Appendix H-2
Revised Traffic Impact Study

ESA

LINSCOTT LAW & GREENSPAN engineers

TRAFFIC IMPACT STUDY

RANCHO LOS AMIGOS SOUTH CAMPUS

City of Downey, California

~~July 8, 2019~~May 13, 2020

Prepared for:

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HCM Data Worksheets – AM and PM Peak Hours

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City of Lynwood CMA Data Worksheets – AM and PM Peak Hours

H. Traffic Signal Warrant Worksheets

TRAFFIC IMPACT STUDY

RANCHO LOS AMIGOS SOUTH CAMPUS

City of Downey, California

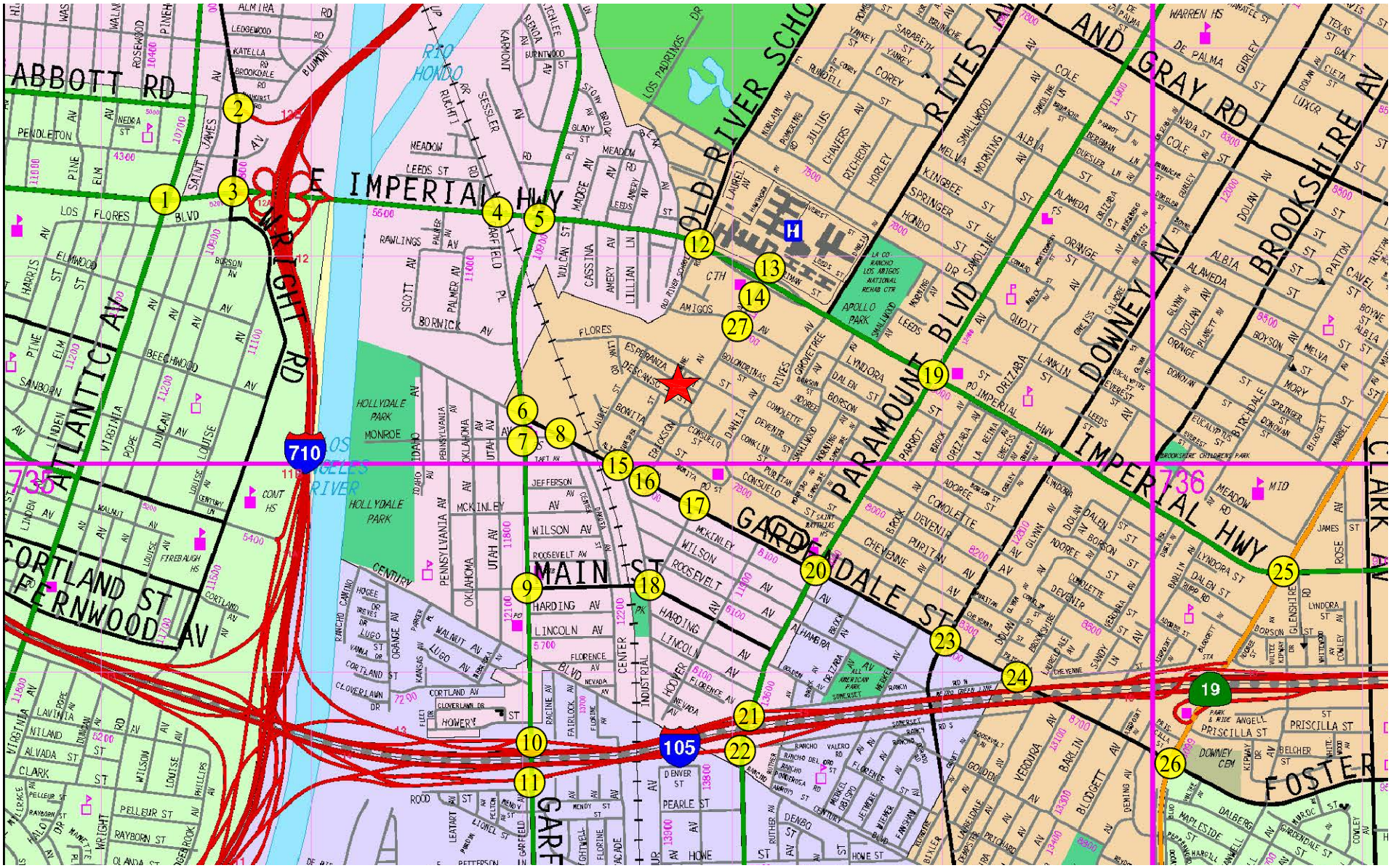
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1.0 INTRODUCTION

This traffic analysis has been conducted to identify and evaluate the potential traffic impacts generated by the proposed Rancho Los Amigos South Campus project located on land owned by the County of Los Angeles (County) in the City of Downey. The project applicant proposes to construct three new County administrative uses serving up to 3,000 employees: the Internal Services Department (ISD) Headquarters, Probation Department Headquarters, and a County Office Building. The project site is bound by Flores Street and Golondrinas Street to the north, Gardendale Street to the south, Laurel Street to the west, the Union Pacific Railroad to the southwest, Rives Avenue and Dahlia Avenue to the east, and a strip that runs east along Consuelo Street to Paramount Boulevard. The project site location and general vicinity are shown in ***Figure 1–1***.

The traffic analysis follows Los Angeles County Department of Public Works (LACDPW) 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 27 key intersections in the vicinity of the project site, which were identified as those intersections that could potentially be most affected by traffic generated by the proposed project. The study intersections were determined in consultation with LACDPW Traffic and Lighting Division staff, as well as transportation staff at the City of Downey, City of South Gate, City of Paramount, and City of Lynwood. The Intersection Capacity Utilization (ICU) method was used to determine Volume-to-Capacity (*v/c*) ratios and corresponding Levels of Service (LOS) for the signalized study intersections located within the City of Downey, City of South Gate, City of Paramount, and the County of Los Angeles. For purposes of this traffic impact study, the terms "ICU" and "*v/c* ratio" are used interchangeably. The Highway Capacity Manual (HCM) method was used to determine Control Delays and corresponding Levels of Service (LOS) for the unsignalized study intersections. The Critical Movement Analysis (CMA) method was used to determine Volume-to-Capacity (*v/c*) ratios and corresponding Levels of Service (LOS) for the study intersection located within the City of Lynwood. A review was also conducted of Los Angeles County Metropolitan Transportation Authority freeway and intersection monitoring stations to determine if a Congestion Management Program (CMP) transportation impact assessment analysis is required for the proposed project.

[1] County of Los Angeles' *Traffic Impact Analysis Report Guidelines*, January 1997.
[2] *2010 Congestion Management Program*, Los Angeles County Metropolitan Transportation Authority, 2010.



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MAP SOURCE: RAND MCNALLY & COMPANY

★ PROJECT SITE

(XX) STUDY INTERSECTION

FIGURE 1-1
VICINITY MAP

LINSCOTT, LAW & GREENSPAN, engineers

RANCHO LOS AMIGOS SOUTH CAMPUS

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This study (i) presents existing traffic volumes, (ii) includes existing traffic volumes with the forecast net new traffic volumes from the proposed project, (iii) forecasts future cumulative traffic volumes with and without the proposed project, (iv) recommends mitigation measures, where feasible to address significant impacts, and (v) provides an assessment of construction-related traffic impacts.

1.1 Study Area

Upon coordination with LACDPW Traffic and Lighting staff, as well as consultation with nearby cities, 27 study intersections have been identified for evaluation during the weekday morning and afternoon peak hours. The 27 study intersections provide local access to the study area and define the extent of the boundaries for this traffic impact analysis. Further discussion of the existing street system and study area is provided in Section 4.0.

The general location of the project in relation to the study intersection 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 potential to experience significant traffic impacts due to the proposed project. 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 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, the forecast Rancho Los Amigos South Campus project peak hour vehicle trip generation, consultation with staff from the LACDPW Traffic and Lighting Division and adjacent cities, the anticipated distribution of project vehicular trips, and existing intersection/corridor operations. For purposes of this traffic impact study, the terms "distribution" and "assignment" are used interchangeably.

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2.0 PROJECT DESCRIPTION

2.1 Site Location

The site of the proposed Rancho Los Amigos South Campus project is located on the south side of Flores Street on 74 acres of County-owned land in the City of Downey, California. The project site is bound by Flores Street and Golondrinas Street to the north, Gardendale Street to the south, Laurel Street to the west, the Union Pacific Railroad to the southwest, Rives Avenue and Dahlia Avenue to the east, and a strip that runs east along Consuelo Street to Paramount Boulevard. The area in which new County buildings and infrastructure are proposed (the Development Area; 28 acres) is bound by Flores Street and Golondrinas Street to the north, the parking lot adjacent to Dahlia Street and the Assistance League of Downey to the east, a mid-block between Descanso Street and Bonita Street to the south, and Laurel Avenue to the west. The project site location and general vicinity are shown in *Figure 1–1*.

2.2 Existing Project Site

The existing project site contains approximately 107 County-owned buildings and structures, as well as two other features, including a Moreton Bay Fig Tree and the Ranch Los Amigos Site Plan, resulting in approximately 109 total features on the project site, many of which are varying in degrees of abandonment and deterioration. Many of the buildings on the existing project site have been boarded-up since roughly 1991. The project site is currently unoccupied with the exception of LACO No. 1100, Administration/Safety Police Building that currently houses the County Office of Public Safety including approximately 50 employees, and LACO No. 3591, which houses the City of Downey's Rose Float Association operations (minimal seasonal staff). These uses would continue in their current operation. Some other buildings are used for maintenance and storage (LACO Nos. 7000 and 1286). Access to the interior of the project site is not available to the public, as an eight-foot chain link fence surrounds the perimeter of the project site.

2.3 Proposed Project Description

The Rancho Los Amigos South Campus project proposes to develop three new County administrative buildings on the existing project site. The ISD Headquarters (up to 315,000 square feet), Probation Department Headquarters (up to 168,000 square feet), and the County Office Building (up to 167,000 square feet) and associated parking and infrastructure would be constructed within the 35-acre Development Area, in the northern part of the project site. In total, up to 650,000 square feet of net new building floor area is proposed to be developed, accommodating up to 3,000 County employees (not including the existing uses). Construction and occupancy of the proposed project is anticipated to be completed by the year 2021. Nearly all buildings and landscape features would be demolished, except for three buildings and the Moreton Bay Fig Tree which would remain on the project site. One building is the County Office of Public Safety building, which will remain in its current use. The two other buildings are currently closed and vacant, and there is no proposal to occupy these buildings in the future. The proposed site plan for the proposed project is illustrated in ***Figure 2–1***.



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MAP SOURCE: GENSLER

FIGURE 2-1
PROJECT SITE PLAN

LINSCOTT, LAW & GREENSPAN, engineers

RANCHO LOS AMIGOS SOUTH CAMPUS

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Vehicular access would be provided via Erickson Avenue and Flores Street. Further discussion of the project site access and circulation schemes is provided in Section 3.0.

County staff proposed to be accommodated at the new buildings currently work at existing facilities, many of which are in proximity to the project site. ***Table 2–1*** provides a summary of the staff anticipated to be relocated to the new buildings on the site in conjunction with the project. Some of the existing staffing sites are located two or more miles away from the project site. There is the potential for other County departments to backfill the existing buildings to be vacated as a part of this project, or for some of the existing County-owned buildings to be sold; however, it is speculative at this time to anticipate the long-term use of these buildings. Nevertheless, this traffic study conservatively assumes that all relocated County workers would generate "new" vehicle trips that would be added to traffic volumes on the local street system.

Table 2-1
LOS ANGELES COUNTY DEPARTMENTS AFFECTED BY THE PROPOSED PROJECT [1]

07-Mar-19

DEPARTMENT NAME	NUMBER OF STAFF TO BE RELOCATED	COUNTY OWNED OR LEASED	APPROXIMATE DISTANCE FROM PROJECT SITE
Probation Department Staff Relocated to Rancho South Campus			
9150 E. Imperial Highway, Downey (Probation HQ/ISD HQ - County-Owned)	688	County-Owned	2.0 Miles East
9525 E. Imperial Highway, Downey (Probation Lease)	109	Probation Lease	3.0 Miles East
11701 S. Alameda Street, Lynwood (County-Owned)	122	County-Owned	6.1 Miles West
7639 S. Painter Avenue, Whittier (County-Owned)	31	County-Owned	12.0 Miles Northeast
1299 W. Artesia Boulevard, Suite 120, Artesia (Probation Lease)	10	Probation Lease	8.0 Miles Southwest
Total	**960**		
ISD Staff Relocated to Rancho South Campus			
9150 E. Imperial Highway, Downey (Probation HQ/ISD Admin - County-Owned)	892	County-Owned	2.0 miles East
1100 N. Eastern Avenue, Los Angeles (ISD HQ - County-Owned)	688	County-Owned	11.0 Miles North
12750 Center Court Drive, Cerritos (ISD Lease)	30	ISD Lease	10.0 Miles Southeast
Total	**1610**		
TOTAL STAFF RELOCATED TO RANCHO SOUTH CAMPUS	**2570**		

[1] Sources: County of Los Angeles Department of Public Works, 2019

3.0 SITE ACCESS AND CIRCULATION

A proposed site access plan for the Rancho Los Amigos project is displayed in *Figure 2–1*. A description of proposed site access and circulation is provided in the following subsections.

3.1 Existing Vehicular Site Access

Vehicular access to the project site from the general public is not permitted, as the project site is currently gated. However, historically, Erickson Avenue served as the primary access into the project site (from Imperial Avenue to the north and Gardendale to the south), as well as access from the east from Consuelo Street. The existing 50 employees at the County Office of Public Safety use these access points.

3.2 Vehicular Project Site Access

A secured Level 1 (ground floor) public entrance to the project site would be provided from Golondrinas Street, which is currently gated and does not allow for regular vehicle access. A dedicated entrance from the secured parking area to the ISD and Probation Department Headquarters buildings would also be provided. Off-campus visitors would arrive on campus through a new parking structure. The parking structure would contain a minimum of two vehicular entry/exit locations from either the extended Rives Avenue and/or Golondrinas Street, as well as two pedestrian access points. Loading docks for the ISD and Probation Department Headquarters buildings are proposed to be located along Rives Avenue. The loading docks are proposed to be integrated into the building façade and be fully screened.

The County Office Building and associated parking structure would be accessed from vehicular entry/exit points from Flores Avenue and Laurel Street, and will be fully contained within the security wall with controlled access through ingress and egress gates. The primary access point for the County Office Building would be set back from the street and may include a covered entry.

As described in Section 7.2, while the vehicular access points for the parking structures serving the ISD and Probation Department Headquarters buildings and County Office Building have not been finalized, the actual driveways will not affect the assumed assignment of project-related trips to the analyzed study intersections.

4.0 EXISTING STREET SYSTEM

4.1 Regional Highway System

Primary regional access is provided by the I-105 (Century) Freeway and I-710 (Long Beach) Freeway, as shown in *Figure 1-1*. A brief description of the I-105 and I-710 freeways are provided in the following paragraphs.

I-105 (Century) Freeway is an east-west freeway that extends from El Segundo to Norwalk. In the project vicinity, one HOV lane and three to four mixed-flow travel lanes are provided in each direction. Eastbound and westbound ramps are provided on the I-105 Freeway at Garfield Avenue and Paramount Boulevard in the project vicinity.

I-710 (Long Beach) Freeway is a north-south freeway that extends from Alhambra to Long Beach. In the project vicinity, four mixed-flow travel lanes are provided in each direction on the I-710 Freeway. Northbound and southbound ramps are provided on the I-710 Freeway at Imperial Highway in the project vicinity.

4.2 Local Street System

The following intersections (and their jurisdictional authority were selected in consultation with LACDPW Traffic and Lighting Division staff (as well as staff from adjacent cities) for analysis of potential traffic impacts due to the proposed project:

1. Atlantic Avenue / Imperial Highway (City of Lynwood)
2. Wright Road / Abbott Road – I-710 Southbound Off-Ramp (City of South Gate)
3. Wright Road / Imperial Highway (City of Lynwood / City of South Gate)
4. Ruchti Road-Garfield Place / Imperial Highway (City of South Gate)
5. Garfield Avenue / Imperial Highway (City of South Gate)
6. Garfield Avenue / Gardendale Street (City of Downey / City of South Gate)
7. Garfield Avenue / Monroe Avenue (City of South Gate) [Unsignalized]
8. Gardendale Street / Monroe Avenue (City of South Gate) [Unsignalized]
9. Garfield Avenue / Main Street (City of South Gate)
10. Garfield Avenue / N. Somerset Ranch Road (City of Paramount)
11. Garfield Avenue / S. Somerset Ranch Road (City of Paramount)
12. Old River School Road / Imperial Highway (City of Downey / City of South Gate)
13. Erickson Avenue / W. Imperial Highway (City of Downey / County of Los Angeles) [Unsignalized]
14. Erickson Avenue / E. Imperial Highway (City of Downey / County of Los Angeles) [Unsignalized]

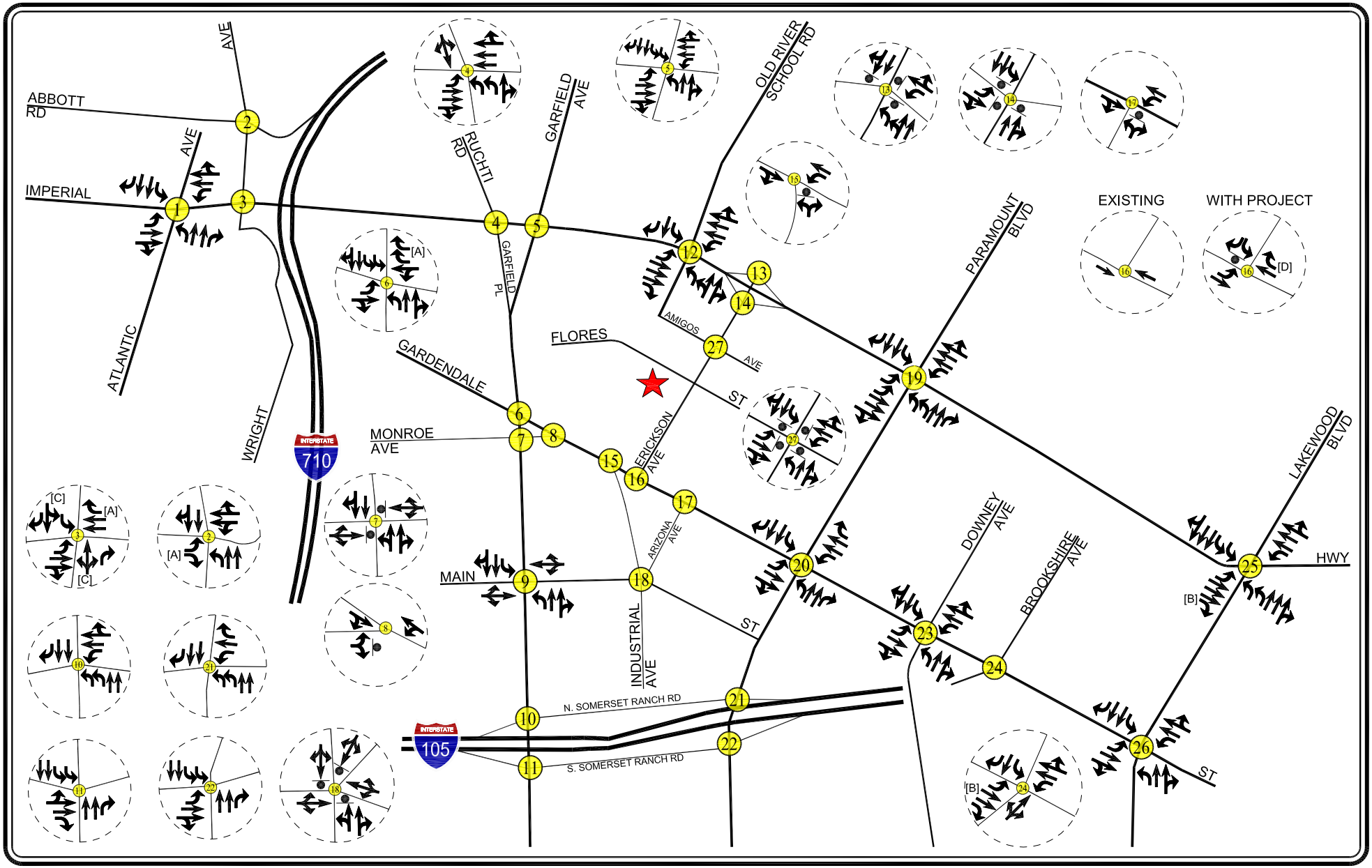
15. Industrial Avenue / Gardendale Street (City of Downey / City of South Gate) [Unsignalized]
16. Erickson Avenue / Gardendale Street (City of Downey / City of South Gate / County of Los Angeles) [Unsignalized]
17. Arizona Avenue / Gardendale Street (City of Downey / City of South Gate) [Unsignalized]
18. Industrial Avenue – Arizona Avenue / Gardendale Street (City of South Gate) [Unsignalized]
19. Paramount Boulevard / Imperial Highway (City of Downey)
20. Paramount Boulevard / Gardendale Street (City of Downey / City of South Gate / City of Paramount)
21. Paramount Boulevard / N. Somerset Ranch Road (City of South Gate)
22. Paramount Boulevard / S. Somerset Ranch Road (City of South Gate)
23. Downey Avenue / Gardendale Street (City of Downey / City of Paramount)
24. Brookshire Avenue – N. Somerset Ranch Road / Gardendale Street (City of Downey)
25. Lakewood Boulevard / Imperial Highway (City of Downey)
26. Lakewood Boulevard / Gardendale Street (City of Downey)
27. Erickson Avenue / Amigos Avenue (City of Downey / County of Los Angeles) [Unsignalized]

Eighteen of the 27 study intersections selected for analysis are presently controlled by traffic signals, while nine of the intersections are stop-controlled. The existing lane configurations at the study intersections are displayed in ***Figure 4–1.***

4.3 Roadway Descriptions

A brief description of the roadways in the project vicinity is provided in the following paragraphs.

Atlantic Avenue is a north-south oriented roadway located west of the project site. In the project vicinity, Atlantic Avenue is designated as an Arterial Street in the City of Lynwood General Plan. Two through travel lanes are provided in each direction on Atlantic Avenue within the project vicinity. Separate exclusive left-turn and right-turn lanes are provided on Atlantic Avenue at the Imperial Highway intersection. Atlantic Avenue is posted for a 35 miles per hour speed limit in the project vicinity.



PROJECT SITE
XX STUDY INTERSECTION
[A] = RIGHT-TURN OVERLAP
[B] = FREE-FLOW RIGHT TURN
[C] = SPLIT PHASING
[D] = DEFACTO RIGHT-TURN
STOP SIGN

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NOT TO SCALE

FIGURE 4-1
EXISTING LANE CONFIGURATIONS

RANCHO LOS AMIGOS SOUTH CAMPUS

LINSCOTT, LAW & GREENSPAN, engineers

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Wright Road is a north-south oriented roadway located west of the project site. In the project vicinity, Wright Road is designated as a Collector Street in the City of Lynwood General Plan and as a Collector Street in the City of South Gate Mobility Element. One through travel lane is provided in each direction on Wright Road within the project vicinity. Separate exclusive left-turn lanes are provided on Wright Road at the I-710 Southbound Off-Ramp-Abbott Road intersection, as well as in the southbound direction at the Imperial Highway intersection. Wright Road is posted for a 35 miles per hour speed limit north of Imperial Highway, and for a 25 miles per hour speed limit south of Imperial Highway in the project vicinity.

