	V/C Ratio	Added Volume	Total Volume	2 Capacity	V/C Ratio	Added Amb. Grow. Volume	Added Rel. Proj. Volume	Total Volume	2 Capacity	V/C Ratio	Added Volume	Total Volume	2 Capacity	V/C Ratio
NB Left	47	1600	0.029 *	1	48	1600	0.030 *	1	36	84	1600	0.053 *	1	85	1600	0.053 *
NB Thru	927	3200	0.331	8	935	3200	0.334	15	108	1050	3200	0.381	8	1058	3200	0.384
NB Right	131	0	0.000	2	133	0	0.000	2	37	170	0	0.000	2	172	0	0.000
SB Left	72	1600	0.045	0	72	1600	0.045	1	13	86	1600	0.054	0	86	1600	0.054
SB Thru	1117	3200	0.358 *	6	1123	3200	0.359 *	18	96	1231	3200	0.397 *	6	1237	3200	0.398 *
SB Right	27	0	0.000	0	27	0	0.000	0	11	38	0	0.000	0	38	0	0.000
EB Left	54	1600	0.034	0	54	1600	0.034	1	14	69	1600	0.043	0	69	1600	0.043
EB Thru	359	1600	0.241 *	0	359	1600	0.242 *	6	25	390	1600	0.283 *	0	390	1600	0.284 *
EB Right	27	0	0.000	1	28	0	0.000	0	36	63	0	0.000	1	64	0	0.000
WB Left	128	1600	0.080 *	2	130	1600	0.081 *	2	46	176	1600	0.110 *	2	178	1600	0.111 *
WB Thru	215	1600	0.166	0	215	1600	0.166	4	21	240	1600	0.194	0	240	1600	0.194
WB Right	51	0	0.000	0	51	0	0.000	1	18	70	0	0.000	0	70	0	0.000
Yellow Allowance			0.100 *				0.100 *					0.100 *				0.100 *
ICU			0.808				0.813					0.942				0.947
LOS			D				D					E				E

** Key conflicting movement as a part of ICU*
1 Counts conducted by: City Traffic Counters
2 Capacity expressed in veh/hour of green

HCS7 Two-Way Stop-Control Report

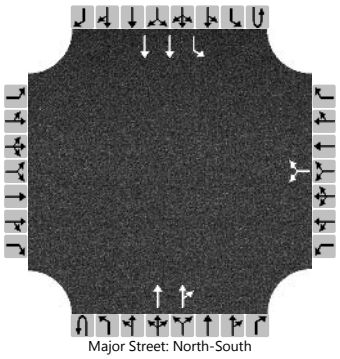
General Information

Analyst	DR
Agency/Co.	LLG Engineers
Date Performed	6/19/2019
Analysis Year	2019
Time Analyzed	AM PH Existing
Intersection Orientation	North-South
Project Description	San Gabriel Self-Storage/1-19-4340-1

Site Information

Intersection	Int-2
Jurisdiction	San Gabriel
East/West Street	Commercial Avenue
North/South Street	San Gabriel Boulevard
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	2	0	0	1	2	0
Configuration							LR				T	TR		L	T	
Volume (veh/h)						3		7			1449	12	0	16	1370	
Percent Heavy Vehicles (%)						3		3					3	3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						6.86		6.96						4.16		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							11							17		
Capacity, c (veh/h)							78							405		
v/c Ratio							0.14							0.04		
95% Queue Length, Q_{95} (veh)							0.5							0.1		
Control Delay (s/veh)							58.8							14.3		
Level of Service (LOS)							F							B		
Approach Delay (s/veh)						58.8							0.2			
Approach LOS						F										

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Two-Way Stop-Control Report

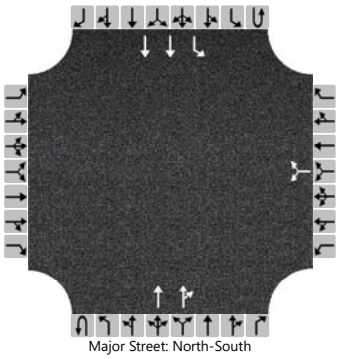
General Information

Analyst	DR
Agency/Co.	LLG Engineers
Date Performed	12/17/19
Analysis Year	2019
Time Analyzed	AM PH Existing + Project
Intersection Orientation	North-South
Project Description	San Gabriel Self-Storage/1-19-4340-1

Site Information

Intersection	Int-2
Jurisdiction	San Gabriel
East/West Street	Commercial Avenue
North/South Street	San Gabriel Boulevard
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	2	0	0	1	2	0
Configuration							LR				T	TR		L	T	
Volume (veh/h)						7		12			1453	15	0	24	1370	
Percent Heavy Vehicles (%)						3		3					3	3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						6.86		6.96						4.16		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							21							26		
Capacity, c (veh/h)							63							402		
v/c Ratio							0.33							0.06		
95% Queue Length, Q_{95} (veh)							1.2							0.2		
Control Delay (s/veh)							88.5							14.6		
Level of Service (LOS)							F							B		
Approach Delay (s/veh)						88.5							0.3			
Approach LOS						F										