Ruchti Road is a north-south oriented roadway located west of the project site. In the project vicinity, Ruchti Road is designated as a ~~Collector Street~~Local Road in the City of South Gate Mobility Element. One through travel lane is provided in each direction on Ruchti Road within the project vicinity. South of Imperial Highway, Ruchti Road becomes Garfield Place. There is no speed limit posted on Ruchti Road, thus a prima facie speed limit of 25 miles per hour is assumed, consistent with the State of California Vehicle Code.

Garfield Place is a north-south oriented roadway located west of the project site. In the project vicinity, Garfield Place is designated as a ~~Collector Street~~Local Road in the City of South Gate Mobility Element. Two through travel lanes are provided in each direction on Garfield Place within the project vicinity. Separate exclusive left-turn lanes are provided on Garfield Place in the northbound direction at the Imperial Highway intersection. North of Imperial Highway, Garfield Place becomes Ruchti Road. Garfield Place is posted for a 35 miles per hour speed limit in the project vicinity.

Garfield Avenue is a north-south oriented roadway located west of the project site. In the project vicinity, Garfield Avenue is designated as a Primary Arterial in the City of South Gate Mobility Element, as a Primary Arterial in the City of Downey Circulation Plan, and as a Major Arterial in the City of Paramount General Plan. It is noted that the Garfield Avenue / Imperial Highway intersection is designated as an Enhanced Intersection in the City of South Gate's Mobility Element. Two through travel lanes are provided in each direction on Garfield Avenue within the project vicinity. Separate exclusive left-turn lanes are provided at major intersections along Garfield Avenue in the project vicinity. Separate exclusive right-turn lanes are provided on Garfield Avenue in the southbound direction at the ~~Gardendale Street~~Imperial Highway intersection, in the southbound direction at the N. Somerset Ranch Road intersection, and in the northbound direction at the S. Somerset Ranch Road intersection. Garfield Avenue is posted for a 35 miles per hour speed limit in the project vicinity.

Old River School Road is a north-south oriented roadway located west of the project site. In the project vicinity, Old River School Road is designated as a Primary Arterial in the City of Downey Circulation Plan. Two through travel lanes are provided in each direction on Old River School Road within the project vicinity. Separate exclusive left-turn lanes are provided on Old River School Road at the Imperial Highway intersection, and separate exclusive right-turn lanes are provided in the southbound direction on Old River School Road at the Imperial Highway

intersection. Old River School Road is posted for a 40 miles per hour speed limit in the project vicinity.

Erickson Avenue is a north-south oriented roadway that provides immediate access to the project site. In the project vicinity, Erickson Avenue is designated as a Collector Street in the City of Downey Circulation Plan. Two through travel lanes are provided in each direction on Erickson Avenue within the project vicinity. Separate exclusive left-turn and right-turn lanes are provided at major intersections along Erickson Avenue in the project vicinity. Under existing conditions, Erickson Avenue is gated at the Gardendale Street intersection. The gate would be removed to allow access to Erickson Avenue from Gardendale Street as part of the project. There is no speed limit posted on Erickson Avenue, thus a prima facie speed limit of 25 miles per hour is assumed, consistent with the State of California Vehicle Code.

Laurel Avenue is a north-south oriented roadway that provides immediate access to the project site. In the project vicinity, Laurel Avenue is designated as a Collector Street in the City of Downey Circulation Plan. One through travel lane is provided in each direction on Laurel Avenue within the project vicinity. Under existing conditions, Laurel Avenue is gated off at the Flores Street intersection. The gate would be removed to allow access to Laurel Avenue from Flores Street as part of the project. There is no speed limit posted on Laurel Avenue, thus a prima facie speed limit of 25 miles per hour is assumed, consistent with the State of California Vehicle Code.

Juniper Street is a north-south oriented roadway that provides immediate access to the project site. In the project vicinity, Juniper Street is designated as a Collector Street in the City of Downey Circulation Plan. One through travel lane is provided in each direction on Juniper Street within the project vicinity. Under existing conditions, Juniper Street is located within the gated-off area surrounding the project site. The gate would be removed to allow access to Juniper Street from Descanso Street as part of the project. There is no speed limit posted on Juniper Street, thus a prima facie speed limit of 25 miles per hour is assumed, consistent with the State of California Vehicle Code.

Dahlia Avenue is a north-south oriented roadway that provides immediate access to the project site. In the project vicinity, Dahlia Avenue is designated as a Collector Street in the City of Downey Circulation Plan. One through travel lane is provided in each direction on Dahlia Avenue within the project vicinity. There is no speed limit posted on Dahlia Avenue, thus a prima facie speed limit of 25 miles per hour is assumed, consistent with the State of California Vehicle Code. Dahlia Avenue would be rerouted as part of the project to serve the easternmost portion of the project site.

Industrial Avenue is a north-south oriented roadway located south of the project site. In the project vicinity, Industrial Avenue is designated as a ~~Collector Street~~Local Road in the City of South Gate Mobility Element. One through travel lane is provided in each direction on Industrial Avenue within the project vicinity. There is no speed limit posted on Industrial Avenue, thus a prima facie speed limit of 25 miles per hour is assumed, consistent with the State of California Vehicle Code.

Arizona Avenue is a north-south oriented roadway located south of the project site. In the project vicinity, Arizona Avenue is designated as a ~~Collector Street~~Local Road in the City of South Gate Mobility Element. One through travel lane is provided in each direction on Arizona Avenue within the project vicinity. There is no speed limit posted on Arizona Avenue, thus a prima facie speed limit of 25 miles per hour is assumed, consistent with the State of California Vehicle Code.

Paramount Boulevard is a north-south oriented roadway located east of the project site. In the project vicinity, Paramount Boulevard is designated as a Major Arterial in the City of Downey Circulation Plan, as a Major Arterial in the City of Paramount General Plan, and as a Primary Arterial in the City of South Gate Mobility Element. Two through travel lanes are provided in each direction on Paramount Boulevard within the project vicinity. A center two-way left-turn lane is provided on Paramount Boulevard in the project vicinity. Separate exclusive left-turn and right-turn lanes are provided along Paramount Boulevard at major intersections in the project vicinity. Paramount Boulevard is posted for a 35-40 miles per hour speed limit in the project vicinity.

Downey Avenue is a north-south oriented roadway located east of the project site. In the project vicinity, Downey Avenue is designated as a Primary Arterial in the City of Downey Circulation Plan, and as a Secondary Arterial in the City of Paramount General Plan. Two through travel lanes are provided in each direction on Downey Avenue within the project vicinity. Separate exclusive left-turn lanes are provided along Downey Avenue at major intersections in the project vicinity. Downey Avenue is posted for a 40 miles per hour speed limit in the project vicinity.

Brookshire Avenue is a north-south oriented roadway located east of the project site. In the project vicinity, Brookshire Avenue is designated as a Primary Arterial in the City of Downey Circulation Plan. Two through travel lanes are provided in each direction on Brookshire Avenue within the project vicinity. Separate exclusive left-turn and right turn lanes are provided on Brookshire Avenue at the Gardendale Street intersection in the project vicinity. South of Gardendale Street, Brookshire Avenue becomes N. Somerset Ranch Road. Brookshire Avenue is posted for a 40 miles per hour speed limit in the project vicinity.

Lakewood Boulevard is a north-south oriented roadway located east of the project site. In the project vicinity, Lakewood Boulevard is designated as a Major Arterial in the City of Downey Circulation Plan. Two to three through travel lanes are provided in each direction on Lakewood Boulevard within the project vicinity. Separate exclusive left-turn lanes are provided along Lakewood Boulevard at major intersections in the project vicinity. Separate exclusive right-turn lanes are provided on Lakewood Boulevard in the southbound direction at the Gardendale Street intersection. Lakewood Boulevard is posted for a 40 miles per hour speed limit in the project vicinity.

Imperial Highway is an east-west oriented roadway located north of the project site. In the project vicinity, Imperial Highway is designated as an Arterial Street in the City of Lynwood General Plan, as a Primary Arterial in the City of South Gate Mobility Element, and as a Major Arterial in the City of Downey Circulation Plan. It is noted that the Garfield Avenue / Imperial Highway intersection is designated as an Enhanced Intersection in the City of South Gate's

Mobility Element. Two to three through travel lanes are provided in each direction on Imperial Highway within the project vicinity. A center two-way left-turn lane is provided on Imperial Highway in the project vicinity. Separate exclusive left-turn lanes are provided at major intersections along Imperial Highway in the project vicinity. Separate exclusive right-turn lanes are provided on Imperial Highway in the westbound direction at the Wright Road intersection, and in the eastbound direction at the Old River School Road and Lakewood Boulevard intersections. Imperial Highway is posted for a 40 miles per hour speed limit in the project vicinity.

Abbott Road is an east-west oriented roadway that is located west of the project site. Within the project vicinity, Abbott Road is designated as a ~~Collector Street~~Local Road in the City of ~~Lynwood General Plan~~South Gate Mobility Element. Two through travel lanes are provided in each direction on Abbott Road within the project vicinity. A center two-way left-turn lane is provided on Abbott Road in the project vicinity. Separate exclusive left-turn and right-turn lanes are provided on Abbott Road at the Wright Road intersection. Abbott Road is posted for a 35 miles per hour speed limit on the I-710 Freeway Southbound Off-Ramp, which forms the east left of the Wright Road / Abbott Road intersection. Within the City of South Gate, there is no speed limit posted on Abbott Road, thus a prima facie speed limit of 25 miles per hour is assumed, consistent with the State of California Vehicle Code. ~~in the project vicinity.~~

Gardendale Street is an east-west oriented roadway located south of the project site. In the project vicinity, Gardendale Street is designated as a ~~Secondary Arterial~~Collector Street in the City of South Gate Mobility Plan, and as a Secondary Arterial in the City of Downey Circulation Plan. One through travel lane is provided in each direction on Gardendale Street within the project vicinity. A center two-way left-turn lane is provided on Gardendale Street in the project vicinity. Separate exclusive left-turn lanes are provided along Gardendale Street at major intersections in the project vicinity. Separate exclusive right-turn lanes are provided in the westbound direction on Gardendale Street at the Garfield Avenue intersection. Gardendale Street is posted for a 35 miles per hour speed limit in the project vicinity.

Amigos Avenue is an east-west oriented roadway that provides immediate access to the project site. In the project vicinity, Amigos Avenue is designated as a Collector Street in the City of Downey Circulation Plan. Two through travel lanes are provided in each direction on Esperanza Street within the project vicinity. There is no speed limit posted on Amigos Avenue, thus a prima facie speed limit of 25 miles per hour is assumed, consistent with the State of California Vehicle Code.

Flores Street is an east-west oriented roadway that provides immediate access to the project site. In the project vicinity, Flores Street is designated as a Collector Street in the City of Downey Circulation Plan. Two through travel lanes are provided in each direction on Flores Street within the project vicinity. There is no speed limit posted on Flores Street, thus a prima facie speed limit of 25 miles per hour is assumed, consistent with the State of California Vehicle Code.

Esperanza Street is an east-west oriented roadway that provides immediate access to the project site. In the project vicinity, Esperanza Street is designated as a Collector Street in the City of Downey Circulation Plan. One through travel lane is provided in each direction on Esperanza Street within the project vicinity. Under existing conditions, Esperanza Street is gated off at the Erickson Avenue intersection. The gate would be removed to allow access to Esperanza Street from Erickson Avenue as part of the project. There is no speed limit posted on Esperanza Street, thus a prima facie speed limit of 25 miles per hour is assumed, consistent with the State of California Vehicle Code.

Descanso Street is an east-west oriented roadway that provides immediate access to the project site. In the project vicinity, Descanso Street is designated as a Collector Street in the City of Downey Circulation Plan. One through travel lane is provided in each direction on Descanso Street within the project vicinity. Under existing conditions, Descanso Street is gated off at the Erickson Avenue intersection. The gate would be removed to allow access to Descanso Street from Erickson Avenue as part of the project. There is no speed limit posted on Descanso Street, thus a prima facie speed limit of 25 miles per hour is assumed, consistent with the State of California Vehicle Code.

Bonita Street is an east-west oriented roadway that provides immediate access to the project site. In the project vicinity, Bonita Street is designated as a Collector Street in the City of Downey Circulation Plan. One through travel lane is provided in each direction on Bonita Street within the project vicinity. Under existing conditions, Bonita Street is located within the gated-off area surrounding the project site. The gate would be removed to allow access to Bonita Street as part of the project. There is no speed limit posted on Bonita Street, thus a prima facie speed limit of 25 miles per hour is assumed, consistent with the State of California Vehicle Code.

Monroe Avenue is an east-west oriented roadway located south of the project site. In the project vicinity, Monroe Avenue is designated as a ~~Collector Street~~Local Road in the City of South Gate Mobility Element. One through travel lane is provided in each direction on Monroe Avenue within the project vicinity. There is no speed limit posted on Monroe Avenue, thus a prima facie speed limit of 25 miles per hour is assumed, consistent with the State of California Vehicle Code.

Main Street is an east-west oriented roadway located south of the project site. In the project vicinity, Main Street is designated as a Collector Street in the City of South Gate Mobility Element. One through travel lane is provided in each direction on Main Street within the project vicinity. Main Street is posted for a ~~35~~ 25 miles per hour speed limit in the project vicinity.

N. Somerset Ranch Road is a westbound one-way street located south of the project site. In the project vicinity, N. Somerset Ranch Road is designated as a ~~Collector Street~~Local Road in the City of South Gate Mobility Element, and as a Collector Street in the City of Paramount General Plan. Two through travel lanes are provided on N. Somerset Ranch Road within the project vicinity. Separate exclusive left-turn lanes are provided along N. Somerset Ranch Road at major intersections in the project vicinity. Separate exclusive right-turn lanes are provided on N. Somerset Ranch Road at the Paramount Boulevard intersection. N. Somerset Ranch Road

provides access to the I-105 Freeway Westbound Ramps. N. Somerset Ranch Road is posted for a 40 miles per hour speed limit in the project vicinity.

S. Somerset Ranch Road is an eastbound one-way street located south of the project site. In the project vicinity, S. Somerset Ranch Road is designated as a ~~Collector Street~~Local Road in the City of South Gate Mobility Element, and as a Collector Street in the City of Paramount General Plan. Two through travel lanes are provided on S. Somerset Ranch Road within the project vicinity. Separate exclusive left-turn lanes are provided along S. Somerset Ranch Road at major intersections in the project vicinity. S. Somerset Ranch Road provides access to the I-105 Freeway Eastbound Ramps. S. Somerset Ranch Road is posted for a 40 miles per hour speed limit in the project vicinity.

4.4 Public Transit Services

Public transit services within the project study area are currently provided by the Los Angeles County Metropolitan Transit Authority (Metro), DowneyLink Transit, City of South Gate Transit, and City of Lynwood Trolley/Breeze. A summary of the existing transit service, including the transit routes servicing the project vicinity, destinations, and peak hour headways is presented in ***Table 4–1***. As shown in *Table 4–1*, the following bus lines serve the project study area: Metro 117, Metro 120, Metro 258, Metro 265, Metro 266, Metro Rapid 762, DowneyLink Southwest, DowneyLink Southeast, G.A.T.E. Eastside, and Lynwood Trolley/Breeze Route B. Additionally, the Metro Green Line light rail line serves the project study area. The existing public transit routes in the project study area are shown in ***Figure 4–2***.

In addition to these existing routes, Metro is currently in the planning and environmental review phase for the West Santa Ana Branch Line, which would include a transit station at Gardendale Street, in proximity to the project site. Per Measure M, the project would break ground in 2022 with an opening date of 2041. Metro is advancing the project as a Public Private Partnership that may potentially accelerate the project opening earlier than 2041.

4.5 Bicycle and Pedestrian Facilities

Bicycle and pedestrian facilities are provided within the project study area and offer additional options for travel to and from the project site. Gardendale Street, which borders the project site to the south, provides on-street bicycle lanes in each direction. The Rio Hondo, Los Angeles River, and San Gabriel River Multi-Use Trails provide walking and bicycling facilities for regional travel to and from the project site. Additionally, sidewalks are provided on all streets within the project study area.

Table 4-1
EXISTING PUBLIC TRANSIT ROUTES [1]

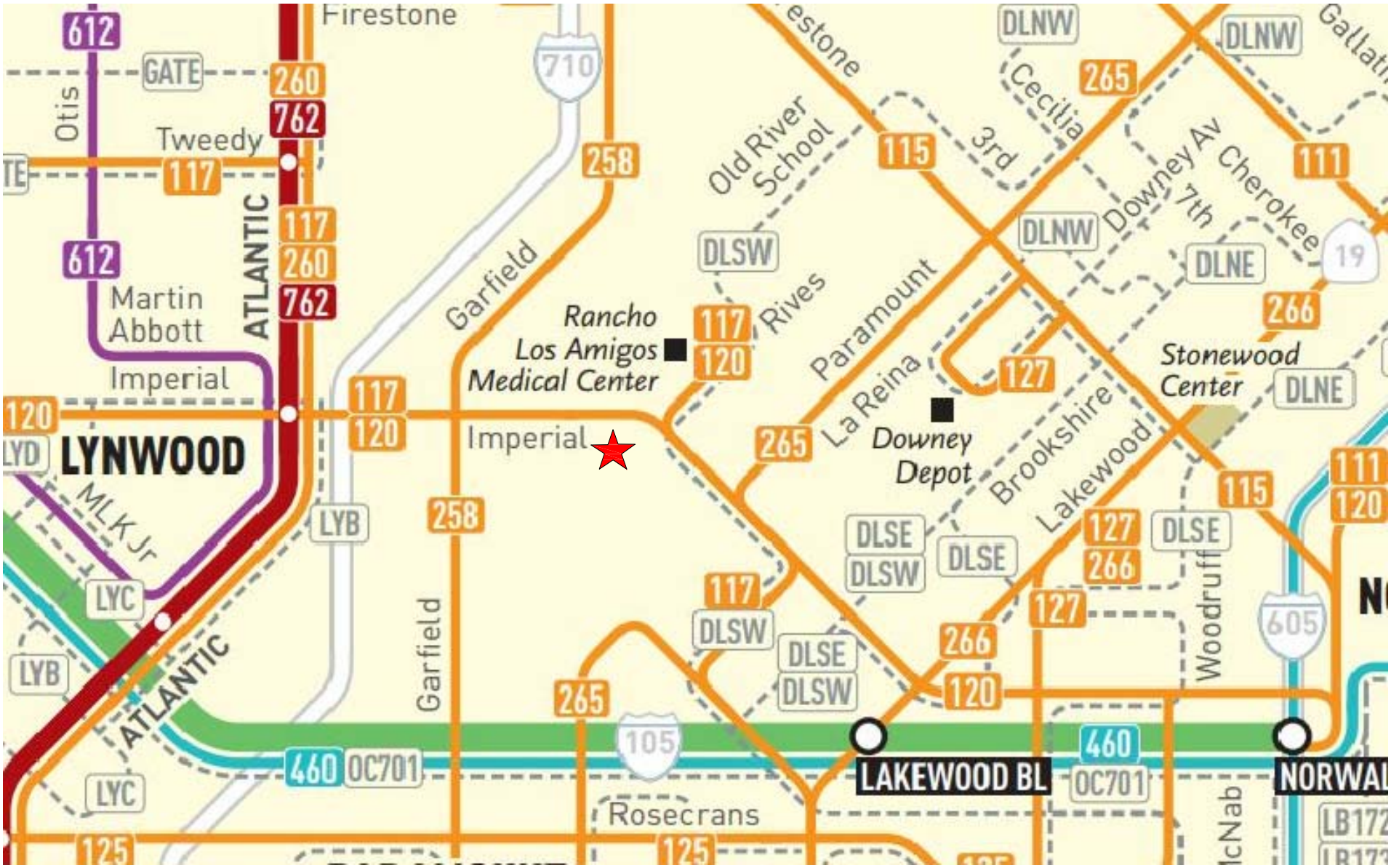
26-Apr-18

ROUTE	DESTINATIONS	ROADWAY(S) NEAR SITE	NO. OF BUSES/TRAINS DURING PEAK HOUR		
			DIR	AM	PM
Metro 117	Downey to LAX City Bus Center (via Century Boulevard & Imperial Highway)	Imperial Highway	EB WB	8 7	8 6
Metro 120	Whittwood Town Center to Aviation/LAX Station (via Imperial Highway)	Imperial Highway	EB WB	3 6	5 4
Metro 258	Altadena to Paramount (via Fremont Avenue, Eastern Avenue & Lake Avenue)	Garfield Avenue	NB SB	3 3	3 3
Metro 265	Pico Rivera to Lakewood Center Mall (via Paramount Boulevard)	Paramount Boulevard	NB SB	3 1	2 2
Metro 266	Sierra Madre Villa Station to Lakewood Center Mall (via Rosemead Boulevard & Lakewood Boulevard)	Lakewood Boulevard	NB SB	6 4	4 4
Metro Rapid 762	Pasadena to Artesia Blue Line Station (via Fair Oaks Boulevard & Atlantic Avenue)	Atlantic Avenue	NB SB	5 5	4 5
Metro Green Line	Norwalk to Redondo Beach	Garfield Avenue Paramount Avenue	EB WB	17 17	17 17

Table 4-1 (Continued)
EXISTING PUBLIC TRANSIT ROUTES [1]

ROUTE	DESTINATIONS	ROADWAY(S) NEAR SITE	NO. OF BUSES/TRAINS DURING PEAK HOUR		
			DIR	AM	PM
DowneyLink Southwest	Roundtrip from Downey Transit Depot (via Rives Avenue & Brookshire Avenue)	Brookshire Avenue Imperial Highway	CW CCW	2 0	3 0
DowneyLink Southeast	Roundtrip from Downey Transit Depot (via Imperial Highway & Brookshire Avenue)	Brookshire Avenue Imperial Highway	CW CCW	5 0	4 0
G.A.T.E. Eastside	Roundtrip from Southgate Auditorium (via Garfield Avenue & Firestone Boulevard)	Garfield Avenue Imperial Highway	CW CCW	0 4	0 4
Lynwood Route B	Roundtrip from Rosa Parks Transit Center (via Atlantic Avenue & Imperial Highway)	Atlantic Avenue Imperial Highway	CW CCW	4 0	3 0
			Total	**103**	**98**

[1] Sources: Los Angeles County Metropolitan Transportation Authority (Metro) website, 2017.
DowneyLink Transit website, 2017.
City of South Gate Transit website, 2017.
Lynwood Trolley/Breeze website, 2017.
CW=Clockwise
CCW=Counterclockwise



NOT TO SCALE

MAP SOURCE: METROPOLITAN TRANSPORTATION AUTHORITY

- PROJECT SITE
- METRO BUS ROUTE (117, 120, 258, 265, 266)
- METRO RAPID ROUTE (762)
- METRO GREEN LINE
- NON-METRO BUS ROUTE (DOWNEYLINK, G.A.T.E, LYNWOOD TROLLEY/BREEZE)

FIGURE 4-2
EXISTING PUBLIC TRANSIT ROUTES

LINSCOTT, LAW & GREENSPAN, engineers

RANCHO LOS AMIGOS SOUTH CAMPUS

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5.0 TRAFFIC COUNTS

Manual traffic counts of vehicular turning movements were conducted at each of the 27 study intersections during the weekday morning and afternoon commuter period to determine the peak hour traffic volume. The manual traffic counts at the study intersections were conducted from 7:00 AM to 9:00 AM to determine the AM peak commuter hour and from 4:00 to 6:00 PM to determine the PM peak commuter hour. The traffic counts were conducted on Wednesday, October 11, 2017 at 26 of the 27 study intersections. Traffic counts were conducted on Wednesday, August 15, 2018 at the Erickson Avenue / Amigos Avenue intersection (Int. No. 27) Per LACDPW Traffic and Lighting Division direction, the intersection traffic counts were conducted during a mid-week weekday while local schools were in session.

The weekday AM and PM peak period manual counts of vehicle movements at the study intersections are summarized in ***Table 5–1***. The existing traffic volumes at the study intersections during the AM and PM peak hours are shown in ***Figures 5–1 and 5–2***, respectively. Summary data worksheets of the manual traffic counts at the study intersections are contained in ***Appendix A***.

Table 5-1
EXISTING TRAFFIC VOLUMES [1]

02-Oct-18

NO.	INTERSECTION	DATE	DIR	AM PEAK HOUR		PM PEAK HOUR	
				BEGAN	VOLUME [2]	BEGAN	VOLUME [2]
1	Atlantic Avenue / Imperial Highway	10/11/2017	NB	7:15	1,119	4:15	1,003
			SB		1,036		975
			EB		792		932
			WB		1,047		1,026
2	Wright Road / Abbott Road-I-710 Southbound Off-Ramp	10/11/2017	NB	7:00	857	5:00	1,120
			SB		467		483
			EB		680		539
			WB		593		505
3	Wright Road / Imperial Highway	10/11/2017	NB	7:00	560	5:00	379
			SB		1,244		1,071
			EB		1,320		1,248
			WB		1,781		2,058
4	Ruchti Road-Garfield Place / Imperial Highway	10/11/2017	NB	7:15	636	4:30	456
			SB		44		98
			EB		2,342		2,132
			WB		1,737		1,622
5	Garfield Avenue / Imperial Highway	10/11/2017	NB	7:45	1,561	5:00	1,484
			SB		1,618		1,346
			EB		1,068		1,340
			WB		1,195		1,006
6	Garfield Avenue / Gardendale Street	10/11/2017	NB	7:30	956	5:00	706
			SB		1,059		1,243
			EB		143		76
			WB		891		467
7	Garfield Avenue / Monroe Avenue	10/11/2017	NB	7:30	1,007	5:00	775
			SB		743		788
			EB		42		52
			WB		10		10
8	Monroe Avenue / Gardendale Street	10/11/2017	NB	7:15	64	4:30	55
			SB		0		0
			EB		511		575
			WB		945		469
9	Garfield Avenue / Main Street	10/11/2017	NB	7:30	1,060	4:30	833
			SB		747		718
			EB		126		66
			WB		298		174
10	Garfield Avenue / N. Somerset Ranch Road	10/11/2017	NB	7:15	1,199	4:30	1,191
			SB		1,122		749
			EB		0		0
			WB		1,196		949
11	Garfield Avenue / S. Somerset Ranch Road	10/11/2017	NB	7:15	1,167	4:30	1,456
			SB		1,167		732
			EB		1,622		1,506
			WB		0		0

Table 5-1 (Continued)
EXISTING TRAFFIC VOLUMES [1]

02-Oct-18

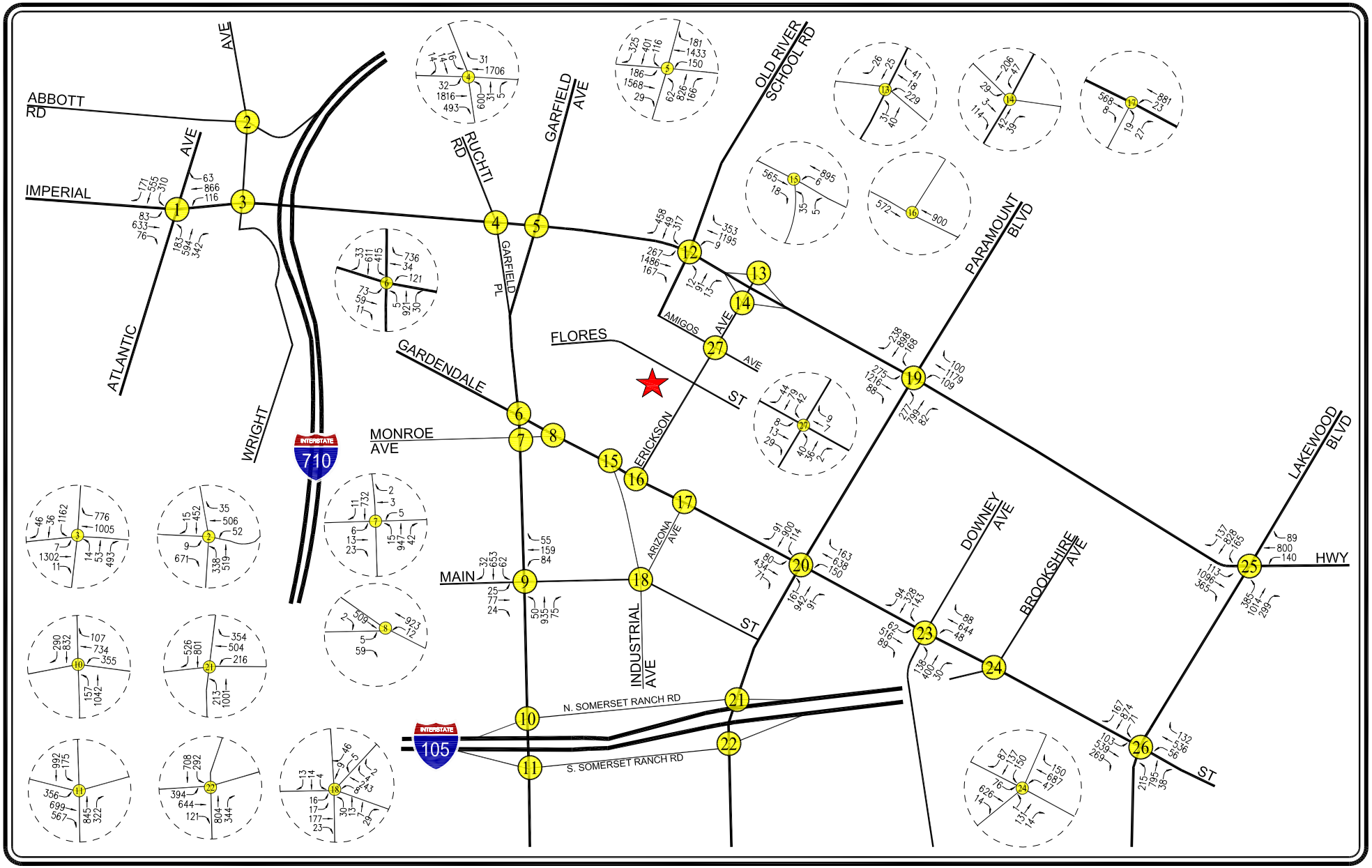
NO.	INTERSECTION	DATE	DIR	AM PEAK HOUR		PM PEAK HOUR	
				BEGAN	VOLUME	BEGAN	VOLUME
12	Old River School Road / Imperial Highway	10/11/2017	NB	7:00	116	4:30	151
			SB		824		651
			EB		1,922		1,722
			WB		1,562		1,334
13	Erickson Avenue / W. Imperial Highway	10/11/2017	NB	7:30	71	4:00	97
			SB		51		72
			EB		0		0
			WB		288		85
14	Erickson Avenue / E. Imperial Highway	10/11/2017	NB	7:30	81	4:15	203
			SB		253		115
			EB		146		55
			WB		0		0
15	Industrial Avenue / Gardendale Street	10/11/2017	NB	7:15	40	4:30	34
			SB		0		0
			EB		583		637
			WB		901		471
16	Erickson Avenue / Gardendale Street	10/11/2017	NB	7:15	0	5:00	0
			SB		0		0
			EB		572		599
			WB		900		490
17	Arizona Avenue / Gardendale Street	10/11/2017	NB	7:15	46	5:00	36
			SB		0		0
			EB		576		602
			WB		906		507
18	Industrial Avenue / Arizona Avenue-Main Street	10/11/2017	NB	7:15	72	4:30	57
			SB		31		30
			EB		217		196
			WB		256		158
19	Paramount Boulevard / Imperial Highway	10/11/2017	NB	7:15	1,159	4:30	1,074
			SB		1,311		1,169
			EB		1,588		1,737
			WB		1,417		1,242
20	Paramount Boulevard / Gardendale Street	10/11/2017	NB	7:15	1,194	5:00	1,240
			SB		1,106		1,161
			EB		585		629
			WB		951		607
21	Paramount Boulevard / N. Somerset Ranch Road	10/11/2017	NB	7:15	1,214	5:00	1,222
			SB		1,327		1,148
			EB		0		0
			WB		1,074		894
22	Paramount Boulevard / S. Somerset Ranch Road	10/11/2017	NB	7:15	1,148	5:00	993
			SB		1,000		990
			EB		1,159		1,300
			WB		0		0

Table 5-1 (Continued)
EXISTING TRAFFIC VOLUMES [1]

02-Oct-18

NO.	INTERSECTION	DATE	DIR	AM PEAK HOUR		PM PEAK HOUR	
				BEGAN	VOLUME	BEGAN	VOLUME
23	Downey Avenue / Gardendale Street	10/11/2017	NB	7:15	568	5:00	700
			SB		565		516
			EB		667		704
			WB		780		606
24	N. Somerset Road-Brookshire Avenue / Gardendale Street	10/11/2017	NB	7:15	146	5:00	243
			SB		374		292
			EB		716		671
			WB		884		741
25	Lakewood Boulevard / Imperial Highway	10/11/2017	NB	7:15	1,731	4:45	1,472
			SB		1,156		1,105
			EB		1,588		1,560
			WB		1,042		1,303
26	Lakewood Boulevard / Gardendale Street	10/11/2017	NB	7:15	1,053	5:00	1,067
			SB		1,113		1,339
			EB		911		851
			WB		724		525
27	Erickson Avenue / Amigos Avenue	08/15/2018	NB	7:00	78	4:15	99
			SB		165		63
			EB		50		83
			WB		16		21

[1] National Data & Surveying Services



PROJECT SITE

STUDY INTERSECTION

N

NOT TO SCALE

FIGURE 5-1
EXISTING TRAFFIC VOLUMES

WEEKDAY AM PEAK HOUR

RANCHO LOS AMIGOS SOUTH CAMPUS

LINSCOTT, LAW & GREENSPAN, engineers

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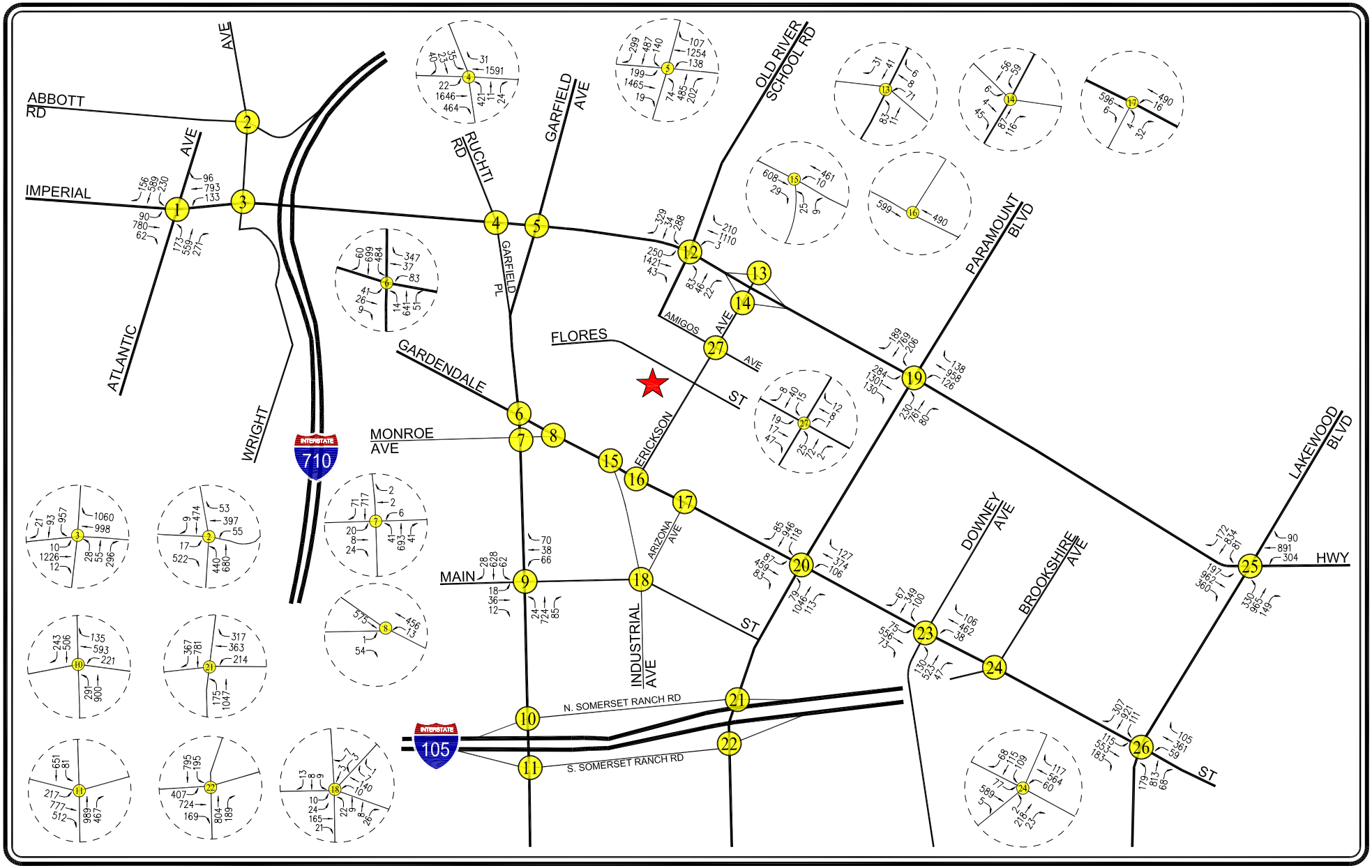


FIGURE 5-2
EXISTING TRAFFIC VOLUMES

WEEKDAY PM PEAK HOUR
RANCHO LOS AMIGOS SOUTH CAMPUS

LINSCOTT, LAW & GREENSPAN, engineers

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6.0 CUMULATIVE DEVELOPMENT PROJECTS

The forecast of future baseline traffic conditions was prepared in accordance to 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."

The traffic analysis utilizes options "A" and "B" outlined in CEQA Guidelines for purposes of developing the future cumulative traffic volume forecast. This combined approach is considered conservative.

6.1 Related Projects

A forecast of cumulative traffic conditions with occupancy of the proposed project was prepared by incorporating the potential trips associated with other known development projects (related projects) in the project study 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 related projects research was based on information on file at the County of Los Angeles Department of Regional Planning, City of Downey Community Development Department, City of South Gate Community Development Department, and the City of Lynwood Building, Safety and Planning Division. The list of related projects that was determined by LLG to be applicable in the project site area is presented in ***Table 6–1***. The location of the related projects is shown in ***Figure 6–1***.

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*[3]. The related projects' respective traffic generation for the weekday AM and PM peak hours, as well as on a daily basis for a typical weekday, is summarized in *Table 6–1*. Related projects traffic volumes have been distributed and assigned to the adjacent street system based on considerations similar to the methodology used for the proposed project's traffic distribution and assignment as described in Section 7.2. The distribution of the related projects traffic volumes to the study

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

Table 6-1
RELATED PROJECTS LIST AND TRIP GENERATION [1]

01-Oct-18

MAP NO.	PROJECT NAME/ PROJECT NUMBER	PROJECT STATUS	ADDRESS/ LOCATION	LAND USE DATA		PROJECT DATA SOURCE	DAILY TRIP ENDS [2]	AM PEAK HOUR VOLUMES [2]			PM PEAK HOUR VOLUMES [2]		
				LAND-USE	SIZE		VOLUMES	IN	OUT	TOTAL	IN	OUT	TOTAL
City of Downey													
DO1	Burlington Coat Factory	Under Construction	8955 Apollo Way	Commercial	34,000 GLSF	[3]	1,284	20	12	32	62	68	130
DO2	The Promenade	Proposed	9080 Apollo Way	Commercial	21,000 GLSF	[3]	793	12	8	20	38	42	80
DO3	Fontana Townhomes Project	Proposed	8435 Fontana Street	Townhomes	8 DU	[4]	59	1	3	4	3	1	4
DO4	Olson Downtown Housing	Under Construction	8150 Third Street	Townhomes	28 DU	[4]	205	3	10	13	10	6	16
DO5	8117 Second Street Apartment Project	Under Construction	8117 Second Street	Apartments	6 DU	[4]	44	1	2	3	2	1	3
DO6	8028 Third Street Medical Office Project	Approved	8028 Third Street	Medical Office	3,750 GSF	[5]	131	8	2	10	4	9	13
DO7	Kaiser Permanente Downey Medical Center	Approved	9343 Imperial Highway	Hospital	141,364 GSF	[6]	1,515	86	40	126	44	93	137
DO8	Downey Medical Office	Proposed	9041 Imperial Highway	Medical Office Commercial	12,000 GSF (13,405) GLSF	[5] [3]	418 (506)	26 (8)	7 (5)	33 (13)	12 (24)	30 (27)	42 (51)
DO9	Stewart and Gray Condos	Approved	8104 Stewart and Gray Road	Townhomes Single-Family Home	3 DU (1) DU	[4] [7]	22 (9)	0 0	1 (1)	1 (1)	1 (1)	1 0	2 (1)
DO10	Marriott Springhill Suites	Proposed	9066 Firestone Boulevard	Hotel	140 Rooms	[8]	1,170	39	27	66	43	41	84
DO11	Centerpointe	Under Construction	10720 Paramount Boulevard	Townhomes	117 DU	[4]	856	12	42	54	42	24	66
DO12	Avenue Theater	Proposed	11022 Downey Avenue	Restaurant Entertainment Venue Theater	5,487 GSF 11,009 GSF (9,240) GSF	[9] [10] [11]	616 nom. (722)	30 nom. (1)	25 nom. (1)	55 nom. (2)	33 83 (54)	21 42 (3)	54 125 (57)
DO13	Woodruff Senior Housing Development	Proposed	12820 Woodruff Avenue	Senior Housing	62 DU	[12]	265	5	10	15	12	7	19
DO14	Western Avenue Townhome Project	Proposed	10345 Western Avenue	Townhomes	8 DU	[4]	59	1	3	4	3	1	4
DO15	Habitat for Humanity	Under Construction	9303 Elm Vista Drive	Townhomes	6 DU	[4]	44	1	2	3	2	1	3
DO16	Downey Oasis	Under Construction	9553 Firestone Boulevard	Condominiums	24 DU	[4]	176	3	8	11	8	5	13

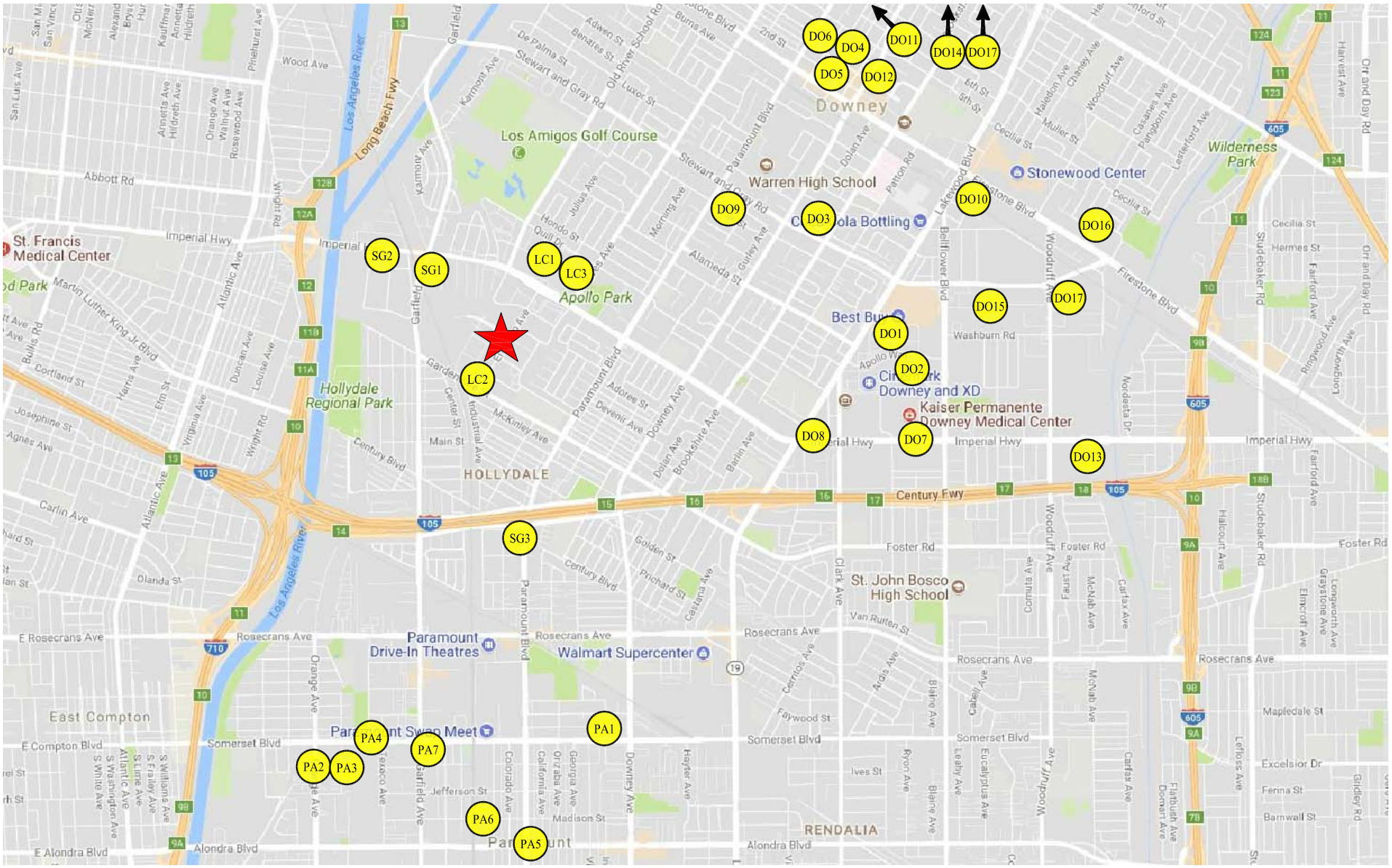
Table 6-1 (Continued)
RELATED PROJECTS LIST AND TRIP GENERATION [1]