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Two-Way Stop-Control Report

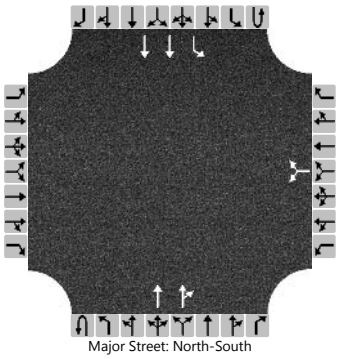
General Information

Analyst	DR
Agency/Co.	LLG Engineers
Date Performed	6/19/2019
Analysis Year	2019
Time Analyzed	PM PH Existing
Intersection Orientation	North-South
Project Description	San Gabriel Self-Storage/1-19-4340-1

Site Information

Intersection	Int-2
Jurisdiction	San Gabriel
East/West Street	Commercial Avenue
North/South Street	San Gabriel Boulevard
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	2	0	0	1	2	0
Configuration							LR				T	TR		L	T	
Volume (veh/h)						8		27			1201	6	0	23	1263	
Percent Heavy Vehicles (%)						3		3					3	3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						6.86		6.96						4.16		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							38							25		
Capacity, c (veh/h)							145							518		
v/c Ratio							0.26							0.05		
95% Queue Length, Q_{95} (veh)							1.0							0.2		
Control Delay (s/veh)							38.5							12.3		
Level of Service (LOS)							E							B		
Approach Delay (s/veh)						38.5							0.2			
Approach LOS						E										

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Two-Way Stop-Control Report

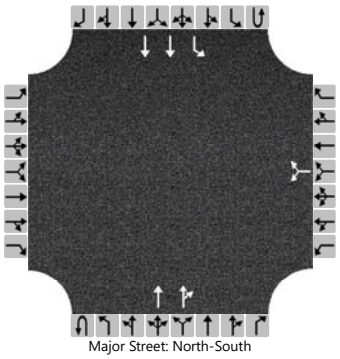
General Information

Analyst	DR
Agency/Co.	LLG Engineers
Date Performed	12/17/19
Analysis Year	2019
Time Analyzed	PM PH Existing + Project
Intersection Orientation	North-South
Project Description	San Gabriel Self-Storage/1-19-4340-1

Site Information

Intersection	Int-2
Jurisdiction	San Gabriel
East/West Street	Commercial Avenue
North/South Street	San Gabriel Boulevard
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	2	0	0	1	2	0
Configuration							LR				T	TR		L	T	
Volume (veh/h)						17		39			1205	9	0	31	1263	
Percent Heavy Vehicles (%)						3		3					3	3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						6.86		6.96						4.16		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							61							34		
Capacity, c (veh/h)							114							514		
v/c Ratio							0.53							0.07		
95% Queue Length, Q_{95} (veh)							2.5							0.2		
Control Delay (s/veh)							67.8							12.5		
Level of Service (LOS)							F							B		
Approach Delay (s/veh)						67.8							0.3			
Approach LOS						F										

Copyright © 2019 University of Florida. All Rights Reserved.

LINSCOTT, LAW & GREENSPAN, ENGINEERS
600 S. Lake Avenue, Ste 500, Pasadena 91106
(626) 796.2322 Fax (626) 792.0941

INTERSECTION CAPACITY UTILIZATION

San Gabriel Boulevard @ Commercial Avenue

N-S St: San Gabriel Boulevard
E-W St: Commercial Avenue
Project: San Gabriel Self-Storage Project/1-19-4340-1
File: ICU2

Peak hr: AM
Annual Growth: 0.82%

Date: 12/17/2019
Date of Count: 2019
Projection Year: 2021

	2019 EXISTING TRAFFIC			2019 EXISTING WITH PROJECT				2021 FUTURE PRE-PROJECT					2021 FUTURE WITH PROJECT			
Movement	1 Volume	2 Capacity	V/C Ratio	Added Volume	Total Volume	2 Capacity	V/C Ratio	Added Amb. Grow. Volume	Added Rel. Proj. Volume	Total Volume	2, 3 Capacity	V/C Ratio	Added Volume	Total Volume	2, 3 Capacity	V/C Ratio
NB Left	0	0	0.000	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0.000
NB Thru	1449	3200	0.457 *	4	1453	3200	0.459 *	24	113	1586	3200	0.499 *	4	1590	3200	0.502 *
NB Right	12	0	0.000	3	15	0	0.000	0	0	12	0	0.000	3	15	0	0.000
SB Left	16	1600	0.010 *	8	24	1600	0.015 *	0	0	16	1600	0.010 *	8	24	1600	0.015 *
SB Thru	1370	3200	0.428	0	1370	3200	0.428	23	117	1510	3200	0.472	0	1510	3200	0.472
SB Right	0	0	0.000	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0.000
EB Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0	0.000 *	0	0	0	0.000 *
EB Thru	0	0	0.000	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0.000
EB Right	0	0	0.000	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0.000
WB Left	3	0	0.002	4	7	0	0.004	0	0	3	1600	0.002	4	7	1600	0.004
WB Thru	0	1600	0.006 *	0	0	1600	0.012 *	0	0	0	0	0.000	0	0	0	0.000
WB Right	7	0	0.000	5	12	0	0.000	0	0	7	1600	0.004 *	5	12	1600	0.008 *
Yellow Allowance			0.100 *				0.100 *					0.100 *				0.100 *
ICU			0.573				0.586					0.614				0.624
LOS			A				A					B				B

** Key conflicting movement as a part of ICU*
1 Counts conducted by: City Traffic Counters
2 Capacity expressed in veh/hour of green
3 Future traffic signal installation with one left-turn lane and one right-turn lane for the westbound approach.