MAP NO.	PROJECT NAME/ PROJECT NUMBER	PROJECT STATUS	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
DO17	12120 Woodruff Avenue Industrial Project	Proposed	12120 Woodruff Avenue	Light Industrial	20,000 GSF	[13]	100	12	2	14	2	11	13
DO18	Starbucks	Proposed	7966 Florence Avenue	Coffee Shop with Drive-Thru Window	1,785 GSF	[14]	1,464	81	78	159	39	38	77
City of South Gate													
SG1	10920 Garfield AvenueApartments Apartments Project	Proposed	10920 Garfield Avenue	Apartments	244 DU	[4]	1,786	26	86	112	86	51	137
SG2	PATH Villas at South Gate	Proposed	5610 Imperial Highway	Apartments	60 DU	[4]	439	6	22	28	21	13	34
SG3	Gateway Plaza	Proposed	13700 Paramount Boulevard	Commercial Condominiums	10,000 GLSF 48 DU	[3] [4]	378 351	6 5	3 17	9 22	18 17	20 10	38 27
City of Paramount													
PA1	15015-15029 Indiana Avenue Residential Project	Under Construction	15015-15029 Indiana Avenue	Condominiums	8 DU	[4]	59	1	3	4	3	1	4
PA2	15158-15302 Indiana Avenue Residential Project	Proposed	15158-15302 Orange Avenue	Apartments	11 DU	[4]	81	1	4	5	4	2	6
PA3	15301-15309 Gundry Avenue Residential Project	Proposed	15301-15309 Gundry Avenue	Apartments	4 DU	[4]	29	0	2	2	1	1	2
PA4	7203-7215 Somerset Boulevard Residential Project	Proposed	7203-7215 Somerset Boulevard	Single-Family Homes	12 DU	[7]	113	2	7	9	8	4	12
PA5	8009 Alondra Boulevard Restaurant Project	Proposed	8009 Alondra Boulevard	Restaurant	5,799 GSF	[9]	651	32	26	58	35	22	57
PA6	7755 Madison Street Industrial Project	Proposed	7755 Madison Street	Light Industrial	7,200 GSF	[13]	36	4	1	5	1	4	5
PA7	7518 Somerset Boulevard Industrial Project	Proposed	7518 Somerset Boulevard	Light Industrial	7,049 GSF	[13]	34	4	1	5	1	3	4

Table 6-1 (Continued)
RELATED PROJECTS LIST AND TRIP GENERATION [1]

MAP NO.	PROJECT NAME/ PROJECT NUMBER	PROJECT STATUS	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
County of Los Angeles													
LC1	Rancho Los Amigos National Rehabilitaion Center Consolidation Project	Under Construction	7601 E. Imperial Highway	Hospital Hospital	200 Beds (396) Beds	[6] [6]	4,464 (8,839)	265 (525)	103 (204)	368 (729)	106 (209)	272 (539)	378 (748)
LC2	Rancho Los Amigos South Campus Sports Center	Approved	Gardendale Street and Erickson Avenue	Sports Complex	3 Fields	[15]	214	2	1	3	32	17	49
LC3	Downey Recuperative Care Center	Proposed	7601 E. Imperial Highway	Rehabilitation Center Hospital	165 Beds (78,000) GSF	[16] [6]	429 (836)	20 (47)	11 (22)	31 (69)	16 (24)	27 (52)	43 (76)
TOTAL							7,373	134	336	470	480	268	748

[1] Source: County of Los Angeles Department of Public Works, City of Downey Related Projects List, City of South Gate Related Projects List, and City of Paramount Related Projects List.
[2] Trips are one-way traffic movements, entering or leaving.
[3] ITE Land Use Code 820 (Shopping Center) trip generation average rates.
[4] ITE Land Use Code 220 (Multifamily Housing [Low-Rise]) trip generation average rates.
[5] ITE Land Use Code 720 (Medical-Dental Office Building) trip generation average rates.
[6] ITE Land Use Code 610 (Hospital) trip generation average rates.
[7] ITE Land Use Code 210 (Single-Family Detached Housing) trip generation average rates.
[8] ITE Land Use Code 310 (Hotel) trip generation average rates.
[9] ITE Land Use Code 932 (High-Turnover [Sit-Down] Restaurant) trip generation equation rates.
[10] ITE Land Use Code 925 (Drinking Place) trip generation equation rates.
[11] ITE Land Use Code 444 (Movie Theater) trip generation average rates.
[12] ITE Land Use Code 251 (Senior Adult Housing - Detached) trip generation average rates.
[13] ITE Land Use Code 110 (General Light Industrial) trip generation average rates.
[14] ITE Land Use Code 937 (Coffee/Donut Shop with Drive-Through Window) trip generation equation rates.
[15] ITE Land Use Code 488 (Soccer Complex) trip generation average rates.
[16] ITE Land Use Code 254 (Assisted Living) trip generation average rates.
nom.=nominal



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MAP SOURCE: GOOGLE MAPS
PROJECT SITE
(XX) RELATED PROJECT

FIGURE 6-1
LOCATION OF RELATED PROJECTS

LINSCOTT, LAW & GREENSPAN, engineers

RANCHO LOS AMIGOS SOUTH CAMPUS

intersections during the weekday AM and PM peak hours are displayed in ***Figures 6–2*** and ***6–3***, respectively.

6.2 Ambient Traffic Growth Factor

In order to reflect the effects of overall regional growth both in and outside of the transportation study area, the existing traffic volumes at the 27 intersections were increased at an annual rate of 1.0 percent (1.0%) per year 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*[4] (the "CMP manual") and determined in consultation with LACDPW staff. It is noted that based on review of the general traffic growth factors provided in the CMP manual for the project study area (i.e., RSA 22, Downey) it is anticipated that the existing traffic volumes are expected to increase at an annual rate of approximately 0.61% per year between the years 2015 and 2025[5]. Thus, application of an annual growth factor of the 1.0% annual growth rate provides a conservative, worst-case forecast of future traffic volumes in the area as it substantially exceeds the annual traffic growth rate published in the CMP manual. 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 growth traffic factor based on CMP traffic model data results in a conservative estimate of future traffic volumes at the study intersections.

[4] The LA County Congestion Management Program is available online at: http://media.metro.net/docs/cmp_final_2010.pdf

[5] From a 2010 baseline, the CMP estimates total growth in RSA 22 of 1.052 % to 2015 and 1.116% to 2025. Therefore, ((1.116-1.052)/1.052)/10 years = 0.61% growth per year

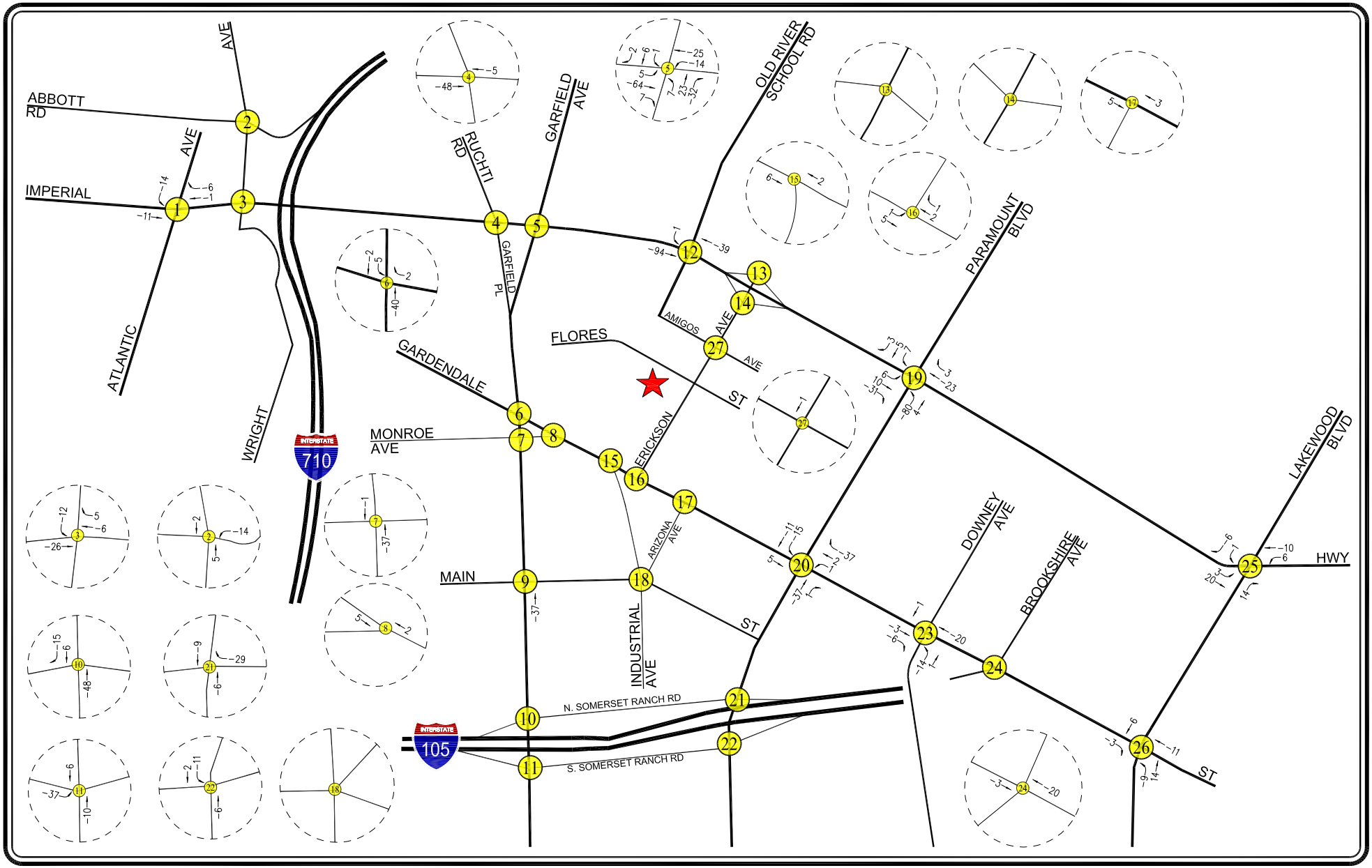
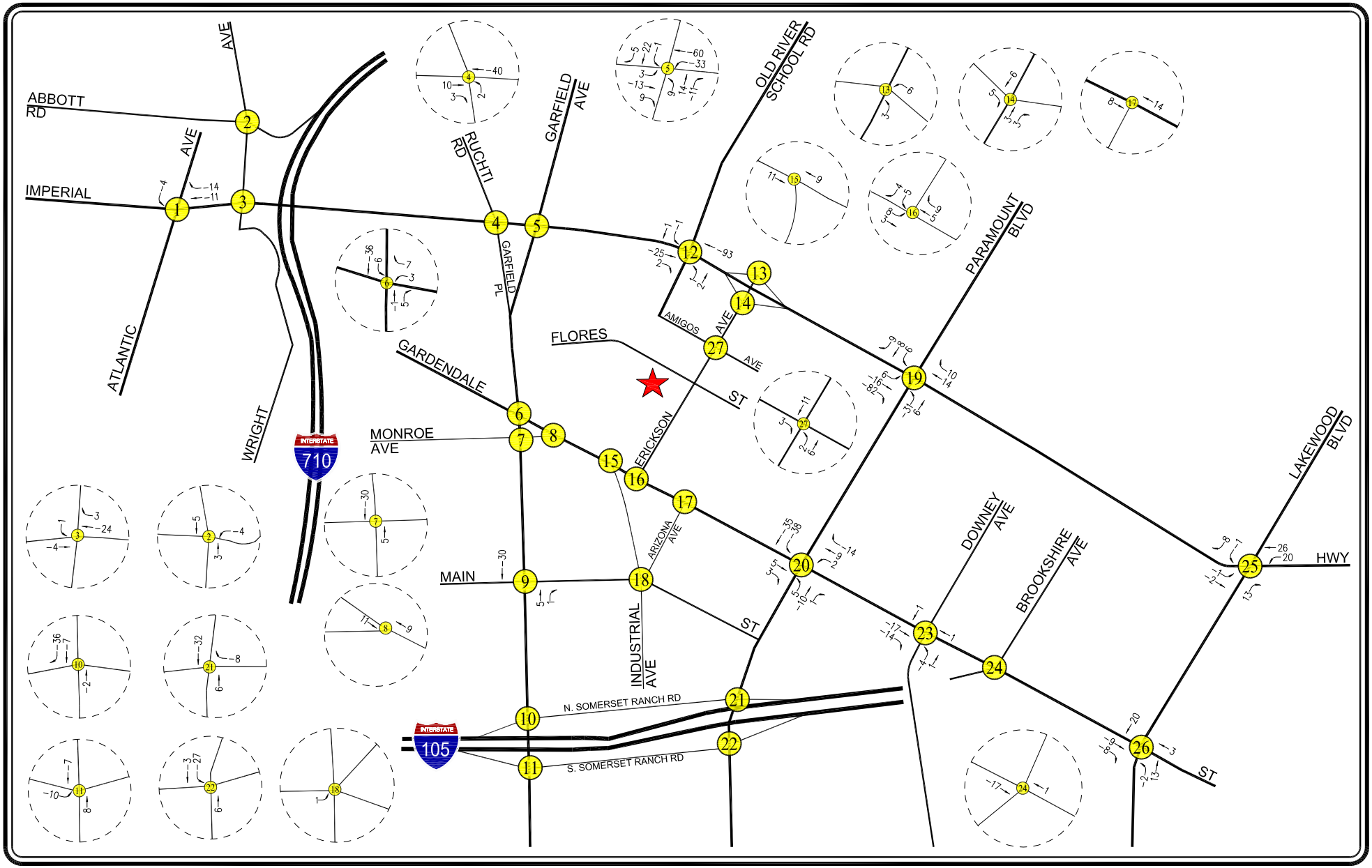


FIGURE 6-2
RELATED PROJECTS TRAFFIC VOLUMES

WEEKDAY AM PEAK HOUR
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PROJECT SITE
XX STUDY INTERSECTION

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FIGURE 6-3
RELATED PROJECTS TRAFFIC VOLUMES

WEEKDAY PM PEAK HOUR
RANCHO LOS AMIGOS SOUTH CAMPUS

LINSCOTT, LAW & GREENSPAN, engineers

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7.0 TRAFFIC FORECASTING METHODOLOGY

In order to estimate the traffic characteristics of the proposed 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.

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. Residential zip code data related to current County employees anticipated to work at the project site was also utilized for purposes of forecasting origins and destinations of project-related trips.

The third step is traffic assignment, which involves the allocation of project traffic to the 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. Consequently, the trip distribution considers traffic congestion in the area. 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.

7.1 Project Traffic Generation

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, were estimated using rates published in the ITE *Trip Generation* manual. The following trip generation rates were used to forecast the traffic volumes expected to be generated by the project land use component:

- County Administrative Buildings: ITE Land Use Code 710 (General Office Building) trip generation equation rates were used to forecast the traffic volumes expected to be generated by the proposed Rancho Los Amigos South Campus project.

The daily and peak hour trip generation forecast for the proposed project was submitted for review and approval by LACDPW Traffic and Lighting Division. As presented in ***Table 7–1***, the proposed project (i.e., new County administrative buildings serving up to 3,000 employees) is expected to generate 1,038 vehicle trips (913 inbound trips and 125 outbound trips) during the AM peak hour. During the PM peak hour, the proposed project is expected to generate 884 vehicle trips (150 inbound trips and 734 outbound trips). Over a 24-hour period, the proposed project is forecast to generate an increase of 7,443 daily trip ends (approximately 3,722 inbound trips and 3,721 outbound trips) during a typical weekday.

As stated above, the trip generation forecast provided in *Table 7–1* utilizes the proposed number of County employees (i.e., 3,000 employees) as the independent variable for purposes of calculating the number of vehicle trips that may be generated by the project. It is noted that the ITE *Trip Generation Manual* also provides trip rates under Land Use Code 710 based on the

Table 7-1
PROJECT TRIP GENERATION [1]

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LAND USE	SIZE	DAILY TRIP ENDS [2] VOLUMES	AM PEAK HOUR VOLUMES [2]			PM PEAK HOUR VOLUMES [2]		
			IN	OUT	TOTAL	IN	OUT	TOTAL
Proposed Project								
Rancho Los Amigos South Campus [3]	3,000 Employees	7,443	913	125	1,038	150	734	884
NET PROJECT TRIPS		**7,443**	**913**	**125**	**1,038**	**150**	**734**	**884**

[1] Source: ITE "Trip Generation Manual", 10th Edition, 2017.
[2] Trips are one-way traffic movements, entering or leaving.
[3] ITE Land Use Code 710 (General Office Building) trip generation equation rates rates.
- Daily Trip Rate: Ln(T) = 0.80*Ln(X) + 2.51 ; 50% inbound/50% outbound
- AM Peak Hour Trip Rate: Ln(T) = 0.79*Ln(X) + 0.62 ; 88% inbound/12% outbound
- PM Peak Hour Trip Rate: Ln(T) = 0.73*Ln(X) + 0.94 ; 17% inbound/83% outbound

amount of building floor area as the independent variable. If the ITE trip rates using the project floor area (650,000 square feet) as the independent variable were utilized, it would result in a forecast of 637 AM peak hour vehicle trips and 674 PM peak hour trips. As these floor area-based forecasts would result in fewer vehicle trips related to the project as compared to the forecasts based on the proposed number of employees (1,038 AM peak hour trips and 884 PM peak hour trips), LACDPW Traffic and Lighting Division staff directed that the forecasts using the employee-based trip rates be utilized so as to provide a conservative ("worst case") assessment of the potential traffic impacts due to the project.

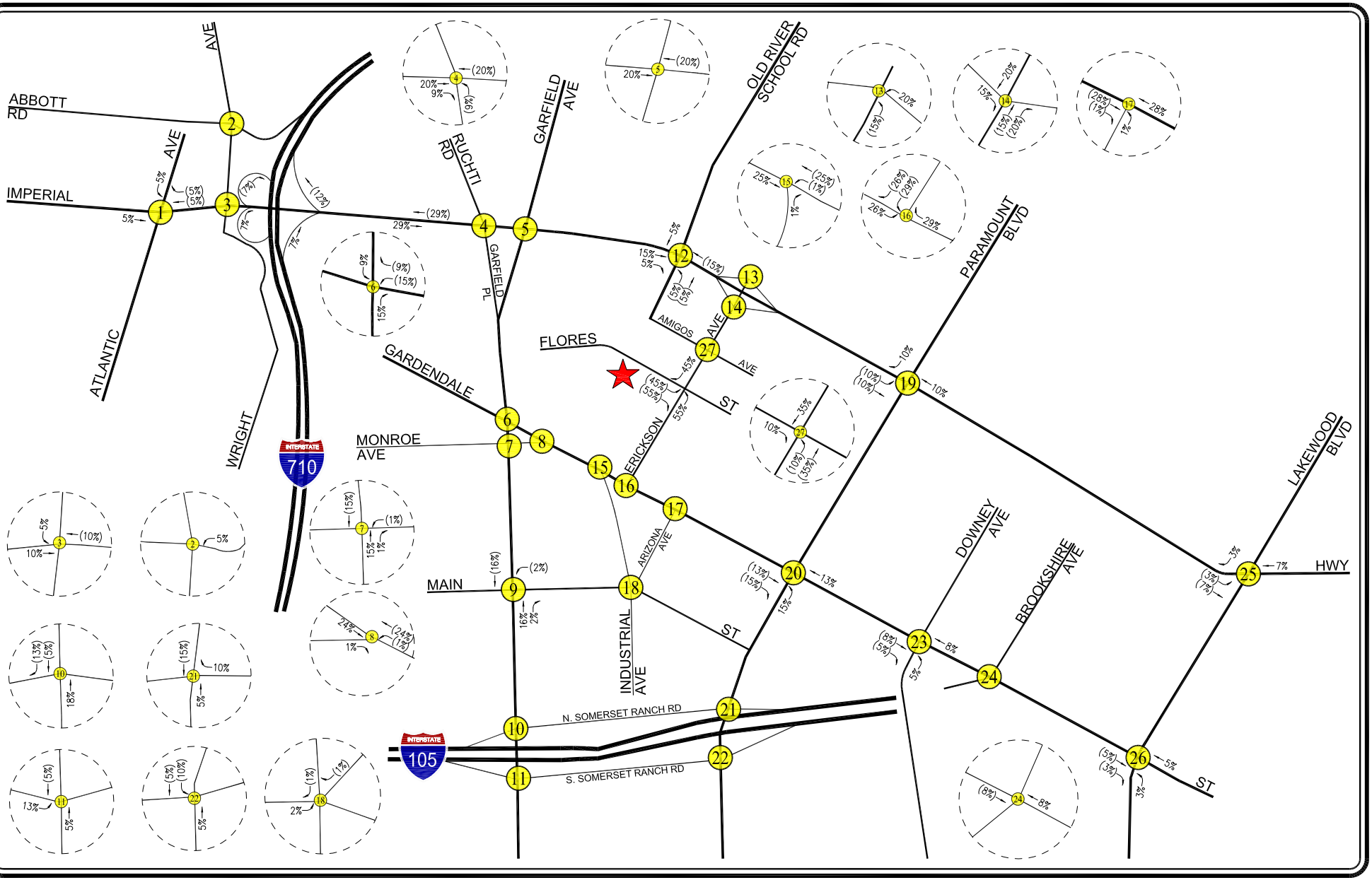
The *Trip Generation Manual* states that the driveway traffic count data used by ITE for purposes of establishing the trip generation rates was generally collected at suburban sites with little or no transit services and potential for trips made by other modes such as walking and bicycling. As previously described in Section 4.4, the site is well-served by public transit services. In addition, bicycle trips to and from the project may be facilitated by the current bike lanes provided on Gardendale Street adjacent to site. However, to provide a conservative, worst-case analysis of the potential vehicular traffic impacts related to the project, no reductions were made to the project trip generation forecast provided in *Table 7–1* related to potential trips that may be made by public transit, bicycling or other modes in lieu of the private automobile.

7.2 Project Traffic 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., Imperial Highway, Gardendale Street, Paramount Boulevard, I-105 Freeway, I-710 Freeway, etc.);
- Expected localized traffic flow patterns based on adjacent roadway channelization and presence of traffic signals;
- Existing intersection traffic volumes (i.e. existing congestion);
- Ingress/egress availability at the project site assuming the site access and circulation scheme described in Section 3.0;
- The residential zip code data related to current County employees anticipated to work at the project site;
- Nearby population and employment centers as well as adjacent residential neighborhoods; and
- Input from LACDPW Traffic and Lighting staff.

The directional traffic distribution patterns for the proposed project are presented in ***Figure 7–1***. The forecast net new weekday AM and PM peak hour project traffic volumes at the study intersections associated with the proposed project are presented in ***Figures 7–2*** and ***7–3***, respectively. The traffic volume assignments presented in *Figures 7–2* and *7–3* reflect the traffic distribution characteristics shown in *Figure 7–1* and the project traffic generation forecast presented in *Table 7–1*.



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★ PROJECT SITE

(XX) STUDY INTERSECTION

= INBOUND PERCENTAGES

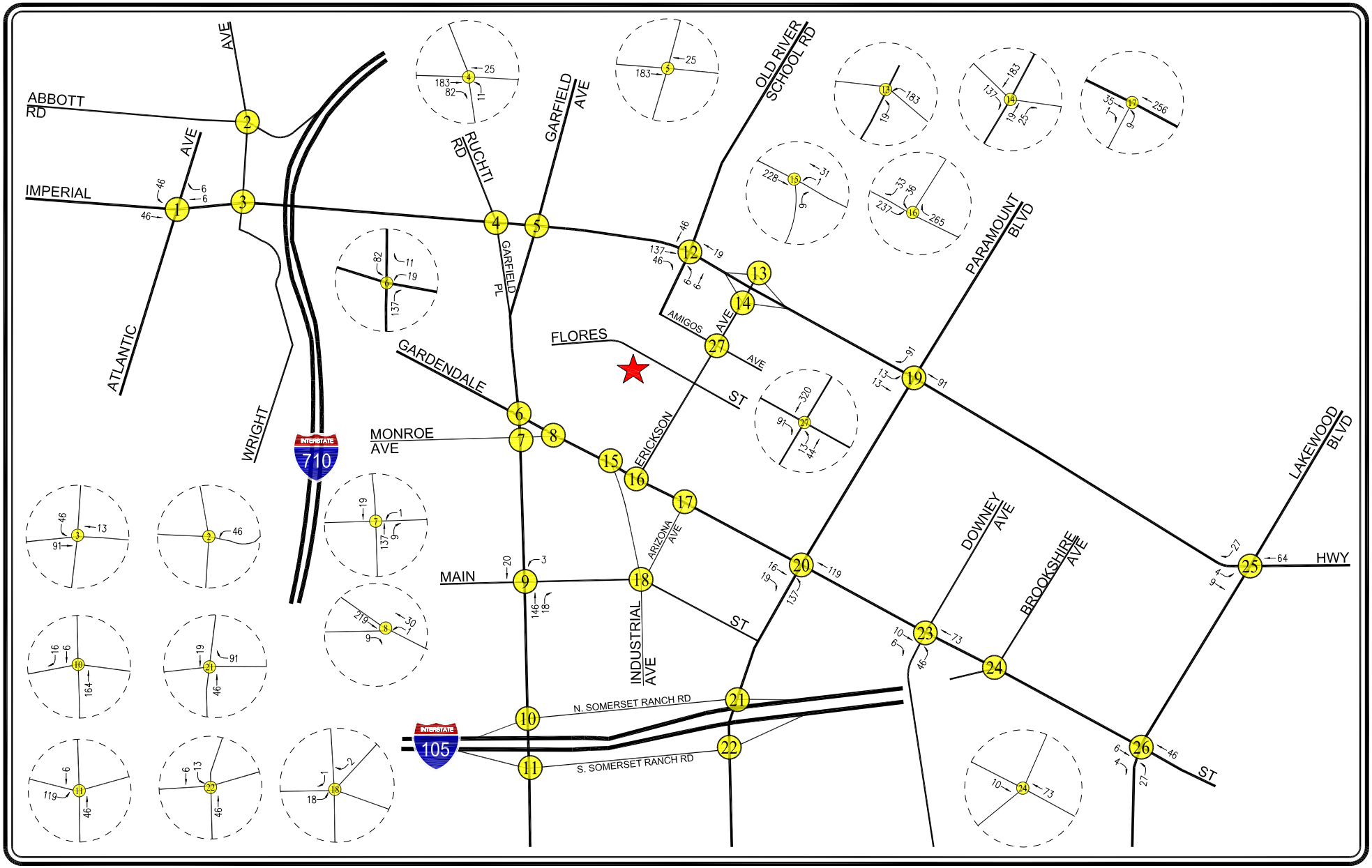
(##) = OUTBOUND PERCENTAGES

FIGURE 7-1
PROJECT TRIP DISTRIBUTION

LINSCOTT, LAW & GREENSPAN, engineers

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PROJECT SITE

XX STUDY INTERSECTION

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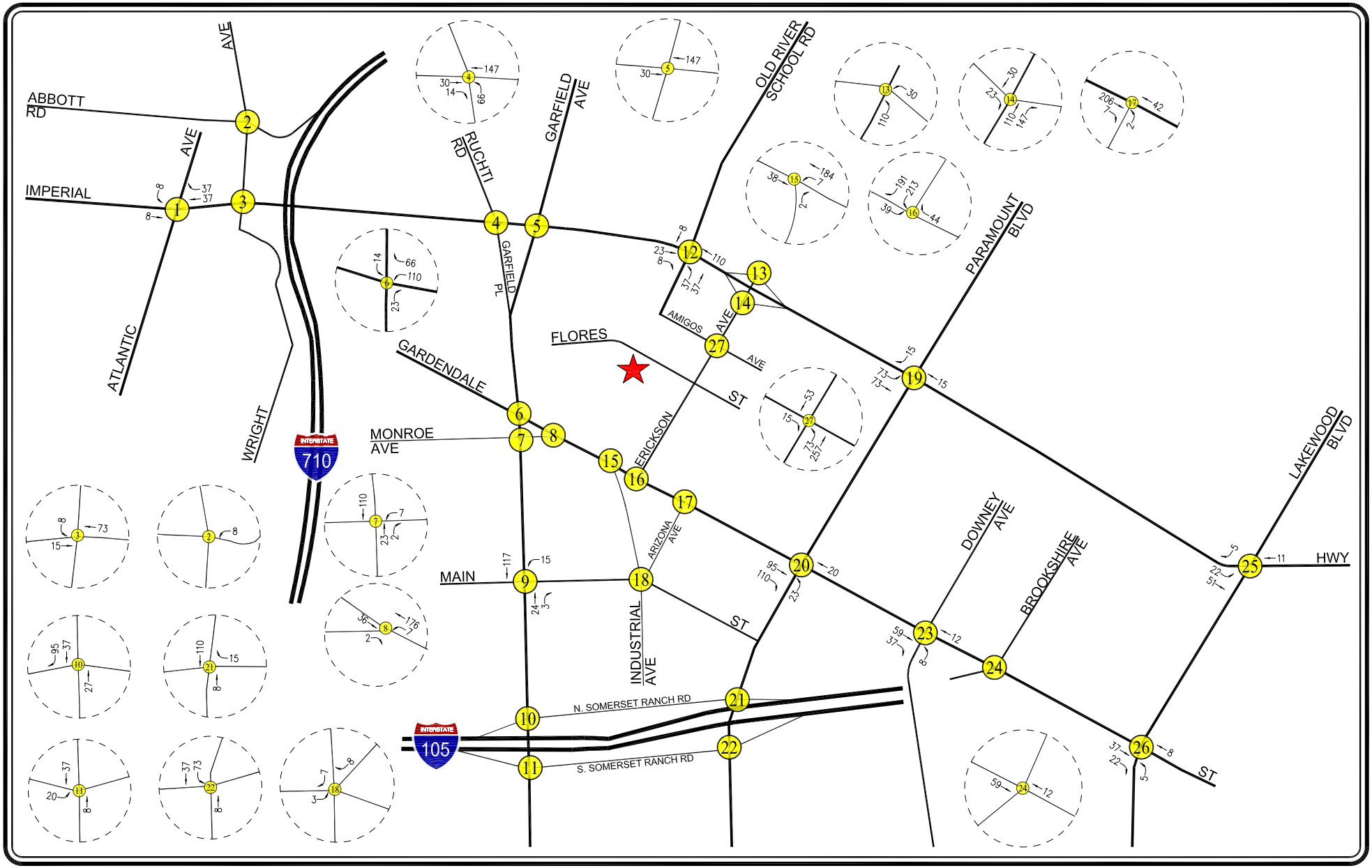
FIGURE 7-2
PROJECT TRAFFIC VOLUMES

WEEKDAY AM PEAK HOUR

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LINSCOTT, LAW & GREENSPAN, engineers

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PROJECT SITE

XX STUDY INTERSECTION

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FIGURE 7-3
PROJECT TRAFFIC VOLUMES

WEEKDAY PM PEAK HOUR

RANCHO LOS AMIGOS SOUTH CAMPUS

LINSCOTT, LAW & GREENSPAN, engineers

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8.0 TRAFFIC IMPACT ANALYSIS METHODOLOGY

Operations at the signalized study intersections located in the Cities of Downey, South Gate, and Paramount, as well as under the jurisdiction of the County of Los Angeles were evaluated using the Intersection Capacity Utilization (ICU) method of analysis based on the direction from the respective jurisdictions. Specifically, the ICU method was used to determine Volume-to-Capacity (*v/c*) ratios. The ICU calculations uses a lane capacity of 1,600 vehicles per hour (vph) for left-turn, through, and right-turn lanes. The overall intersection *v/c* ratio is subsequently assigned a LOS value to describe intersection operations.

The stop-controlled study intersections were evaluated using the Highway Capacity Manual (HCM) method of analysis based on guidelines provided by the Cities of Downey and South Gate and to determine the delay (in seconds) and corresponding LOS.

Operations at the study intersections located in the City of Lynwood were evaluated using the Critical Movement Analysis (CMA) method that determines (*v/c*) ratios on a critical lane basis in the City of Lynwood.

The LOS under the different methodologies vary from LOS A (free flow) to LOS F (congested condition). A description of the ICU method and corresponding LOS for the Cities of Downey, South Gate, Paramount, and the County of Los Angeles are provided in ***Appendix B***, ***C***, ***D***, ***and E***, respectively. A description of the HCM and CMA methods and corresponding LOS are provided in ***Appendix F***, and ***G***, respectively.

8.1 Impact Criteria and Thresholds

The relative impact of the added project traffic volumes that would be generated by the proposed project during the AM and PM peak hours was evaluated based on analysis of existing and future cumulative operating conditions at the study intersections, with the proposed project. The previously discussed capacity analysis procedures were utilized to evaluate the existing and future *v/c* relationships and service level characteristics at each study intersection.

The significance of the potential impacts of project generated operational traffic was identified using the transportation impact criteria provided by the Cities of Downey, South Gate, Paramount, and Lynwood, as well as the County of Los Angeles. The transportation impact thresholds of significance for Downey, South Gate, Paramount, Los Angeles County, and Lynwood are provided in ***Tables 8–1***, ***8–2***, ***8–3***, ***8–4***, and ***8–5***, respectively.

Table 8-1 CITY OF DOWNEY INTERSECTION IMPACT OPERATIONAL THRESHOLD CRITERIA[6]		
Final *v/c*	**Level of Service**	**Project Related Increase in *v/c***
> 1.00	F	equal to or greater than 0.02

Table 8-2 CITY OF SOUTH GATE INTERSECTION IMPACT OPERATIONAL THRESHOLD CRITERIA[7]		
Final *v/c*	**Level of Service**	**Project Related Increase in *v/c***
> 0.900	E or F	equal to or greater than 0.02

Table 8-3 CITY OF PARAMOUNT INTERSECTION IMPACT OPERATIONAL THRESHOLD CRITERIA[8]		
Baseline *v/c*	**Level of Service**	**Project Related Increase in *v/c***
> 0.701 - 0.800	C	equal to or greater than 0.040
> 0.801 - 0.900	D	equal to or greater than 0.020
> 0.901	E or F	equal to or greater than 0.010

Table 8-4 COUNTY OF LOS ANGELES INTERSECTION IMPACT OPERATIONAL THRESHOLD CRITERIA[9]		
Baseline *v/c*	**Level of Service**	**Project Related Increase in *v/c***
> 0.701 - 0.800	C	equal to or greater than 0.040
> 0.801 - 0.900	D	equal to or greater than 0.020
> 0.901	E or F	equal to or greater than 0.010

[6] Source for City of Downey operational threshold criteria: *2010 Congestion Management Program*, Los Angeles County Metropolitan Transportation Authority, 2010. Email correspondence transmitted to Edwin Norris, City of Downey Deputy Director of Public Works, dated February 1, 2018 to confirm threshold.
[7] Source for City of South Gate operational threshold criteria: *Guidelines for Development Traffic Impact Analysis*, City South Gate Department of Public Works, July 13, 2009.
[8] Source for City of Paramount operational threshold criteria: *City of Paramount General Plan*, August 2007.
[9] Source for County of Los Angeles operational threshold criteria: County of Los Angeles' *Traffic Impact Analysis Report Guidelines*, January 1997.

Table 8-5 CITY OF LYNWOOD INTERSECTION IMPACT OPERATIONAL THRESHOLD CRITERIA[10]		
Baseline *v/c*	**Level of Service**	**Project Related Increase in *v/c***
> 0.701 - 0.800	C	equal to or greater than 0.040
> 0.801 - 0.900	D	equal to or greater than 0.020
> 0.901	E or F	equal to or greater than 0.010

8.2 Traffic Impact Analysis Scenarios

8.2.1 *City of Downey Traffic Impact Analysis Scenarios*

Pursuant to direction from Staff at the City of Downey, LOS calculations have been prepared for the following scenarios for the study intersections located within the City of Downey:

(a) Existing (2017) conditions.
(b) Condition (a) with completion and occupancy of the project.
(c) Condition (b) with implementation of project mitigation measures where necessary.
(d) Condition (a) plus ambient traffic growth through year 2021 and with completion and occupancy of the related projects (i.e., future cumulative without project)
(e) Condition (d) with completion and occupancy of the project.
(f) Condition (e) with implementation of project mitigation measures where necessary.

8.2.2 *City of South Gate Traffic Impact Analysis Scenarios*

Pursuant to direction from Staff at the City of South Gate, LOS calculations have been prepared for the following scenarios for the study intersections located within the City of South Gate:

(a) Existing (2017) conditions.
(b) Condition (a) with completion and occupancy of the project.
(c) Condition (b) with implementation of project mitigation measures where necessary.
(d) Condition (a) ambient traffic growth through year 2021 and with completion and occupancy of the related projects (i.e., future cumulative without project)
(e) Condition (d) with completion and occupancy of the project.

[10] Source for City of Lynwood operational threshold criteria: Email correspondence with City of Lynwood Staff, November 21, 2017.

(f) Condition (e) with implementation of project mitigation measures where necessary.

8.2.3 *City of Paramount Traffic Impact Analysis Scenarios*

Pursuant to direction from Staff at the City of Paramount, LOS calculations have been prepared for the following scenarios for the study intersections located within the City of Paramount:

(a) Existing (2017) conditions.

(b) Existing (2017) conditions with completion and occupancy of the project.

(c) Condition (b) with implementation of project traffic mitigation measures, where necessary.

(d) Future (2021) conditions with completion and occupancy of the project and related projects.

(e) Condition (d) with implementation of regional traffic mitigation measures, where necessary.

8.2.4 *County of Los Angeles Traffic Impact Analysis Scenarios*

Pursuant to direction from LACDPW's traffic study, LOS calculations have been prepared for the following scenarios for the study intersections located within the County of Los Angeles:

(a) Existing (2017) conditions.

(b) Existing (2017) conditions with completion and occupancy of the project.

(c) Condition (b) with implementation of project traffic mitigation measures, where necessary.

(d) Future (2021) conditions with completion and occupancy of the project and related projects.

(e) Condition (d) with implementation of regional traffic mitigation measures, where necessary.

8.2.5 *City of Lynwood Traffic Impact Analysis Scenarios*

Pursuant to direction from Staff at the City of Lynwood, LOS calculations have been prepared for the following scenarios for the study intersections located within the City of Lynwood:

(a) Existing conditions.
(b) Condition (a) with completion and occupancy of the project.
(c) Condition (b) with implementation of project mitigation measures where necessary.
(d) Condition (a) plus ambient traffic growth through year 2021 and with completion and occupancy of the related projects (i.e., future cumulative without project)
(e) Condition (d) with completion and occupancy of the 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.

9.0 CITY OF DOWNEY TRAFFIC ANALYSIS

The traffic impact analysis prepared for the 14 study intersections located within the City of Downey using the ICU methodology for signalized intersections and HCM methodology for unsignalized intersections, and application of the City of Downey significant traffic impact criteria is summarized in ***Table 9–1***. The ICU and HCM data worksheets for the 14 analyzed intersections are contained in *Appendix B* and *F*, respectively.

9.1 Existing Conditions

9.1.1 *Existing Conditions*

As indicated in column [1] of *Table 9–1*, 13 of the 14 study intersections located in the City of Downey are presently operating at LOS D or better during the weekday AM and PM peak hours under existing conditions. The following unsignalized intersection currently operates at LOS E or worse during the peak hour shown below under existing conditions:

- Int. No. 15: Industrial Avenue / Gardendale Street — AM Peak Hour: *v/c* = 0.684, Delay = 37.4 seconds, LOS E

The existing traffic volumes at the study intersections during the weekday AM and PM peak hours are displayed in *Figures 5–1* and *5–2*, respectively.

9.1.2 *Existing With Project Conditions*

As shown in column [2] of *Table 9–1,* application of the City's threshold criteria to the "Existing With Project" scenario indicates that the proposed project is not expected to create significant impacts at 12 of the 14 study intersections located in the City of Downey. As indicated in *Table 9–1*, a significant transportation impact is expected at the following two unsignalized intersections during the peak hours shown below under existing with project conditions:

- Int. No. 15: Industrial Avenue / Gardendale Street — AM Peak Hour *v/c* increases 0.025
- Int. No. 16: Erickson Avenue / Gardendale Street — AM Peak Hour *v/c* increases 0.170, PM Peak Hour *v/c* increased 0.134

Incremental, but not significant, impacts are noted at the other 12 study intersections due to the project. The existing with project traffic volumes at the study intersections during the weekday AM and PM peak hours are illustrated in ***Figures 9–1*** and ***9–2***, respectively.

9.2 Future Cumulative Conditions

9.2.1 *Future Cumulative Without Project Conditions*

The future cumulative without project conditions were forecast based on the addition of the traffic generated by cumulative growth rates and the completion and occupancy of the other related projects. The *v/c* ratios and delay value at the study intersections are incrementally increased with the addition of traffic generated by cumulative growth and the related projects

Table 9-1
SUMMARY OF VOLUME TO CAPACITY RATIOS
AND LEVELS OF SERVICE
AM AND PM PEAK HOURS
CITY OF DOWNEY INTERSECTIONS

17-Jun-19

NO.	INTERSECTION	PEAK HOUR	[1] YEAR 2017 EXISTING DELAY OR V/C	LOS	[2] YEAR 2017 EXISTING W/ PROJECT DELAY OR V/C	LOS	CHANGE IN DELAY OR V/C [(2)-(1)]	SIGNIF. IMPACT [a]	[3] YEAR 2021 FUTURE PRE-PROJECT DELAY OR V/C	LOS	[4] YEAR 2021 FUTURE W/ PROJECT DELAY OR V/C	LOS	CHANGE IN DELAY OR V/C [(4)-(3)]	SIGNIF. IMPACT [a]	[5] YEAR 2021 W/ PROJECT MITIGATION V/C	LOS	CHANGE V/C [(5)-(3)]	MITI-GATED
6	Garfield Avenue /	AM	0.673	B	0.750	C	0.077	NO	0.684	B	0.762	C	0.078	NO	0.762	C	0.078	N/A
	Gardendale Street	PM	0.568	A	0.648	B	0.080	NO	0.592	A	0.672	B	0.080	NO	0.672	B	0.080	N/A
12	Old River School Road /	AM	0.883	D	0.891	D	0.008	NO	0.906	E	0.914	E	0.008	NO	0.914	E	0.008	N/A
	Imperial Highway	PM	0.789	C	0.835	D	0.046	NO	0.798	C	0.844	D	0.046	NO	0.844	D	0.046	N/A
13	Erickson Avenue /	AM	9.6	A	14.0	B	----	----	9.7	A	14.4	B	----	----	14.4	B	----	----
	W. Imperial Highway [c]	PM	8.3	A	9.5	A	----	----	8.4	A	9.6	B	----	----	9.6	B	----	----
		AM	0.269	----	0.389	----	0.120	NO	0.276	----	0.396	----	0.120	NO	0.396	----	0.120	N/A
		PM	0.193	----	0.246	----	0.053	NO	0.201	----	0.254	----	0.053	NO	0.254	----	0.053	N/A
14	Erickson Avenue /	AM	8.6	A	10.9	B	----	----	8.6	A	11.1	B	----	----	11.1	B	----	----
	E. Imperial Highway [c]	PM	8.2	A	10.1	B	----	----	8.3	A	10.4	B	----	----	10.4	B	----	----
		AM	0.238	----	0.380	----	0.142	NO	0.243	----	0.386	----	0.143	NO	0.386	----	0.143	N/A
		PM	0.231	----	0.326	----	0.095	NO	0.241	----	0.336	----	0.095	NO	0.336	----	0.095	N/A
15	Industrial Avenue /	AM	37.4	E	> 50.0	F	----	----	42.3	E	> 50.0	F	----	----	> 50.0	F	----	----
	Gardendale Street [b]	PM	20.4	C	26.3	D	----	----	22.1	C	28.9	D	----	----	28.9	D	----	----
		AM	0.684	----	0.709	----	0.025	YES	0.709	----	0.734	----	0.025	YES	0.734	----	0.025	NO
		PM	0.526	----	0.555	----	0.029	NO	0.550	----	0.579	----	0.029	NO	0.579	----	0.029	N/A

Table 9-1 (Continued)
SUMMARY OF VOLUME TO CAPACITY RATIOS
AND LEVELS OF SERVICE
AM AND PM PEAK HOURS
CITY OF DOWNEY INTERSECTIONS

			[1]		[2]				[3]		[4]				[5]			
NO.	INTERSECTION	PEAK HOUR	YEAR 2017 EXISTING DELAY OR V/C	LOS	YEAR 2017 EXISTING W/ PROJECT DELAY OR V/C	LOS	CHANGE IN DELAY OR V/C [(2)-(1)]	SIGNIF. IMPACT [a]	YEAR 2021 FUTURE PRE-PROJECT DELAY OR V/C	LOS	YEAR 2021 FUTURE W/ PROJECT DELAY OR V/C	LOS	CHANGE IN DELAY OR V/C [(4)-(3)]	SIGNIF. IMPACT [a]	YEAR 2021 W/ PROJECT MITIGATION V/C	LOS	CHANGE V/C [(5)-(3)]	MITI-GATED
16	Erickson Avenue /	AM	30.9	D	> 50.0	F	----	----	33.5	C	> 50.0	F	----	----	----	----	----	----
	Gardendale Street [b]	PM	20.2	C	> 50.0	F	----	----	17.4	C	> 50.0	F	----	----	----	----	----	----
		AM	0.663	----	0.833	----	0.170	YES	0.687	----	0.858	----	0.171	YES	0.858	D	0.171	YES
		PM	0.474	----	0.608	----	0.134	YES	0.494	----	0.627	----	0.133	YES	0.627	B	0.133	YES
17	Arizona Avenue /	AM	24.2	C	44.2	E	----	----	26.7	D	> 50.0	F	----	----	> 50.0	F	----	----
	Gardendale Street [b]	PM	13.9	B	18.2	C	----	----	14.5	B	19.1	C	----	----	19.1	C	----	----
		AM	0.679	----	0.845	----	0.166	NO	0.704	----	0.870	----	0.166	YES	0.870	----	0.166	NO
		PM	0.509	----	0.643	----	0.134	NO	0.530	----	0.664	----	0.134	NO	0.664	----	0.134	N/A
19	Paramount Boulevard /	AM	0.820	D	0.843	D	0.023	NO	0.839	D	0.862	D	0.023	NO	0.862	D	0.023	N/A
	Imperial Highway	PM	0.843	D	0.859	D	0.016	NO	0.858	D	0.874	D	0.016	NO	0.874	D	0.016	N/A
20	Paramount Boulevard /	AM	0.733	C	0.854	D	0.121	NO	0.758	C	0.877	D	0.119	NO	0.877	D	0.119	N/A
	Gardendale Street	PM	0.736	C	0.800	C	0.064	NO	0.739	C	0.803	D	0.064	NO	0.803	D	0.064	N/A
23	Downey Avenue /	AM	0.591	A	0.637	B	0.046	NO	0.605	B	0.642	B	0.037	NO	0.642	B	0.037	N/A
	Gardendale Street	PM	0.565	A	0.591	A	0.026	NO	0.584	A	0.600	A	0.016	NO	0.600	A	0.016	N/A
24	Brookshire Avenue-N. Somerset Ranch Road /	AM	0.594	A	0.617	B	0.023	NO	0.608	B	0.630	B	0.022	NO	0.630	B	0.022	N/A
	Gardendale Street	PM	0.581	A	0.585	A	0.004	NO	0.600	A	0.604	B	0.004	NO	0.604	B	0.004	N/A

Table 9-1 (Continued)
SUMMARY OF VOLUME TO CAPACITY RATIOS
AND LEVELS OF SERVICE
AM AND PM PEAK HOURS
CITY OF DOWNEY INTERSECTIONS

NO.	INTERSECTION	PEAK HOUR	[1] YEAR 2017 EXISTING DELAY OR V/C	LOS	[2] YEAR 2017 EXISTING W/ PROJECT DELAY OR V/C	LOS	CHANGE IN DELAY OR V/C [(2)-(1)]	SIGNIF. IMPACT [a]	[3] YEAR 2021 FUTURE PRE-PROJECT DELAY OR V/C	LOS	[4] YEAR 2021 FUTURE W/ PROJECT DELAY OR V/C	LOS	CHANGE IN DELAY OR V/C [(4)-(3)]	SIGNIF. IMPACT [a]	[5] YEAR 2021 W/ PROJECT MITIGATION V/C	LOS	CHANGE V/C [(5)-(3)]	MITI-GATED
25	Lakewood Boulevard /	AM	0.741	C	0.745	C	0.004	NO	0.778	C	0.780	C	0.002	NO	0.780	C	0.002	N/A
	Imperial Highway	PM	0.803	D	0.815	D	0.012	NO	0.845	D	0.857	D	0.012	NO	0.857	D	0.012	N/A
26	Lakewood Boulevard /	AM	0.795	C	0.815	D	0.020	NO	0.818	D	0.838	D	0.020	NO	0.838	D	0.020	N/A
	Gardendale Street	PM	0.767	C	0.788	C	0.021	NO	0.793	C	0.814	D	0.021	NO	0.814	D	0.021	N/A
27	Erickson Avenue /	AM	8.0	A	9.9	A	----	----	8.0	A	10.1	B	----	----	10.1	B	----	----
	Amigos Avenue [c]	PM	7.8	A	9.2	A	----	----	7.9	A	9.3	B	----	----	9.3	B	----	----
		AM	0.177	----	0.313	----	0.136	NO	0.179	----	0.316	----	0.137	NO	0.316	----	0.137	N/A
		PM	0.153	----	0.238	----	0.085	NO	0.158	----	0.243	----	0.085	NO	0.243	----	0.085	N/A

[a] According to the City of Downey, a transportation impact on an intersection shall be deemed significant in accordance with the following table:

Final V/C	LOS	Project Related Increase in V/C
> 1.00	F	equal to or greater than 0.020

[b] Two-Way Stop-Controlled Intersection. Reported values represent the delays associated with the most constrained approach of the intersection.
[c] All-Way Stop-Controlled Intersection.