LINSCOTT, LAW & GREENSPAN, ENGINEERS
600 S. Lake Avenue, Ste 500, Pasadena 91106
(626) 796.2322 Fax (626) 792.0941

INTERSECTION CAPACITY UTILIZATION

San Gabriel Boulevard @ Commercial Avenue

N-S St: San Gabriel Boulevard
E-W St: Commercial Avenue
Project: San Gabriel Self-Storage Project/1-19-4340-1
File: ICU2

Peak hr: PM
Annual Growth: 0.82%

Date: 12/17/2019
Date of Count: 2019
Projection Year: 2021

	2019 EXISTING TRAFFIC			2019 EXISTING WITH PROJECT				2021 FUTURE PRE-PROJECT					2021 FUTURE WITH PROJECT			
Movement	1 Volume	2 Capacity	V/C Ratio	Added Volume	Total Volume	2 Capacity	V/C Ratio	Added Amb. Grow. Volume	Added Rel. Proj. Volume	Total Volume	2, 3 Capacity	V/C Ratio	Added Volume	Total Volume	2, 3 Capacity	V/C Ratio
NB Left	0	0	0.000 *	0	0	0	0.000	0	0	0	0	0.000 *	0	0	0	0.000
NB Thru	1201	3200	0.377	4	1205	3200	0.379 *	20	182	1403	3200	0.440	4	1407	3200	0.443 *
NB Right	6	0	0.000	3	9	0	0.000	0	0	6	0	0.000	3	9	0	0.000
SB Left	23	1600	0.014	8	31	1600	0.019 *	0	0	23	1600	0.014	8	31	1600	0.019 *
SB Thru	1263	3200	0.395 *	0	1263	3200	0.395	21	177	1461	3200	0.457 *	0	1461	3200	0.457
SB Right	0	0	0.000	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0.000
EB Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0	0.000 *	0	0	0	0.000 *
EB Thru	0	0	0.000	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0.000
EB Right	0	0	0.000	0	0	0	0.000	0	0	0	0	0.000	0	0	0	0.000
WB Left	8	0	0.005	9	17	0	0.011	0	0	8	1600	0.005	9	17	1600	0.011
WB Thru	0	1600	0.022 *	0	0	1600	0.035 *	0	0	0	0	0.000	0	0	0	0.000
WB Right	27	0	0.000	12	39	0	0.000	0	0	27	1600	0.017 *	12	39	1600	0.024 *
Yellow Allowance			0.100 *				0.100 *					0.100 *				0.100 *
ICU			0.517				0.534					0.573				0.586
LOS			A				A					A				A

** Key conflicting movement as a part of ICU*
1 Counts conducted by: City Traffic Counters
2 Capacity expressed in veh/hour of green
3 Future traffic signal installation with one left-turn lane and one right-turn lane for the westbound approach.

LINSCOTT, LAW & GREENSPAN, ENGINEERS
600 S. Lake Avenue, Ste 500, Pasadena 91106
(626) 796.2322 Fax (626) 792.0941

INTERSECTION CAPACITY UTILIZATION

San Gabriel Boulevard @ El Monte Street

N-S St: San Gabriel Boulevard
E-W St: El Monte Street
Project: San Gabriel Self-Storage Project/1-19-4340-1
File: ICU3