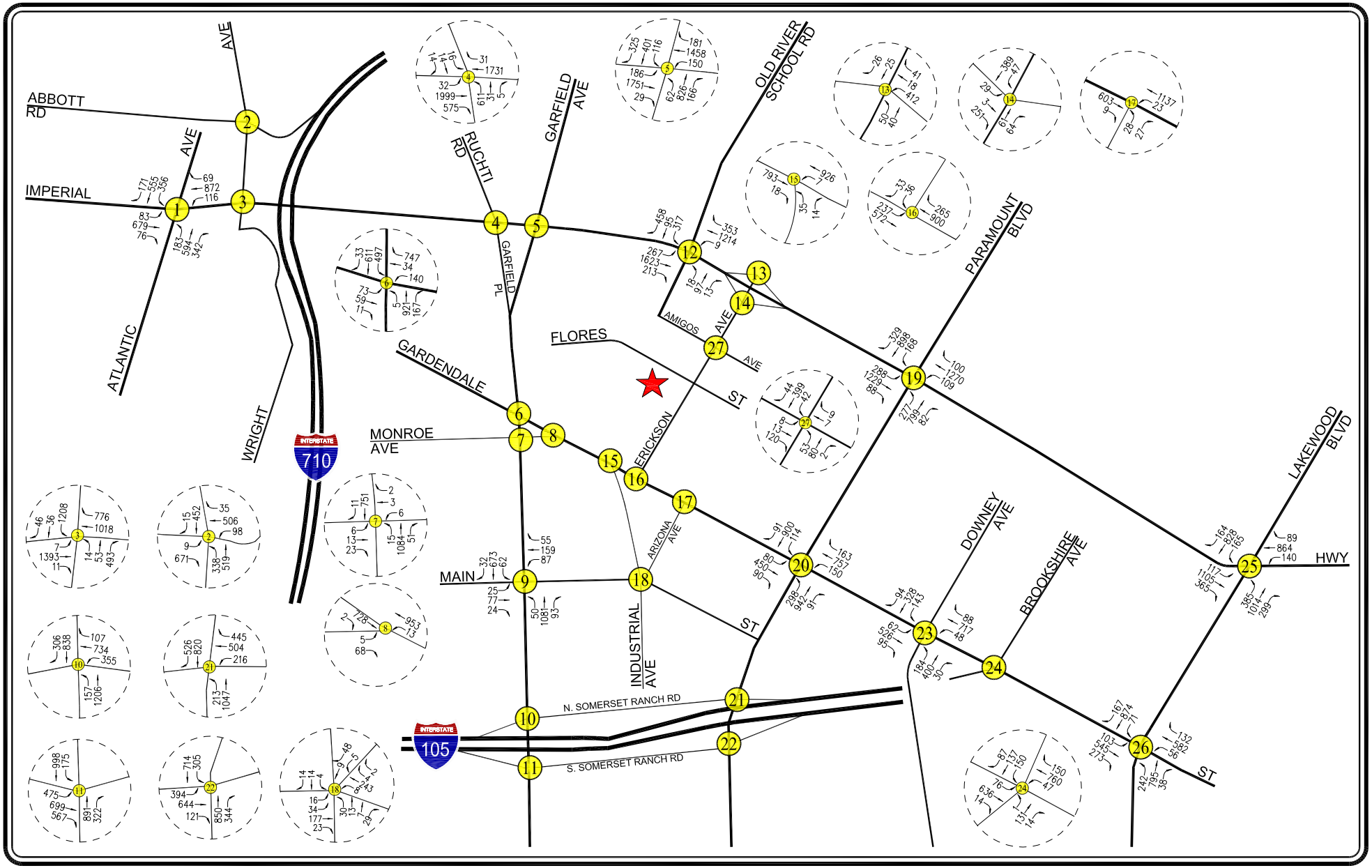
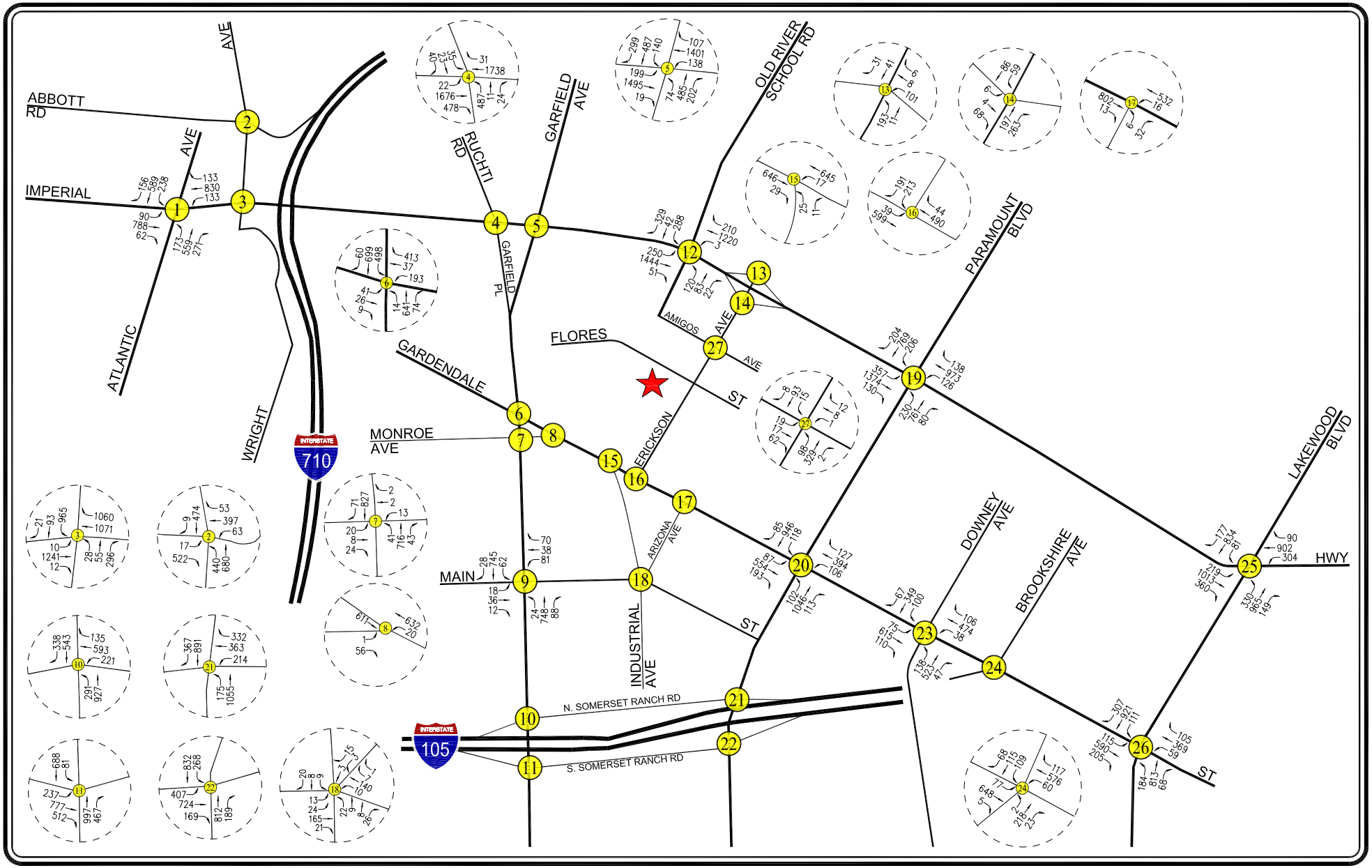


FIGURE 9-1
EXISTING WITH PROJECT TRAFFIC VOLUMES

WEEKDAY AM PEAK HOUR
RANCHO LOS AMIGOS SOUTH CAMPUS

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PROJECT SITE
STUDY INTERSECTION

N
NOT TO SCALE

FIGURE 9-2
EXISTING WITH PROJECT TRAFFIC VOLUMES

WEEKDAY PM PEAK HOUR
RANCHO LOS AMIGOS SOUTH CAMPUS

LINSCOTT, LAW & GREENSPAN, engineers

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(including the project) listed in *Table 6–1*. As indicated in *Table 9–1*, incremental changes in *v/c* ratios are noted at the all of the study intersections due to the cumulative developments in the project vicinity.

As presented in column [3] of *Table 9–1*, 12 of the 14 study intersections are expected to operate at LOS D or better during the weekday AM and PM peak hours with the addition of growth in ambient traffic and related project traffic under the future cumulative without project conditions. The following two intersections, one signalized and one unsignalized, are expected to operate at LOS E or worse during the peak hour shown below under future cumulative without project conditions:

- Int. No. 12: Old River School Road / Imperial Highway — AM Peak Hour: *v/c* = 0.906, LOS E
- Int. No. 15: Industrial Avenue / Gardendale Street — AM Peak Hour: *v/c* = 0.709, Delay = 42.3 seconds, LOS E

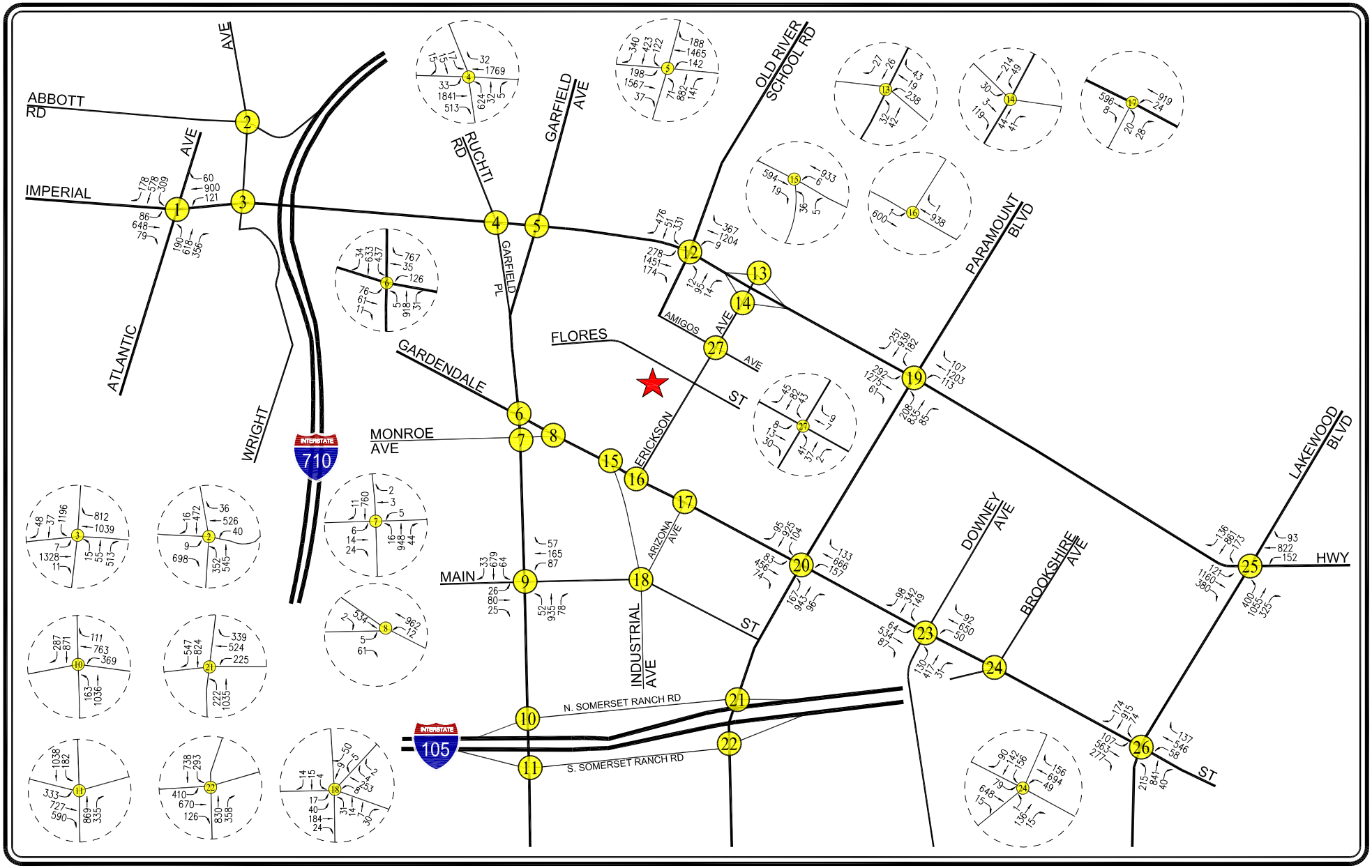
The future cumulative without project traffic volumes at the study intersections during the AM and PM peak hours are illustrated in ***Figures 9–3*** and ***9–4***, respectively.

9.2.2 *Future Cumulative With Project Conditions*

The future cumulative with project conditions were forecast based on the addition of traffic generated by the project plus annual ambient growth rates, plus completion and occupancy of other related projects. As shown in column [4] of *Table 9–1,* application of the City's threshold criteria to the "Future With Project" scenario as compared to the "Future Cumulative Without Project" scenario indicates that the proposed project is not expected to create a significant impact at 11 of the 14 study intersections located in the City of Downey. As indicated in *Table 9–1*, a significant transportation impact is expected at the following three unsignalized intersections during the peak hours shown below under future cumulative with project conditions:

- Int. No. 15: Industrial Avenue / Gardendale Street — AM Peak Hour *v/c* increases 0.025
- Int. No. 16: Erickson Avenue / Gardendale Street — AM Peak Hour *v/c* increases 0.171, PM Peak Hour *v/c* increased 0.133
- Int. No. 17: Arizona Avenue / Gardendale Street — AM Peak Hour *v/c* increases 0.166

Incremental, but not significant, impacts are noted at the other 11 study intersections due to the project. 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 illustrated in ***Figures 9–5* and *9–6***, respectively.



PROJECT SITE

STUDY INTERSECTION

N

NOT TO SCALE

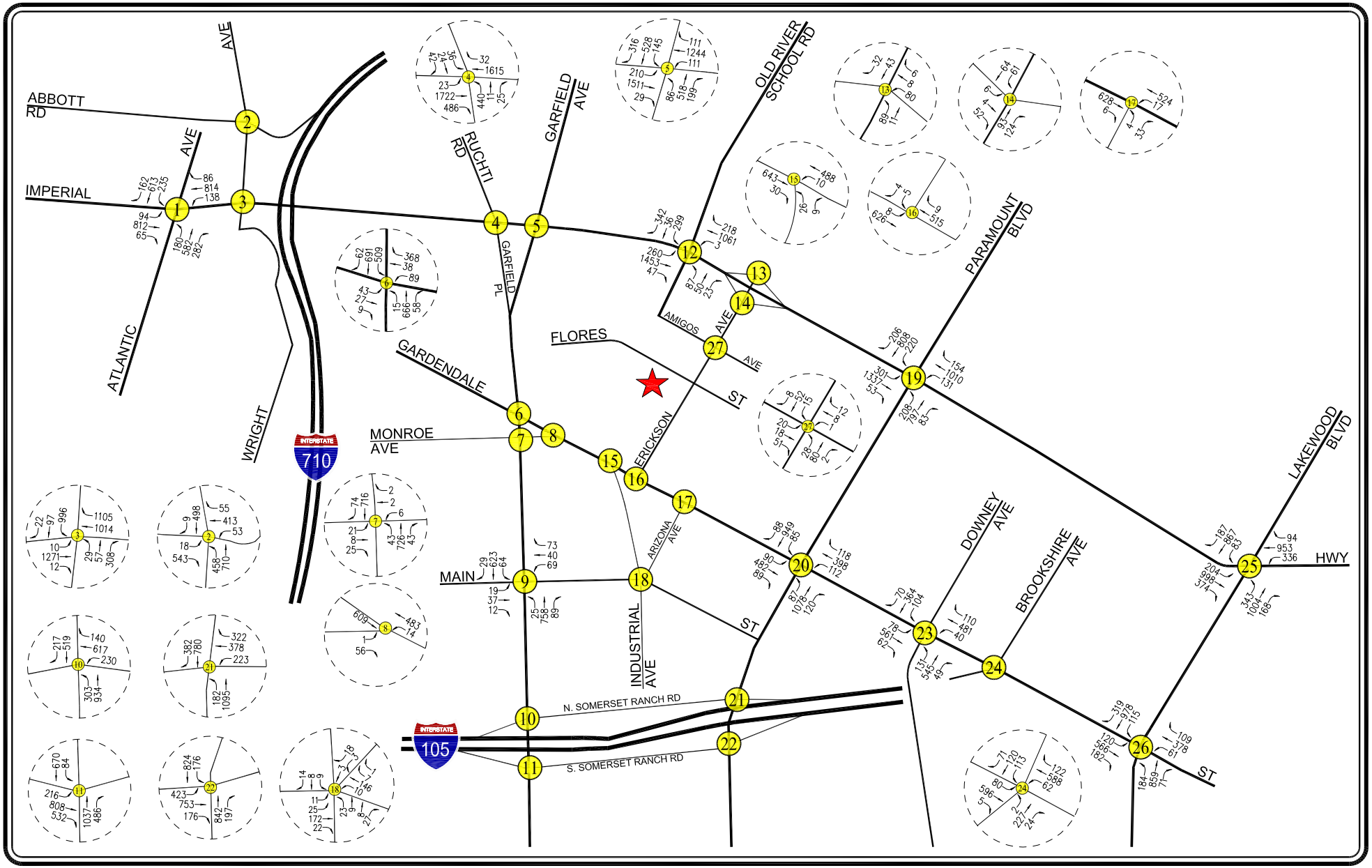
FIGURE 9-3
FUTURE CUMULATIVE WITHOUT PROJECT TRAFFIC VOLUMES

WEEKDAY AM PEAK HOUR

RANCHO LOS AMIGOS SOUTH CAMPUS

LINSCOTT, LAW & GREENSPAN, engineers

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PROJECT SITE

XX STUDY INTERSECTION

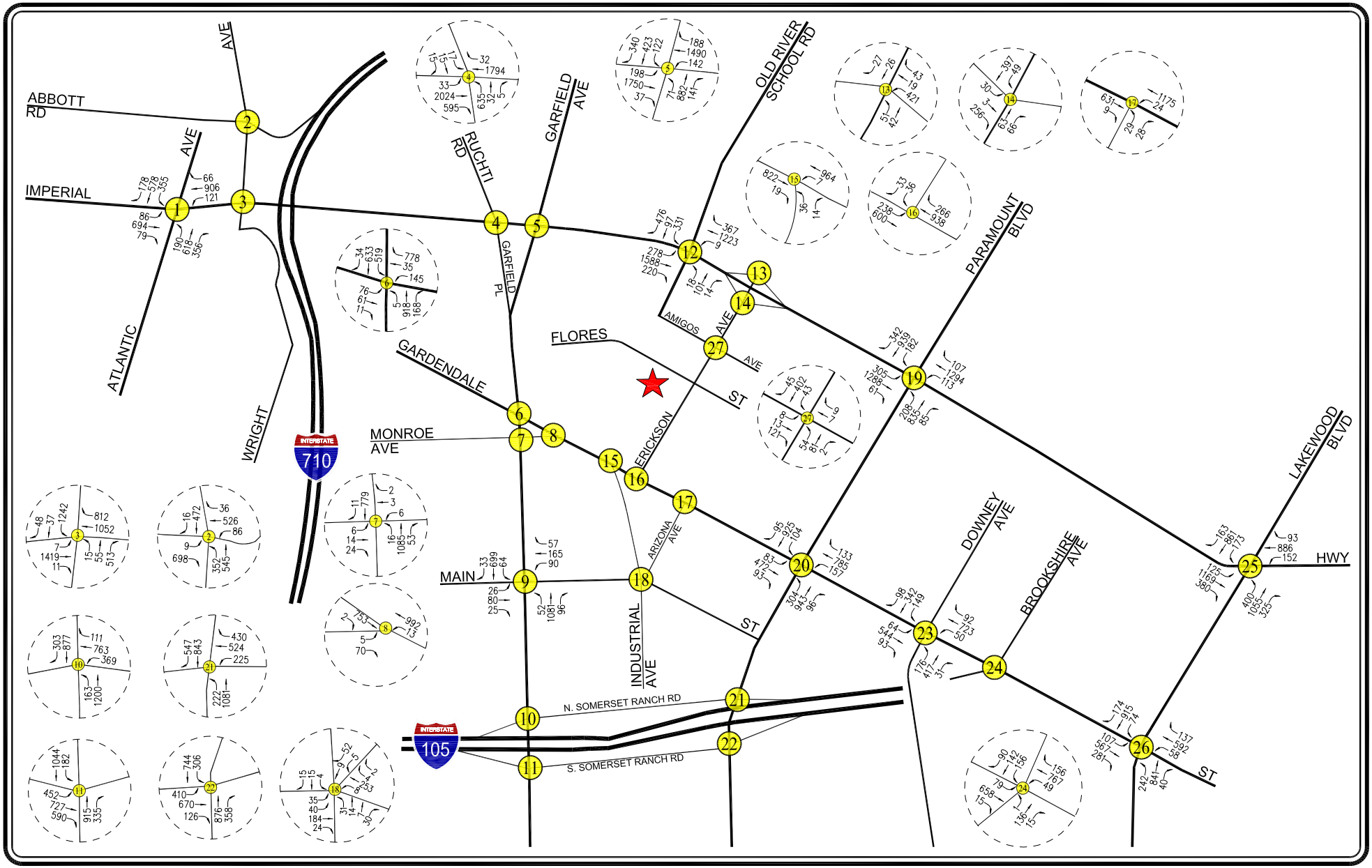
N

NOT TO SCALE

FIGURE 9-4
FUTURE CUMULATIVE WITHOUT PROJECT TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR
RANCHO LOS AMIGOS SOUTH CAMPUS