Peak hr: AM
Annual Growth: 0.82%

Date: 12/17/2019
Date of Count: 2019
Projection Year: 2021

	2019 EXISTING TRAFFIC			2019 EXISTING WITH PROJECT				2021 FUTURE PRE-PROJECT					2021 FUTURE WITH PROJECT			
Movement	1 Volume	2 Capacity	V/C Ratio	Added Volume	Total Volume	2 Capacity	V/C Ratio	Added Amb. Grow. Volume	Added Rel. Proj. Volume	Total Volume	2 Capacity	V/C Ratio	Added Volume	Total Volume	2 Capacity	V/C Ratio
NB Left	18	1600	0.011	0	18	1600	0.011	0	0	18	1600	0.011	0	18	1600	0.011
NB Thru	1424	3200	0.446 *	6	1430	3200	0.448 *	23	108	1555	3200	0.489 *	6	1561	3200	0.491 *
NB Right	3	0	0.000	0	3	0	0.000	0	7	10	0	0.000	0	10	0	0.000
SB Left	19	1600	0.012 *	0	19	1600	0.012 *	0	4	23	1600	0.014 *	0	23	1600	0.014 *
SB Thru	1266	3200	0.405	4	1270	3200	0.406	21	107	1394	3200	0.447	4	1398	3200	0.448
SB Right	30	0	0.000	0	30	0	0.000	0	6	36	0	0.000	0	36	0	0.000
EB Left	54	1600	0.034 *	1	55	1600	0.034 *	1	5	60	1600	0.038 *	1	61	1600	0.038 *
EB Thru	14	1600	0.024	0	14	1600	0.024	0	1	15	1600	0.025	0	15	1600	0.025
EB Right	25	0	0.000	0	25	0	0.000	0	0	25	0	0.000	0	25	0	0.000
WB Left	7	1600	0.004	0	7	1600	0.004	0	8	15	1600	0.009	0	15	1600	0.009
WB Thru	9	1600	0.018 *	0	9	1600	0.018 *	0	1	10	1600	0.019 *	0	10	1600	0.019 *
WB Right	20	0	0.000	0	20	0	0.000	0	1	21	0	0.000	0	21	0	0.000
Yellow Allowance			0.100 *				0.100 *					0.100 *				0.100 *
ICU			0.610				0.612					0.660				0.663
LOS			B				B					B				B

** Key conflicting movement as a part of ICU*
1 Counts conducted by: City Traffic Counters
2 Capacity expressed in veh/hour of green

LINSCOTT, LAW & GREENSPAN, ENGINEERS
600 S. Lake Avenue, Ste 500, Pasadena 91106
(626) 796.2322 Fax (626) 792.0941

INTERSECTION CAPACITY UTILIZATION

San Gabriel Boulevard @ El Monte Street

N-S St: San Gabriel Boulevard
E-W St: El Monte Street
Project: San Gabriel Self-Storage Project/1-19-4340-1
File: ICU3

Peak hr: PM
Annual Growth: 0.82%

Date: 12/17/2019
Date of Count: 2019
Projection Year: 2021

	2019 EXISTING TRAFFIC			2019 EXISTING WITH PROJECT				2021 FUTURE PRE-PROJECT					2021 FUTURE WITH PROJECT			
Movement	1 Volume	2 Capacity	V/C Ratio	Added Volume	Total Volume	2 Capacity	V/C Ratio	Added Amb. Grow. Volume	Added Rel. Proj. Volume	Total Volume	2 Capacity	V/C Ratio	Added Volume	Total Volume	2 Capacity	V/C Ratio
NB Left	28	1600	0.018 *	0	28	1600	0.018 *	0	0	28	1600	0.018 *	0	28	1600	0.018 *
NB Thru	1256	3200	0.395	6	1262	3200	0.397	21	180	1457	3200	0.462	6	1463	3200	0.463
NB Right	8	0	0.000	0	8	0	0.000	0	12	20	0	0.000	0	20	0	0.000
SB Left	39	1600	0.024	0	39	1600	0.024	1	6	46	1600	0.029	0	46	1600	0.029
SB Thru	1293	3200	0.413 *	8	1301	3200	0.416 *	21	170	1484	3200	0.474 *	8	1492	3200	0.477 *
SB Right	29	0	0.000	1	30	0	0.000	0	3	32	0	0.000	1	33	0	0.000
EB Left	44	1600	0.028 *	1	45	1600	0.028 *	1	4	49	1600	0.031 *	1	50	1600	0.031 *
EB Thru	20	1600	0.031	0	20	1600	0.031	0	1	21	1600	0.031	0	21	1600	0.031
EB Right	29	0	0.000	0	29	0	0.000	0	0	29	0	0.000	0	29	0	0.000
WB Left	4	1600	0.003	0	4	1600	0.003	0	12	16	1600	0.010	0	16	1600	0.010
WB Thru	13	1600	0.019 *	0	13	1600	0.019 *	0	1	14	1600	0.019 *	0	14	1600	0.019 *
WB Right	17	0	0.000	0	17	0	0.000	0	0	17	0	0.000	0	17	0	0.000
Yellow Allowance			0.100 *				0.100 *					0.100 *				0.100 *
ICU			0.577				0.580					0.641				0.645
LOS			A				A					B				B

** Key conflicting movement as a part of ICU*
1 Counts conducted by: City Traffic Counters
2 Capacity expressed in veh/hour of green

APPENDIX D

VEHICLE QUEUING ANALYSIS

HCM DATA WORKSHEETS – WEEKDAY AM AND PM PEAK HOURS

HCS7 Two-Way Stop-Control Report

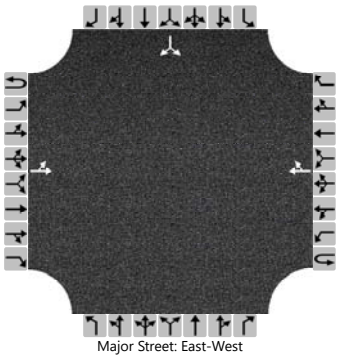
General Information

Analyst	GT
Agency/Co.	LLG Engineers
Date Performed	12/19/19
Analysis Year	2021
Time Analyzed	Future with Project AM
Intersection Orientation	East-West
Project Description	San Gabriel Self-Storage Project/1-19-4340-1

Site Information

Intersection	Project Dwy/Commercial Av
Jurisdiction	City of San Gabriel
East/West Street	Commercial Avenue
North/South Street	Project Driveway
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		11	28				10	0						0		9
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		12													9	
Capacity, c (veh/h)		1602													1068	
v/c Ratio		0.01													0.01	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		7.3													8.4	
Level of Service (LOS)		A													A	
Approach Delay (s/veh)		2.1												8.4		
Approach LOS														A		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Two-Way Stop-Control Report

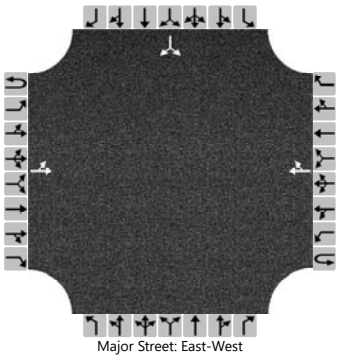
General Information

Analyst	GT
Agency/Co.	LLG Engineers
Date Performed	12/19/19
Analysis Year	2021
Time Analyzed	Future with Project PM
Intersection Orientation	East-West
Project Description	San Gabriel Self-Storage Project/1-19-4340-1

Site Information

Intersection	Project Dwy/Commercial Av
Jurisdiction	City of San Gabriel
East/West Street	Commercial Avenue
North/South Street	Project Driveway
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		11	29				35	0						0		21
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage																
	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

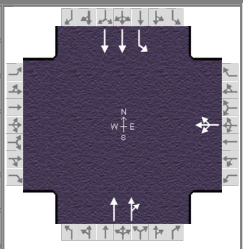
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		12													22	
Capacity, c (veh/h)		1567													1032	
v/c Ratio		0.01													0.02	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		7.3													8.6	
Level of Service (LOS)		A													A	
Approach Delay (s/veh)		2.1												8.6		
Approach LOS														A		

Copyright © 2019 University of Florida. All Rights Reserved.

HCS7 Signalized Intersection Results Summary

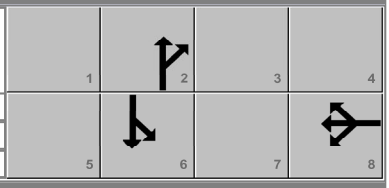
General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	GT	Analysis Date	Apr 30, 2020	Area Type	Other
Jurisdiction	City of San Gabriel	Time Period	Future with Project AM	PHF	0.95
Urban Street	San Gabriel Blvd	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	Commercial Ave	File Name	Int. 2 Future with Project AM.xus		
Project Description	San Gabriel Self-Storage Project/1-19-4340-1				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				7	0	12		1590	15	24	1510	

Signal Information			
Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	47.5	2.8	0.0	0.0	0.0	0.0	
Yellow	4.1	3.6	0.0	0.0	0.0	0.0	
Red	1.0	1.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2		6
Case Number				12.0		8.0		6.0
Phase Duration, s				7.4		52.6		52.6
Change Period, (*Y+R c*), s				4.6		5.1		5.1
Max Allow Headway (*MAH*), s				3.3		0.0		0.0
Queue Clearance Time (*g s*), s				2.7				
Green Extension Time (*g e*), s				0.0		0.0		0.0
Phase Call Probability				0.28				
Max Out Probability				0.00				

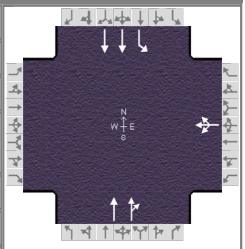
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18		2	12	1	6	
Adjusted Flow Rate (*v*), veh/h					20			845	844	25	1589	
Adjusted Saturation Flow Rate (*s*), veh/h/ln					1638			1870	1864	291	1781	
Queue Service Time (*g s*), s					0.7			24.5	10.4	3.5	10.1	
Cycle Queue Clearance Time (*g c*), s					0.7			24.5	10.4	28.1	10.1	
Green Ratio (*g/C*)					0.05			0.79	0.79	0.79	0.79	
Capacity (*c*), veh/h					77			1480	1475	231	2817	
Volume-to-Capacity Ratio (*X*)					0.258			0.571	0.572	0.109	0.564	
Back of Queue (*Q*), ft/ln (95 th percentile)					12.4			57.1	56.2	11.9	40	
Back of Queue (*Q*), veh/ln (95 th percentile)					0.5			2.2	2.2	0.5	1.6	
Queue Storage Ratio (*RQ*) (95 th percentile)					0.00			0.00	0.00	0.10	0.00	
Uniform Delay (*d 1*), s/veh					27.6			2.4	2.4	12.5	2.4	
Incremental Delay (*d 2*), s/veh					0.6			1.6	1.6	1.0	0.8	
Initial Queue Delay (*d 3*), s/veh					0.0			0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh					28.2			4.0	4.0	13.5	3.2	
Level of Service (LOS)					C			A	A	B	A	
Approach Delay, s/veh / LOS	0.0			28.2		C	4.0		A	3.4		A
Intersection Delay, s/veh / LOS	3.8						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.13	B	2.30	B	1.58	B	1.29	A
Bicycle LOS Score / LOS			0.52	A	1.88	B	1.82	B

Copyright © 2020 University of Florida, All Rights Reserved.