LINSCOTT, LAW & GREENSPAN, engineers

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PROJECT SITE

STUDY INTERSECTION

N

NOT TO SCALE

FIGURE 9-5

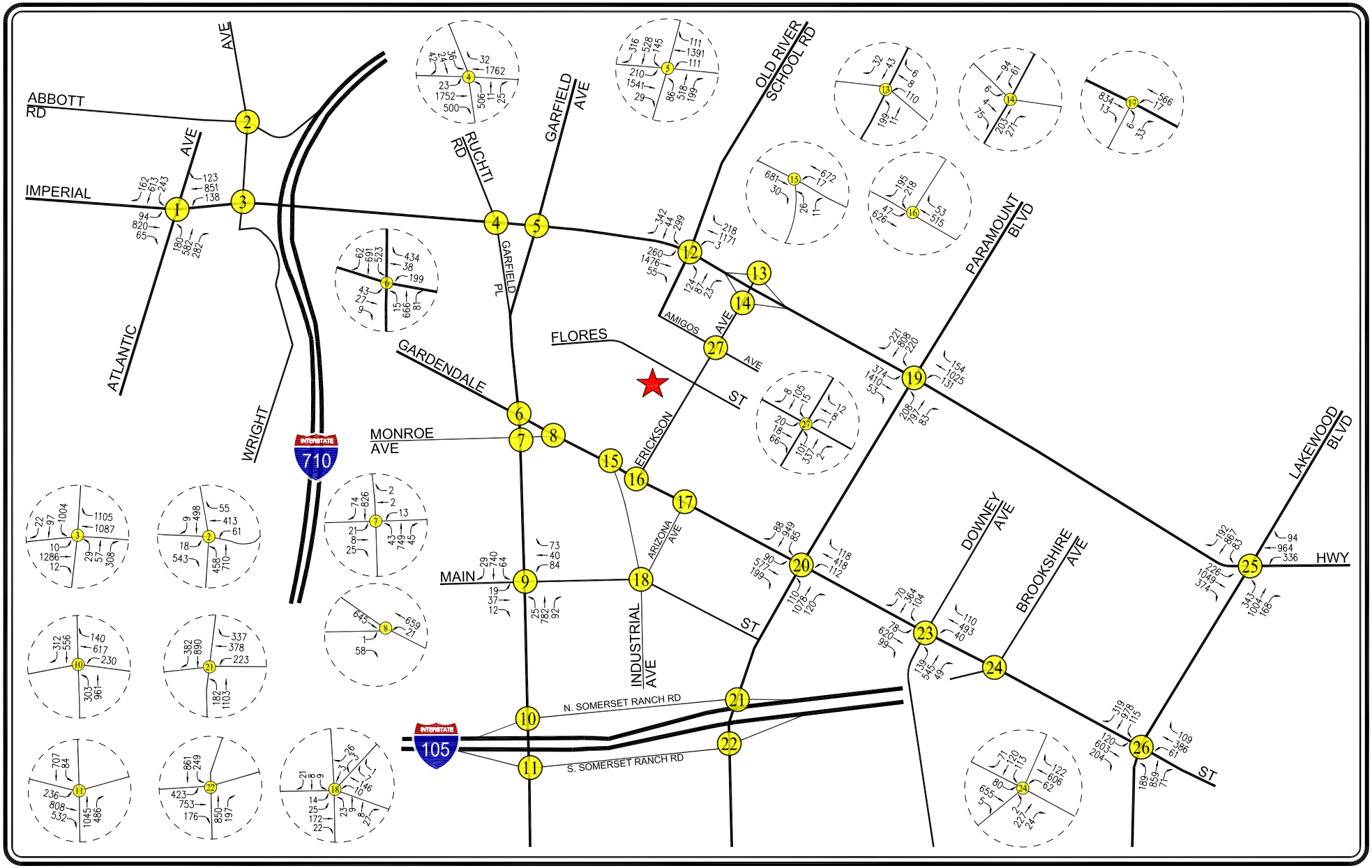
FUTURE CUMULATIVE WITH PROJECT TRAFFIC VOLUMES

WEEKDAY AM PEAK HOUR

RANCHO LOS AMIGOS SOUTH CAMPUS

LINSCOTT, LAW & GREENSPAN, engineers

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PROJECT SITE

XX STUDY INTERSECTION

N

NOT TO SCALE

FIGURE 9-6

FUTURE CUMULATIVE WITH PROJECT TRAFFIC VOLUMES

WEEKDAY PM PEAK HOUR

RANCHO LOS AMIGOS SOUTH CAMPUS

LINSCOTT, LAW & GREENSPAN, engineers

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10.0 CITY OF SOUTH GATE TRAFFIC ANALYSIS

The traffic impact analysis prepared for the 16 study intersections located within the City of South Gate using the ICU methodology for signalized intersections and HCM methodology for unsignalized intersections, and application of the City of South Gate significant traffic impact criteria is summarized in ***Table 10–1***. The ICU and HCM data worksheets for the 16 analyzed intersections are contained in *Appendix C* and *F*, respectively.

10.1 Existing Conditions

10.1.1 *Existing Conditions*

As indicated in column [1] of *Table 10–1*, 13 of the 16 study intersections located in the City of South Gate are presently operating at LOS D or better during the weekday AM and PM peak hours under existing conditions. The following three intersections, one signalized and two unsignalized, are currently operating at LOS E or worse during the peak hour shown below under existing conditions:

- Int. No. 3: Wright Road / Imperial Highway — AM Peak Hour: *v/c* = 1.048, LOS F; PM Peak Hour: *v/c* = 0.904, LOS E
- Int. No. 7: Garfield Avenue / Monroe Avenue — AM Peak Hour: *v/c* = 0.443; Delay = 44.6 seconds, LOS E
- Int. No. 15: Industrial Avenue / Gardendale Street — AM Peak Hour: *v/c* = 0.684; Delay = 37.4 seconds, LOS E

The existing traffic volumes at the study intersections during the weekday AM and PM peak hours are displayed in *Figures 5–1* and *5–2*, respectively.

10.1.2 *Existing With Project Conditions*

As shown in column [2] of *Table 10–1,* application of the City's threshold criteria to the "Existing With Project" scenario indicates that the proposed project is not expected to create significant impacts at 11 of the 16 study intersections located in the City of South Gate. As indicated in *Table 10–1*, a significant transportation impact is expected at the following five intersections, one signalized and four unsignalized, during the peak hours shown below under existing with project conditions:

- Int. No. 3: Wright Road / Imperial Highway — AM Peak Hour *v/c* increases 0.043
- Int. No. 7: Garfield Avenue / Monroe Avenue — AM Peak Hour *v/c* increases 0.046; PM Peak Hour *v/c* increased 0.039
- Int. No. 15: Industrial Avenue / Gardendale Street — AM Peak Hour *v/c* increases 0.025

Table 10-1
SUMMARY OF VOLUME TO CAPACITY RATIOS
AND LEVELS OF SERVICE
AM AND PM PEAK HOURS
CITY OF SOUTH GATE INTERSECTIONS

13-Apr-20

			[1]		[2]				[3]		[4]				[5]			
NO.	INTERSECTION	PEAK HOUR	YEAR 2017 EXISTING DELAY OR V/C	LOS	YEAR 2017 EXISTING W/ PROJECT DELAY OR V/C	LOS	CHANGE IN DELAY OR V/C [(2)-(1)]	SIGNIF. IMPACT [a]	YEAR 2021 FUTURE PRE-PROJECT DELAY OR V/C	LOS	YEAR 2021 FUTURE W/ PROJECT DELAY OR V/C	LOS	CHANGE IN DELAY OR V/C [(4)-(3)]	SIGNIF. IMPACT [a]	YEAR 2021 W/ PROJECT MITIGATION V/C	LOS	CHANGE V/C [(5)-(3)]	MITI-GATED
2	Wright Road /	AM	0.682	B	0.696	B	0.014	NO	0.701	C	0.715	C	0.014	NO	0.715	C	0.014	N/A
	I-710 SB Off-Ramp - Abbott Road	PM	0.694	B	0.697	B	0.003	NO	0.718	C	0.721	C	0.003	NO	0.721	C	0.003	N/A
3	Wright Road /	AM	1.048	F	1.091	F	0.043	YES	1.075	F	1.117	F	0.042	YES	1.004	F	-0.071	YES
	Imperial Highway	PM	0.904	E	0.912	E	0.008	NO	0.936	E	0.943	E	0.007	NO	0.921	E	-0.015	N/A
4	Ruchti Road-Garfield Place /	AM	0.796	C	0.855	D	0.059	NO	0.814	D	0.873	D	0.059	NO	0.873	D	0.059	N/A
	Imperial Highway	PM	0.732	C	0.762	C	0.030	NO	0.761	C	0.791	C	0.030	NO	0.791	C	0.030	N/A
5	Garfield Avenue /	AM	0.899	D	0.911	E	0.012	NO	0.926	E	0.931	E	0.005	NO	0.931	E	0.005	N/A
	Imperial Highway	PM	0.766	C	0.797	C	0.031	NO	0.783	C	0.814	D	0.031	NO	0.814	D	0.031	N/A
6	Garfield Avenue /	AM	0.673	B	0.750	C	0.077	NO	0.684	B	0.762	C	0.078	NO	0.762	C	0.078	N/A
	Gardendale Street	PM	0.568	A	0.648	B	0.080	NO	0.592	A	0.672	B	0.080	NO	0.672	B	0.080	N/A
7	Garfield Avenue /	AM	44.6	E	>50.0	F	----	----	46.9	E	> 50.0	F	----	----	> 50.0	F	----	----
	Monroe Avenue [b]	PM	32.6	D	42.1	E	----	----	34.8	E	45.5	E	----	----	45.5	E	----	----
		AM	0.443	----	0.489	----	0.046	YES	0.445	----	0.492	----	0.047	YES	0.492	----	0.047	NO
		PM	0.395	----	0.434	----	0.039	YES	0.398	----	0.437	----	0.039	YES	0.437	----	0.039	NO

Table 10-1 (Continued)
SUMMARY OF VOLUME TO CAPACITY RATIOS
AND LEVELS OF SERVICE
AM AND PM PEAK HOURS
CITY OF SOUTH GATE INTERSECTIONS

			[1]		[2]				[3]		[4]				[5]			
NO.	INTERSECTION	PEAK HOUR	YEAR 2017 EXISTING DELAY OR V/C	LOS	YEAR 2017 EXISTING W/ PROJECT DELAY OR V/C	LOS	CHANGE IN DELAY OR V/C [(2)-(1)]	SIGNIF. IMPACT [a]	YEAR 2021 FUTURE PRE-PROJECT DELAY OR V/C	LOS	YEAR 2021 FUTURE W/ PROJECT DELAY OR V/C	LOS	CHANGE IN DELAY OR V/C [(4)-(3)]	SIGNIF. IMPACT [a]	YEAR 2021 W/ PROJECT MITIGATION V/C	LOS	CHANGE V/C [(5)-(3)]	MITI-GATED
8	Gardendale Street / Monroe Avenue [b]	AM	14.2	B	18.3	C	----	----	14.7	B	19.1	C	----	----	19.1	C	----	----
		PM	13.0	B	13.6	B	----	----	13.5	B	14.1	B	----	----	14.1	B	----	----
		AM	0.717	----	0.741	----	0.024	NO	0.743	----	0.767	----	0.024	NO	0.767	----	0.024	N/A
		PM	0.502	----	0.531	----	0.029	NO	0.525	----	0.553	----	0.028	NO	0.553	----	0.028	N/A
9	Garfield Avenue / Main Street	AM	0.656	B	0.709	C	0.053	NO	0.667	B	0.720	C	0.053	NO	0.720	C	0.053	N/A
		PM	0.512	A	0.529	A	0.017	NO	0.530	A	0.548	A	0.018	NO	0.548	A	0.018	N/A
12	Old River School Road / Imperial Highway	AM	0.883	D	0.891	D	0.008	NO	0.906	E	0.914	E	0.008	NO	0.914	E	0.008	N/A
		PM	0.789	C	0.835	D	0.046	NO	0.798	C	0.844	D	0.046	NO	0.844	D	0.046	N/A
15	Industrial Avenue / Gardendale Street [b]	AM	37.4	E	> 50.0	F	----	----	42.3	E	> 50.0	F	----	----	> 50.0	F	----	----
		PM	20.4	C	26.3	D	----	----	22.1	C	28.9	D	----	----	28.9	D	----	----
		AM	0.684	----	0.709	----	0.025	YES	0.709	----	0.734	----	0.025	YES	0.734	----	0.025	NO
		PM	0.526	----	0.555	----	0.029	NO	0.550	----	0.579	----	0.029	NO	0.579	----	0.029	N/A
16	Erickson Avenue / Gardendale Street [b]	AM	30.9	D	> 50.0	F	----	----	33.5	C	> 50.0	F	----	----	----	----	----	----
		PM	20.2	C	> 50.0	F	----	----	17.4	C	> 50.0	F	----	----	----	----	----	----
		AM	0.663	----	0.833	----	0.170	YES	0.687	----	0.858	----	0.171	YES	0.858	D	0.171	YES
		PM	0.474	----	0.608	----	0.134	YES	0.494	----	0.627	----	0.133	YES	0.627	B	0.133	YES

Table 10-1 (Continued)
SUMMARY OF VOLUME TO CAPACITY RATIOS
AND LEVELS OF SERVICE
AM AND PM PEAK HOURS
CITY OF SOUTH GATE INTERSECTIONS

			[1]		[2]				[3]		[4]				[5]			
NO.	INTERSECTION	PEAK HOUR	YEAR 2017 EXISTING DELAY OR V/C	LOS	YEAR 2017 EXISTING W/ PROJECT DELAY OR V/C	LOS	CHANGE IN DELAY OR V/C [(2)-(1)]	SIGNIF. IMPACT [a]	YEAR 2021 FUTURE PRE-PROJECT DELAY OR V/C	LOS	YEAR 2021 FUTURE W/ PROJECT DELAY OR V/C	LOS	CHANGE IN DELAY OR V/C [(4)-(3)]	SIGNIF. IMPACT [a]	YEAR 2021 W/ PROJECT MITIGATION V/C	LOS	CHANGE V/C [(5)-(3)]	MITI-GATED
17	Arizona Avenue / Gardendale Street [b]	AM	24.2	C	44.2	E	----	----	26.7	D	> 50.0	F	----	----	> 50.0	F	----	----
		PM	13.9	B	18.2	C	----	----	14.5	B	19.1	C	----	----	19.1	C	----	----
		AM	0.679	----	0.845	----	0.166	YES	0.704	----	0.870	----	0.166	YES	0.870	----	0.166	NO
		PM	0.509	----	0.643	----	0.134	NO	0.530	----	0.664	----	0.134	NO	0.664	----	0.134	N/A
18	Industrial Avenue-Arizona Avenue / Main Street [b]	AM	12.0	B	12.4	B	----	----	12.2	B	12.7	B	----	----	12.7	B	----	----
		PM	10.8	B	11.0	B	----	----	11.0	B	11.1	A	----	----	11.1	A	----	----
		AM	0.298	----	0.311	----	0.013	NO	0.306	----	0.319	----	0.013	NO	0.319	----	0.013	N/A
		PM	0.254	----	0.266	----	0.012	NO	0.261	----	0.272	----	0.011	NO	0.272	----	0.011	N/A
20	Paramount Boulevard / Gardendale Street	AM	0.733	C	0.854	D	0.121	NO	0.758	C	0.877	D	0.119	NO	0.877	D	0.119	N/A
		PM	0.736	C	0.800	C	0.064	NO	0.739	C	0.803	D	0.064	NO	0.803	D	0.064	N/A
21	Paramount Boulevard / N. Somerset Ranch Road	AM	0.810	D	0.810	D	0.000	NO	0.839	D	0.839	D	0.000	NO	0.839	D	0.000	N/A
		PM	0.654	B	0.657	B	0.003	NO	0.678	B	0.681	B	0.003	NO	0.681	B	0.003	N/A
22 ~~23~~	Paramount Boulevard / S. Somerset Ranch Road	AM	0.689	B	0.707	C	0.018	NO	0.707	C	0.725	C	0.018	NO	0.725	C	0.018	N/A
		PM	0.691	B	0.717	C	0.026	NO	0.708	C	0.734	C	0.026	NO	0.734	C	0.026	N/A

[a] According to the City of South Gate, a transportation impact is considered significant if the final volume-to-capacity ratio (v/c) equals or exceeds the thresholds shown below:

Level of Service	Final V/C	Project-Related Increase in V/C
E,F	> 0.900	equal to or greater than 0.02

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

- Int. No. 16: Erickson Avenue / Gardendale Street — AM Peak Hour *v/c* increases 0.170; PM Peak Hour *v/c* increased 0.134
- Int. No. 17: Arizona Avenue / Gardendale Street — AM Peak Hour *v/c* increases 0.166

Incremental, but not significant, impacts are noted at the other 11 study intersections due to the project. The existing with project traffic volumes at the study intersections during the weekday AM and PM peak hours are illustrated in *Figures 9–1* and *9–2*, respectively.

10.2 Future Cumulative Conditions

10.2.1 *Future Cumulative Without Project Conditions*

The future cumulative without project conditions were forecast based on the addition of the traffic generated by ambient annual growth rates and the completion and occupancy of the other related projects. The *v/c* ratios and delay value at the study intersections are incrementally increased with the addition of traffic generated by cumulative growth and the other related projects (including the project) listed in *Table 6–1*. As indicated in *Table 10–1*, incremental changes in *v/c* ratios are noted at the all of the study intersections due to the cumulative developments in the project vicinity.

As presented in column [3] of *Table 10–1*, 11 of the 16 study intersections are expected to operate at LOS D or better during the weekday AM and PM peak hours with the addition of growth in ambient traffic and related project traffic under the future cumulative without project conditions. The following five intersections, three signalized and two unsignalized, are expected to operate at LOS E or worse during the peak hour shown below under future cumulative without project conditions:

- Int. No. 3: Wright Road / Imperial Highway — AM Peak Hour: *v/c* = 1.075, LOS F; PM Peak Hour: *v/c* = 0.936, LOS E
- Int. No. 5: Garfield Avenue / Imperial Highway — AM Peak Hour: *v/c* = 0.926, LOS E
- Int. No. 7: Garfield Avenue / Monroe Avenue — AM Peak Hour: *v/c* = 0.445; Delay = 46.9 seconds, LOS E; PM Peak Hour: *v/c* = 0.398; Delay = 34.8 seconds, LOS E
- Int. No. 12: Old River School Road / Imperial Highway — AM Peak Hour: *v/c* = 0.906, LOS E
- Int. No. 15: Industrial Avenue / Gardendale Street — AM Peak Hour: *v/c* = 0.709; Delay = 42.3 seconds, LOS E

The future cumulative without project traffic volumes at the study intersections during the AM and PM peak hours are illustrated in *Figures 9–3* and *9–4*, respectively.

10.2.2 *Future Cumulative With Project Conditions*

The future cumulative with project conditions were forecast based on the addition of traffic generated by the project plus ambient annual growth rates, plus completion and occupancy of other related projects. As shown in column [4] of *Table 10–1,* application of the City's threshold criteria to the "Future With Project" scenario as compared to the "Future Without Project" scenario indicates that the proposed project is not expected to create a significant impact at 11 of the 16 study intersections located in the City of South Gate. As indicated in *Table 10–1*, a significant transportation impact is expected at the following five intersections, one signalized and four unsignalized, during the peak hours shown below under future cumulative with project conditions:

- Int. No. 3: Wright Road / Imperial Highway — AM Peak Hour *v/c* increases 0.042
- Int. No. 7: Garfield Avenue / Monroe Avenue — AM Peak Hour *v/c* increases 0.047; PM Peak Hour *v/c* increased 0.039
- Int. No. 15: Industrial Avenue / Gardendale Street — AM Peak Hour *v/c* increases 0.025
- Int. No. 16: Erickson Avenue / Gardendale Street — AM Peak Hour *v/c* increases 0.171; PM Peak Hour *v/c* increased 0.133
- Int. No. 17: Arizona Avenue / Gardendale Street — AM Peak Hour *v/c* increases 0.166

Incremental, but not significant, impacts are noted at the other 11 study intersections due to the project. 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 illustrated in *Figures 9–5* and *9–6*, respectively.

11.0 CITY OF PARAMOUNT TRAFFIC ANALYSIS

The traffic impact analysis prepared for the four study intersections located within the City of Paramount using the ICU methodology and application of the City of Paramount significant traffic impact criteria is summarized in ***Table 11–1***. The ICU data worksheets for the four analyzed intersections are contained in *Appendix D*.

11.1 Existing Conditions

As indicated in column [1] of *Table 11–1*, the four study intersections (all signalized) located in the City of Paramount are presently operating at LOS D or better during the weekday AM and PM peak hours under existing conditions. The existing traffic volumes at the study intersections during the weekday AM and PM peak hours are displayed in *Figures 5–1* and *5–2*, respectively.

11.2 Existing With Project Conditions

As shown in column [2] of *Table 11–1,* application of the City's threshold criteria to the "Existing With Project" scenario indicates that the proposed project is not expected to create significant impacts at three of the four study intersections located in the City of Paramount. As indicated in *Table 11–1*, a significant transportation impact is expected at the following intersections during the peak hours shown below under existing with project conditions:

- Int. No. 20: Paramount Boulevard / Gardendale Street — AM Peak Hour *v/c* increases 0.121; PM Peak Hour *v/c* increased 0.064

Incremental, but not significant, impacts are noted at the other three study intersections due to the project. The existing with project traffic volumes at the study intersections during the weekday AM and PM peak hours are illustrated in *Figures 9–1* and *9–2*, respectively**.**

11.3 Future Cumulative With Project Conditions

The *v/c* ratios at all the City of Paramount study intersections are incrementally increased with the addition of traffic generated cumulative growth rates and the completion and operation of other related projects (including the project) listed in *Table 6–1*. As indicated in column [3] of *Table 11–1*, the proposed project contributes to a significant traffic impact at the following intersection during the peak hours shown below under future cumulative with project conditions:

- Int. No. 20: Paramount Boulevard / Gardendale Street — AM Peak Hour v/c increases 0.144; PM Peak Hour v/c increases 0.067

Incremental, but not significant changes in v/c ratios are noted at the remaining study intersection due to the cumulative developments in the project vicinity. The future cumulative with project (existing, proposed project, and related projects) traffic volumes at the study intersections during the AM and PM peak hours are illustrated in *Figures 9–5* and *9–6,* respectively.