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	GT	Analysis Date	Apr 30, 2020	Area Type	Other
Jurisdiction	City of San Gabriel	Time Period	Future with Project PM	PHF	0.94
Urban Street	San Gabriel Blvd	Analysis Year	2021	Analysis Period	1> 17:00
Intersection	Commercial Ave	File Name	Int. 2 Future with Project PM.xus		
Project Description	San Gabriel Self-Storage Project/1-19-4340-1				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				17	0	39		1407	9	31	1461	

Signal Information			
Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

							1	2	3	4
Green	43.8	6.5	0.0	0.0	0.0	0.0	5	6	7	8
Yellow	4.1	3.6	0.0	0.0	0.0	0.0				
Red	1.0	1.0	0.0	0.0	0.0	0.0				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2		6
Case Number				12.0		8.0		6.0
Phase Duration, s				11.1		48.9		48.9
Change Period, ($Y+R_c$), s				4.6		5.1		5.1
Max Allow Headway (*MAH*), s				3.5		0.0		0.0
Queue Clearance Time (g_s), s				4.0				
Green Extension Time (g_e), s				0.1		0.0		0.0
Phase Call Probability				0.63				
Max Out Probability				0.00				

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18		2	12	1	6	
Adjusted Flow Rate (*v*), veh/h					60			754	753	33	1554	
Adjusted Saturation Flow Rate (*s*), veh/h/ln					1614			1870	1866	348	1781	
Queue Service Time (g_s), s					2.0			20.1	11.0	3.8	12.6	
Cycle Queue Clearance Time (g_c), s					2.0			20.1	11.0	23.9	12.6	
Green Ratio (*g/C*)					0.11			0.73	0.73	0.73	0.73	
Capacity (*c*), veh/h					176			1365	1361	257	2598	
Volume-to-Capacity Ratio (*X*)					0.339			0.552	0.553	0.128	0.598	
Back of Queue (*Q*), ft/ln (95 th percentile)					35.4			109.4	107.6	15	105.7	
Back of Queue (*Q*), veh/ln (95 th percentile)					1.4			4.3	4.3	0.6	4.2	
Queue Storage Ratio (*RQ*) (95 th percentile)					0.00			0.00	0.00	0.13	0.00	
Uniform Delay (d_1), s/veh					24.7			3.7	3.7	12.1	3.9	
Incremental Delay (d_2), s/veh					0.4			1.6	1.6	1.0	1.0	
Initial Queue Delay (d_3), s/veh					0.0			0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh					25.2			5.3	5.3	13.2	4.9	
Level of Service (LOS)					C			A	A	B	A	
Approach Delay, s/veh / LOS	0.0			25.2		C	5.3		A	5.1		A
Intersection Delay, s/veh / LOS	5.6						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.13	B	2.30	B	1.60	B	1.31	A
Bicycle LOS Score / LOS			0.59	A	1.73	B	1.80	B

Copyright © 2020 University of Florida, All Rights Reserved.

April 20, 2020

Ms. Alicia Gonzalez, Project Manager
MICHAEL BAKER INTERNATIONAL
5 Hutton Centre Drive, Suite 500
Santa Ana, CA 92707

RE: San Gabriel Self-Storage Project Vehicle Miles Travelled (VMT) Assessment
19249

Dear Ms. Gonzalez:

INTRODUCTION

Ganddini Group, Inc. is pleased to provide this Vehicle Miles Travelled (VTM) assessment for the San Gabriel Self-Storage Project located at 414 South Gabriel Avenue in the City of San Gabriel. The proposed project consists of a five-story neighborhood storage facility including of 190,232 gross square feet with a total of 1,524 storage units. Artist studios/office space and a community art gallery totaling 9,126 square feet are planned on the first two levels at the western portion of the building fronting San Gabriel Boulevard. A total of 50 at-grade parking spaces are planned to be provided as part of the proposed project. As part of the parking supply, the project will provide two handicap accessible spaces. Vehicular access to the site will be provided by consolidating the existing curb cuts into three driveways: one full access driveway on San Gabriel Boulevard, one full access driveway on Commercial Avenue, and an egress only driveway on Gladys Avenue.

BACKGROUND

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

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

VMT ASSESSMENT

The City of San Gabriel has not established VMT analysis procedures at this time; therefore, the project-related VMT impact has been assessed qualitatively based on guidance from the State's Technical Advisory and review of VMT policies established by early adopters. The Technical Advisory provides the following potential screening criteria for certain land development projects that may be presumed to result in a less than significant VMT impact:

- Local-serving retail less than 50,000 square feet, schools, daycare, student housing, etc.
- Small projects generating less than 110 trips per day.
- Residential and office projects located in areas with low-VMT.
- Projects near transit stations or major transit stop.
- Residential projects with a high percentage of affordable housing.

For mixed-use projects, the Technical Advisory recommends that lead agencies can evaluate each component of a mixed-use project independently and apply the thresholds of significance for each lane use (e.g., office and retail). Alternatively, a lead agency may consider only the project's dominant use. In the analysis of each use, a project should take credit for internal capture.

Table 1 shows the trip generation comparison of the two project components with the following two land uses that may be presumed to result in a less than significant VMT impact:

- Local-serving retail less than 50,000 square feet
- Small projects generating less than 110 trips per day

Presumption of Less Than Significant VMT Impact for Local Serving Retail

As noted in the Technical Advisory, new retail development typically redistributes shopping trips rather than creating new trips. By adding retail opportunities into the urban fabric and thereby improving proximity, local-serving retail tends to shorten trips and reduce VMT. Similarly, the proposed project would improve the proximity of self-storage facilities within the community, thereby shortening travel distances and reducing VMT.

Figure 1 shows a map of existing self-storage facilities in the project vicinity. As shown on Figure 1, the majority of existing self storage facilities are located south of the project site closer to Interstate 10. The proposed project is located further north and will improve proximity of self-storage facilities for the areas of northern San Gabriel, San Marino, Temple City and Arcadia. Therefore, the proposed self-storage facility is anticipated to shorten trips and will have VMT characteristics similar to a local-serving retail use.

Although the proposed self-storage component of the project is more than 50,000 square feet, much of the area is passive use for storage of personal items and the project generates much fewer trips than 50,000 square feet of retail use. As shown in Table 1, the proposed self-storage component of the proposed project is forecast to generate approximately 1,601 fewer daily vehicle trips than a 50,000 square foot local-serving retail development. Therefore, the self-storage component of the proposed project can be presumed to result in a less than significant VMT impact based on State guidance because it would reduce VMT by shortening trips, similar to local-serving retail developments.

Presumption of Less Than Significant VMT Impact for Small Projects

As noted in the Technical Advisory, CEQA Guidelines § 15301, subdivision (e)(2) provides a categorical exemption for existing facilities, including additions to existing structures of up to 10,000 square feet, so long as the project is in an area where public infrastructure is available to allow for maximum planned development and the project is not in an environmentally sensitive area. Typical project types for which trip generation increases relatively linearly with building footprint (i.e., general office building, single tenant office building, office park, and business park) generate or attract an additional 110-124 trips per 10,000 square feet. Therefore, absent substantial evidence otherwise, it is reasonable to conclude that the addition of 110 or fewer trips could be considered not to lead to a significant impact.

Additionally, early adopters of the VMT metric are using similar or slightly higher thresholds for small projects. The Cities of Santa Ana and San Jose, for example, have adopted a screening threshold for small infill projects based on 110 daily trips. The City of Los Angeles has established a screening threshold for projects that generate fewer than 250 net daily trips. The San Diego Section of the Institute of Transportation Engineers recommends a screening threshold as high as 1,000 daily trips for projects that are consistent with a General or Community Plan or 500 daily trips for projects that are inconsistent with a General or Community Plan.

As shown in Table 1, the office component of the proposed project is forecast to generate 89 daily vehicle trips. Therefore, the office component of the proposed project can be presumed to result in a less than significant VMT impact based on State guidance because it is forecast to generate fewer than 110 daily trips.

Other Considerations

The trip generation forecasts for the proposed project are conservative in that they do not take into account potential internal capture between the self-storage and the artist studio/office components of the proposed project. The project trip generation could be even lower if any artist studio/office space tenants also rent an on-site self-storage unit for storing extra supplies or equipment.

CONCLUSION

The self-storage component of the proposed project can be presumed to result in a less than significant VMT impact based on State guidance because it would reduce VMT by shortening trips, similar to local-serving retail developments. The office component of the proposed project can be presumed to result in a less than significant VMT impact based on State guidance because it is forecast to generate fewer than 110 daily trips. Overall, the proposed project is presumed to result in a less than significant VMT impact since each component is forecast to result in a less than significant impact.

We appreciate the opportunity to assist you on this project. Should you have any questions or if we can be of further assistance, please do not hesitate to call at (714) 795-3100.

Sincerely,

GANDDINI GROUP, INC.

Tom Huang, TE
Senior Traffic Engineer

Giancarlo Ganddini, TE, PTP
Principal

Table 1
Trip Generation Comparison with State-Recommended VMT Screening Criteria

Trip Generation Rates										
Project				AM Peak Hour			PM Peak Hour			Daily Rate
No.	Land Use	Code[1]	Unit[2]	In %	Out %	Rate	In %	Out %	Rate	
1	Mini-Warehouse / Self-Storage	ITE 151	TSF	60%	40%	0.10	47%	53%	0.17	1.51
2	General Office Building	ITE 710	TSF	86%	14%	1.16	16%	84%	1.15	9.74
3	Shopping Center / Retail	ITE 820	TSF	62%	38%	0.94	48%	52%	3.81	37.75

Trips Generated									
Project			AM Peak Hour			PM Peak Hour			Daily
No.	Land Use	Quantity[2]	In	Out	Total	In	Out	Total	
A	Mini-Warehouse / Self-Storage	190.232 TSF	11	8	19	15	17	32	287
	Shopping Center / Retail	50.000 TSF	29	18	47	92	99	191	1,888
	Trip Difference (Proposed Storage vs Local-Serving Retail <50 TSF)		-18	-10	-28	-77	-82	-159	-1,601
B	General Office Building	9.126 TSF	9	1	10	2	9	11	89
	Small Project Generating Less Than 110 Daily Trips								110
	Trip Difference (Proposed Office vs Small Project <110 Daily Trips)								-21

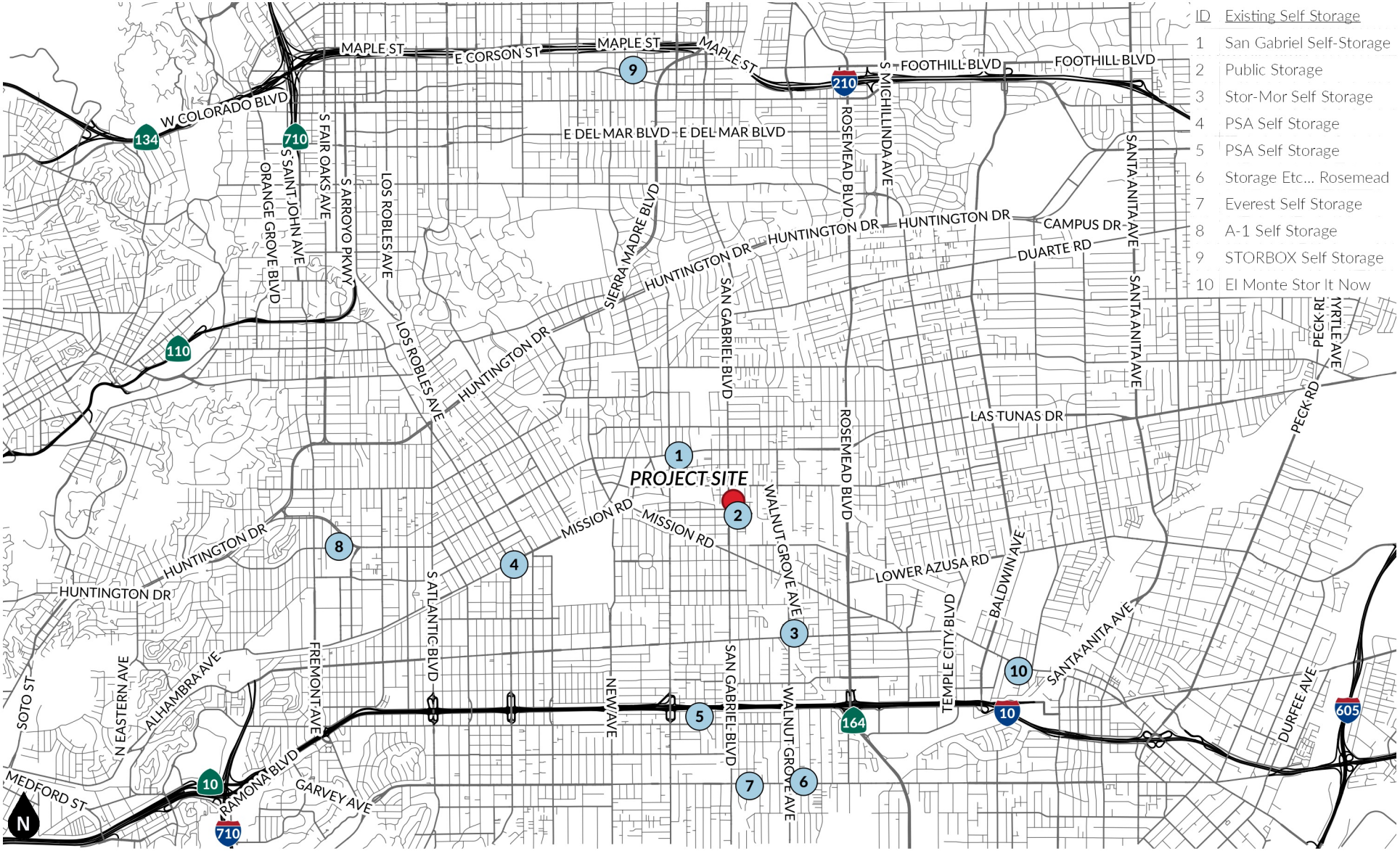
Notes:

(1) Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition, 2017.

(2) TSF = Thousand Square Feet

(3) Based on the State guidance, small infill development or those which serve the local community and have the potential to reduce VMTmay be presumed to result in a less than significant VMT impact. These projects include:

- Local-serving retail less than 50,000 square feet.
- Small project generating less than 110 daily vehicles. (The proposed office will generate less than 110 daily trips.)



Legend

- Project Site
- Existing Self Storage Facilities

Figure 1
Location of Existing Self Storage Facilties