Table 11-1
SUMMARY OF VOLUME TO CAPACITY RATIOS
AND LEVELS OF SERVICE
CITY OF PARAMOUNT INTERSECTIONS

04-Oct-18

NO.	INTERSECTION	PEAK HOUR	[1] YEAR 2017 EXISTING V/C	[1] LOS	[2] YEAR 2017 W/ PROPOSED PROJECT V/C	[2] LOS	[2] CHANGE V/C [(2)-(1)]	[2] SIGNIF. IMPACT [a]	[3] YEAR 2021 W/ RELATED PROJECTS V/C	[3] LOS	[3] CHANGE V/C [(3)-(1)]	[3] SIGNIF. IMPACT [a]
10	Garfield Avenue /	AM	0.688	B	0.740	C	0.052	NO	0.748	C	0.060	NO
	N. Somerset Ranch Road	PM	0.609	B	0.640	B	0.031	NO	0.637	B	0.028	NO
11	Garfield Avenue /	AM	0.773	C	0.800	C	0.027	NO	0.811	D	0.038	NO
	S. Somerset Ranch Road	PM	0.754	C	0.757	C	0.003	NO	0.786	C	0.032	NO
20	Paramount Boulevard /	AM	0.733	C	0.854	D	0.121	YES	0.877	D	0.144	YES
	Gardendale Street	PM	0.736	C	0.800	C	0.064	YES	0.803	D	0.067	YES
23	Downey Avenue /	AM	0.591	A	0.637	B	0.046	NO	0.642	B	0.051	NO
	Gardendale Street	PM	0.565	A	0.591	A	0.026	NO	0.600	A	0.035	NO

[a] According to the City of Paramount, a transportation impact on an intersection shall be deemed significant in accordance with the following table:

Pre-Project V/C	LOS	Project Related Increase in V/C
0.701 - 0.800	C	equal to or greater than 0.040
0.801 - 0.900	D	equal to or greater than 0.020
> 0.901	E,F	equal to or greater than 0.010

12.0 COUNTY OF LOS ANGELES TRAFFIC ANALYSIS

The traffic impact analysis prepared for the four study intersections located within the City of Paramount using ICU and HCM methodologies and application of the County of Los Angeles significant traffic impact criteria is summarized in ***Table 12–1***. The ICU and HCM data worksheets for the four analyzed intersections are contained in *Appendix E* and *F*, respectively.

12.1 Existing Conditions

As indicated in column [1] of *Table 12–1*, the four study intersections (all unsignalized) located in the County of Los Angeles are presently operating at LOS D or better during the weekday AM and PM peak hours under existing conditions. The existing traffic volumes at the study intersections during the weekday AM and PM peak hours are displayed in *Figures 5–1* and *5–2*, respectively.

12.2 Existing With Project Conditions

As shown in column [2] of *Table 12–1,* application of the County's threshold criteria to the "Existing With Project" scenario indicates that the proposed project is not expected to create significant impacts at three of the four study intersections located in the County of Los Angeles. As indicated in *Table 12–1*, a significant transportation impact is expected at the following intersections during the peak hours shown below under existing with project conditions:

- Int. No. 16: Erickson Avenue / Gardendale Street — AM Peak Hour *v/c* increases 0.170; PM Peak Hour *v/c* increased 0.134

Incremental, but not significant, impacts are noted at the other three study intersections due to the project. The existing with project traffic volumes at the study intersections during the weekday AM and PM peak hours are illustrated in *Figures 9–1* and *9–2*, respectively**.**

12.3 Future Cumulative With Project Conditions

The *v/c* ratios and delay values at all the County of Los Angeles study intersections are incrementally increased with the addition of traffic generated cumulative growth rates and the completion and operation of other related projects (including the project) listed in *Table 6–1*. As indicated in column [3] of *Table 12–1*, the proposed project contributes to a significant traffic impact at the following intersection during the peak hours shown below under future cumulative with project conditions:

- Int. No. 16: Erickson Avenue / Gardendale Street — AM Peak Hour v/c increases 0.195; PM Peak Hour v/c increases 0.153

Incremental, but not significant changes in v/c ratios are noted at the remaining study intersection due to the cumulative developments in the project vicinity. The future cumulative with project (existing, proposed project, and related projects) traffic volumes at the study intersections during the AM and PM peak hours are illustrated in *Figures 9–5* and *9–6,* respectively.

Table 12-1
SUMMARY OF VOLUME TO CAPACITY RATIOS
AND LEVELS OF SERVICE
COUNTY OF LOS ANGELES INTERSECTIONS

17-Jun-19

NO.	INTERSECTION	PEAK HOUR	[1] YEAR 2017 EXISTING V/C	LOS	[2] YEAR 2017 W/ PROPOSED PROJECT V/C	LOS	CHANGE V/C [(2)-(1)]	SIGNIF. IMPACT [a]	[3] YEAR 2021 W/ RELATED PROJECTS V/C	LOS	CHANGE V/C [(3)-(1)]	SIGNIF. IMPACT [a]	[4] YEAR 2021 W/ PROJECT MITIGATION V/C	LOS	CHANGE V/C [(4)-(1)]	MITI-GATED
13	Erickson Avenue /	AM	9.6	A	14.0	B	----	----	14.4	B	----	----	14.4	B	----	----
	W. Imperial Highway [b]	PM	8.3	A	9.5	A	----	----	9.6	B	----	----	9.6	B	----	----
		AM	0.269	----	0.389	----	0.120	NO	0.396	----	0.127	NO	0.396	----	0.127	N/A
		PM	0.193	----	0.246	----	0.053	NO	0.254	----	0.061	NO	0.254	----	0.061	N/A
14	Erickson Avenue /	AM	8.6	A	10.9	B	----	----	11.1	B	----	----	11.1	B	----	----
	E. Imperial Highway [b]	PM	8.2	A	10.1	B	----	----	10.4	B	----	----	10.4	B	----	----
		AM	0.238	----	0.380	----	0.142	NO	0.386	----	0.148	NO	0.386	----	0.148	N/A
		PM	0.231	----	0.326	----	0.095	NO	0.336	----	0.105	NO	0.336	----	0.105	N/A
16	Erickson Avenue /	AM	30.9	D	> 50.0	F	----	----	> 50.0	F	----	----	----	----	----	----
	Gardendale Street [c]	PM	20.2	C	> 50.0	F	----	----	> 50.0	F	----	----	----	----	----	----
		AM	0.663	----	0.833	----	0.170	YES	0.858	----	0.195	YES	0.858	D	0.195	YES
		PM	0.474	----	0.608	----	0.134	YES	0.627	----	0.153	YES	0.627	B	0.153	YES
27	Erickson Avenue /	AM	8.0	A	9.9	A	----	----	10.1	B	----	----	10.1	B	----	----
	Amigos Avenue [b]	PM	7.8	A	9.2	A	----	----	9.3	B	----	----	9.3	B	----	----
		AM	0.177	----	0.313	----	0.136	NO	0.316	----	0.139	NO	0.316	----	0.139	N/A
		PM	0.153	----	0.238	----	0.085	NO	0.243	----	0.090	NO	0.243	----	0.090	N/A

[a] According to Los Angeles County Department of Public Works "Traffic Impact Analysis Report Guidelines, " January 1997, a transportation impact on an intersection shall be deemed significant in accordance with the following table:

Pre-Project V/C	LOS	Project Related Increase in V/C
0.701 - 0.800	C	equal to or greater than 0.040
0.801 - 0.900	D	equal to or greater than 0.020
> 0.901	E,F	equal to or greater than 0.010

[b] All-Way Stop-Controlled Intersection.

[c] Two-Way Stop-Controlled Intersection. Reported values represent the delays associated with the most constrained approach of the intersection.

13.0 CITY OF LYNWOOD TRAFFIC ANALYSIS

The traffic impact analysis prepared for the two study intersections located within the City of Lynwood using the CMA methodology and application of the City of Lynwood significant traffic impact criteria is summarized in ***Table 13–1***. The CMA data worksheets for the seven analyzed intersections are contained in *Appendix G.*

13.1 Existing Conditions

13.1.1 *Existing Conditions*

As indicated in column [1] of *Table 13–1*, one of the two study intersections (both signalized) located in the City of Lynwood are presently operating at LOS D or better during the weekday AM and PM peak hours under existing conditions. The following intersection is currently operating at LOS E or worse during the peak hour shown below under existing conditions:

- Int. No. 3: Wright Road / Imperial Highway — AM Peak Hour: *v/c* = 0.972, LOS E

The existing traffic volumes at the study intersections during the weekday AM and PM peak hours are displayed in *Figures 5–1* and *5–2*, respectively.

13.1.2 *Existing With Project Conditions*

As shown in column [2] of *Table 13–1,* application of the City's threshold criteria to the "Existing With Project" scenario indicates that the proposed project is expected to create significant impacts at one of the two study intersections located in the City of Lynwood. As indicated in *Table 13–1*, a significant transportation impact is expected at the following intersection during the peak hours shown below under existing with project conditions:

- Int. No. 3: Wright Road / Imperial Highway — AM Peak Hour *v/c* increases 0.047

The existing with project traffic volumes at the study intersections during the weekday AM and PM peak hours are illustrated in *Figures 9–1* and *9–2*, respectively.

13.2 Future Cumulative Conditions

13.2.1 *Future Cumulative Without Project Conditions*

The future cumulative without project conditions were forecast based on the addition of the traffic generated by ambient annual growth rates and the completion and occupancy of the other related projects. The *v/c* ratios and delay value at the study intersections are incrementally increased with the addition of traffic generated by the other related projects (including the project) listed in *Table 6–1*. As indicated in *Table 13–1*, incremental changes in *v/c* ratios are noted at both study intersections due to the cumulative developments in the project vicinity.

Table 13-1
SUMMARY OF VOLUME TO CAPACITY RATIOS
AND LEVELS OF SERVICE
CITY OF LYNWOOD INTERSECTIONS

03-Oct-18

NO.	INTERSECTION	PEAK HOUR	[1] YEAR 2017 EXISTING V/C	LOS	[2] YEAR 2017 EXISTING W/ PROJECT V/C	LOS	CHANGE V/C [(2)-(1)]	SIGNIF. IMPACT [a]	[3] YEAR 2021 FUTURE PRE-PROJECT V/C	LOS	[4] YEAR 2021 FUTURE W/ PROJECT V/C	LOS	CHANGE V/C [(4)-(3)]	SIGNIF. IMPACT [a]	[5] YEAR 2021 W/ PROJECT MITIGATION V/C	LOS	CHANGE V/C [(5)-(3)]	MITI-GATED
1	Atlantic Avenue /	AM	0.740	C	0.778	C	0.038	NO	0.761	C	0.799	C	0.038	NO	0.799	C	0.038	N/A
	Imperial Highway	PM	0.674	B	0.693	B	0.019	NO	0.702	C	0.711	C	0.009	NO	0.711	C	0.009	N/A
3	Wright Road /	AM	0.972	E	1.019	F	0.047	YES	1.001	F	1.049	F	0.048	YES	0.922	E	-0.079	YES
	Imperial Highway	PM	0.817	D	0.826	D	0.009	NO	0.853	D	0.861	D	0.008	NO	0.802	D	-0.051	N/A

[a] According to the City of Lynwood, a transportation impact on an intersection shall be deemed significant in accordance with the following table:

Final v/c	LOS	Project Related Increase in v/c
0.701 - 0.800	C	equal to or greater than 0.040
0.801 - 0.900	D	equal to or greater than 0.020
> 0.901	E, F	equal to or greater than 0.010

As presented in column [3] of *Table 13–1*, one of the two study intersections is expected to operate at LOS D or better during the weekday AM and PM peak hours with the addition of growth in ambient traffic and related project traffic under the future cumulative without project conditions. The following intersection is expected to operate at LOS E or worse during the peak hour shown below under future cumulative without project conditions:

- Int. No. 3: Wright Road / Imperial Highway — AM Peak Hour: *v/c* = 1.001, LOS F

The future cumulative without project traffic volumes at the study intersections during the AM and PM peak hours are illustrated in *Figures 9–3* and *9–4*, respectively.

13.2.2 *Future Cumulative With Project Conditions*

The future cumulative with project conditions were forecast based on the addition of traffic generated by the project plus completion and occupancy of other related projects. As shown in column [4] of *Table 12–3,* application of the City's threshold criteria to the "Future With Project" scenario as compared to the "Future Without Project" scenario indicates that the proposed project is expected to create a significant impact at one of the two study intersections located in the City of Lynwood. As indicated in *Table 13–1*, a significant transportation impact is expected at the following intersection during the peak hours shown below under future cumulative with project conditions:

- Int. No. 3: Wright Road / Imperial Highway — AM Peak Hour *v/c* increases 0.048

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 illustrated in *Figures 9–5* and *9–6*, respectively.

14.0 MITIGATION MEASURES

The significant pre-mitigation transportation impacts due to the project are identified in Sections 9.0 through 13.0 above for the study intersections located in Downey, South Gate, Paramount, Los Angeles County and Lynwood. Where deemed to be potentially feasible, transportation mitigation measures have been proposed to mitigate the impacts at the affected intersections.

14.1 City of Downey

As shown in *Table 9–1*, the project is forecast to cause significant traffic impacts at the following study intersections located in the City of Downey in the Existing with Project and Future with Project scenarios (except where noted):

- Int. No. 15: Industrial Avenue / Gardendale Street
- Int. No. 16: Erickson Avenue / Gardendale Street
- Int. No. 17: Arizona Avenue / Gardendale Street (Future with Project only)

As previously noted, all three intersections are stop-sign controlled, with stop signs controlling traffic from the minor side streets. Installation traffic signals may improve the Levels of Service at these stop-sign controlled intersections, thereby mitigating the potential traffic impacts associated with the project. However, there is insufficient side street volume to warrant the installation of traffic signals at the Industrial Avenue / Gardendale Street (Intersection No. 15) and Arizona Avenue / Gardendale Street (Intersection No. 17) intersections (i.e. the intersection does not meet signal warrants). The analysis of traffic signal warrants is discussed further in Section 15.0.

As shown in Column [5] of *Table 9–1* (City of Downey study intersections), the recommended mitigation measure for Intersection No. 16 would be installation of a traffic signal that would mitigate the effects of project traffic to a less-than-significant level at the Erickson Avenue / Gardendale Street intersection.

> **MM-1** Los Angeles County shall provide a fair share contribution towards the signalization of Intersection No. 16 (Erickson Avenue / Gardendale Street). Such payment shall be paid after approval of such signalization by the City of Downey and the City of South Gate.

It is noted, however, that the intersection is under the jurisdiction of the City of Downey (and City of South Gate and County of Los Angeles). As the County of Los Angeles does not have direct control over the operation of the intersection, it cannot guarantee that the City of Downey (and City of South Gate) will agree with implementation of the recommended mitigation measure. Therefore, if the City of Downey (and City of South Gate) does not permit construction of the improvements, the impact of the project would remain significant and unavoidable.

14.2 City of South Gate

As shown in *Table 10–1*, the project is forecast to cause significant traffic impacts at the following study intersections located in the City of South Gate in the Existing with Project and Future with Project scenarios:

- Int. No. 3: Wright Road / Imperial Highway
- Int. No. 7: Garfield Avenue / Monroe Avenue
- Int. No. 15: Industrial Avenue / Gardendale Street
- Int. No. 16: Erickson Avenue / Gardendale Street
- Int. No. 17: Arizona Avenue / Gardendale Street

As previously noted in Section 14.1 above, Intersection Nos. 15, and 16 are stop-sign controlled, with stop signs controlling traffic from the minor side streets. Similarly, Intersection No. 7 (Garfield Avenue / Monroe Avenue) is also stop-sign controlled, with stop signs controlling traffic from the minor side street. Installation traffic signals may improve the Levels of Service at these stop-sign controlled intersections, thereby mitigating the potential traffic impacts associated with the project. However, there is insufficient side street volume to warrant the installation of traffic signals at the Garfield Avenue / Monroe Avenue (Intersection No. 7), Industrial Avenue / Gardendale Street (Intersection No. 15), and Arizona Avenue / Gardendale Street (Intersection No. 17) intersections (i.e. the intersection does not meet signal warrants). Therefore, the traffic impacts due to the project are significant and unavoidable at Intersection Nos. 7, 15, and 17. The analysis of traffic signal warrants is discussed further in Section 15.0.

For Intersection No. 3 (Wright Road / Imperial Highway), the following mitigation measure is recommended:

> **MM-2** Los Angeles County shall provide a fair share contribution towards restriping the eastbound Imperial Highway approach to the Wright Road intersection to provide one left-turn lane, two through lanes, and one optional through/right-turn lane. The revised lane configurations can be implemented without modifying the existing curb-to-curb roadway width on Imperial Highway. Such payment shall be paid after approval of this improvement by the City of South Gate and the City of Lynwood.

As shown in Column [5] of *Table 10–1* (City of South Gate study intersections), the recommended mitigation measure would mitigate the effects of project traffic to a less-than-significant level at the Wright Road / Imperial Highway intersection (Intersection No. 3). It is noted, however, that the intersection is under the jurisdiction of the City of South Gate (and City of Lynwood). As the County of Los Angeles does not have direct control over the operation of the intersection, it cannot guarantee that the City of South Gate (and City of Lynwood) will agree with implementation of the recommended mitigation measure. Therefore, if the City of South

Gate (and City of Lynwood) does not permit construction of the improvements, the impact of the project at Intersection No. 3 would remain significant and unavoidable.

As shown in Column [5] of *Table 10–1* (City of South Gate study intersections), the recommended mitigation measure for Intersection No. 16 that would mitigate the effects of project traffic to a less-than-significant level at the Erickson Avenue / Gardendale Street intersection.

> **MM-1** Los Angeles County shall provide a fair share contribution towards the signalization of Intersection No. 16 (Erickson Avenue / Gardendale Street). Such payment shall be paid after approval of such signalization by the City of Downey and the City of South Gate.

It is noted, however, that the intersection is under the jurisdiction of the City of South Gate (and City of Downey and County of Los Angeles). As the County of Los Angeles does not have direct control over the operation of the intersection, it cannot guarantee that the City of South Gate (and City of Downey) will agree with implementation of the recommended mitigation measure. Therefore, if the City of South Gate (and City of Downey) does not permit construction of the improvements, the impact of the project would remain significant and unavoidable.

14.3 City of Paramount

As shown in *Table 11–1*, the project is forecast to cause significant traffic impacts at the following study intersections located in the City of Paramount:

- Int. No. 20: Paramount Boulevard / Gardendale Street (direct project and cumulative)

For Intersection No. 20 (Paramount Boulevard / Gardendale Street), the intersection is completely built-out. No street improvements would be possible without modifying the existing curb-to-curb street widths, which would likely require the acquisition of private property and removal of a business located adjacent to the intersection, which is considered infeasible. Therefore, as there are no reasonable or feasible mitigation measures available at this intersection, the impact of the project would remain significant and unavoidable.

14.4 County of Los Angeles

As shown in *Table 12–1*, the project is forecast to cause significant traffic impacts at the following study intersections located in the County of Los Angeles:

- Int. No. 16: Erickson Avenue / Gardendale Street (direct project and cumulative)

As previously noted in Section 14.1 above, Intersection No. 16 is stop-sign controlled, with stop signs controlling traffic from the minor side streets. As shown in Column [4] of *Table 10–1* (County of Los Angeles study intersections), the recommended mitigation measure for

Intersection 16 that would mitigate the effects of project traffic to a less-than-significant level at the Erickson Avenue / Gardendale Street intersection.

> **MM-1** Los Angeles County shall provide a fair share contribution towards the signalization of Intersection No. 16 (Erickson Avenue / Gardendale Street). Such payment shall be paid after approval of such signalization by the City of Downey and the City of South Gate.

It is noted, however, that the intersection is under the jurisdiction of the Cities of Downey and South Gate (and County of Los Angeles). As the County of Los Angeles does not have direct control over the operation of the intersection, it cannot guarantee that the Cities of Downey and South Gate will agree with implementation of the recommended mitigation measure. Therefore, if the Cities of Downey South Gate do not permit construction of the improvements, the impact of the project would remain significant and unavoidable.

14.5 City of Lynwood

As shown in *Table 13–1*, the project is forecast to cause significant traffic impacts at the following study intersection located in the City of Lynwood in the Existing with Project and Future with Project scenarios:

- Int. No. 3: Wright Road / Imperial Highway

As previously noted in Section 13.2 above, for Intersection No. 3 (Wright Road / Imperial Highway), the following mitigation measure is recommended:

> **MM-2** Los Angeles County shall provide a fair share contribution towards restriping the eastbound Imperial Highway approach to the Wright Road intersection to provide one left-turn lane, two through lanes, and one optional through/right-turn lane. The revised lane configurations can be implemented without modifying the existing curb-to-curb roadway width on Imperial Highway. Such payment shall be paid after approval of this improvement by the City of South Gate and the City of Lynwood.

As shown in Column [5] of *Table 13–1* (City of Lynwood study intersections), the recommended mitigation measure would mitigate the effects of project traffic at the Wright Road / Imperial Highway intersection to a less-than significant level. It is noted, however, that the intersection is under the jurisdiction of the City of Lynwood (and City of South Gate). As the County of Los Angeles does not have direct control over the operation of the intersection, it cannot guarantee that the City of Lynwood (and City of South Gate) will agree with implementation of the recommended mitigation measure. Therefore, if the City of Lynwood (and City of South Gate) does not permit construction of the improvements, the impact of the project would remain significant and unavoidable.

14.6 Residual Impacts

The following provides a summary of the potential transportation impacts of the project at the study intersections.

Significantly Impacted Intersections with No Feasible Mitigation. The project would cause a significant transportation impacts at the following study intersections for which there are no feasible mitigation measures:

- Int. No. 7: Garfield Avenue / Monroe Avenue (City of South Gate)
- Int. No. 15: Industrial Avenue / Gardendale Street (Cities of Downey and South Gate)
- Int. No. 17: Arizona Avenue / Gardendale Street (Cities of Downey and South Gate)
- Int. No. 20: Paramount Boulevard / Gardendale Street (Cities of South Gate and Paramount)

Significantly Impacted Intersections with Feasible Mitigation But Implementation is Not Guaranteed. The project would cause a significant transportation impacts at the following study intersections for which potential mitigation measures have been proposed, but implementation is not guaranteed because the intersections are outside the jurisdiction of the County of Los Angeles (therefore impacts are considered significant and unavoidable at these intersections):

- Int. No. 3: Wright Road / Imperial Highway (Cities of South Gate and Lynwood)
- Int. No. 16: Erickson Avenue / Gardendale Street (Cities of Downey and South Gate)

15.0 TRAFFIC SIGNAL WARRANT ANALYSIS

Traffic signal warrants were prepared for Garfield Avenue / Monroe Avenue (Intersection No. 7), Industrial Avenue / Gardendale Street (Intersection No. 15), Erickson Avenue / Gardendale Street (Intersection No. 16), and Arizona Avenue / Gardendale Street (Intersection No. 17). The traffic signal warrants were prepared based on criteria set forth in Chapter 4C of the *Manual on Uniform Traffic Control Devices (MUTCD)*[11]. Warrant No. 3 (Peak Hour Volume) traffic signal warrants were prepared for the four stop-controlled intersections. The traffic signal warrant calculations were based on existing traffic volumes and future forecast plus project traffic volumes along all approaches. Copies of the traffic signal warrant data worksheets are contained in ***Appendix G***.

15.1 Warrants Input Factors and Data

The following provides a summary of the warrants input factors assumed in the review and data collected in preparing the traffic signal warrant analysis:

- The Garfield Avenue / Monroe Avenue intersection (Intersection No. 7) is currently controlled by a stop sign facing the side street (Monroe Avenue) approach.
- The Industrial Avenue / Gardendale Street, Erickson Avenue / Gardendale Street, and Arizona Avenue / Gardendale Street intersections (Intersection Nos. 15, 16, and 17, respectively) are currently controlled by a stop sign facing the side street (Industrial Avenue, Erickson Avenue, and Arizona Avenue) approaches.
- For the Garfield Avenue / Monroe Avenue intersection (Intersection No. 7), Garfield Avenue was assumed to be the major street while Monroe Avenue was assumed to be the minor street.
- For the Industrial Avenue / Gardendale Street, Erickson Avenue / Gardendale Street, and Gardendale Street / Arizona Avenue intersections (Intersection Nos. 15, 16, and 17, respectively), Gardendale Street was assumed to be the major street while Industrial Avenue, Erickson Avenue, and Arizona Avenue were assumed to be the minor streets.
- Garfield Avenue and Gardendale Street are posted for a 35 miles per hour speed limit in the project vicinity. Industrial Avenue, Erickson Avenue, and Arizona Avenue are posted for a 25 miles per hour speed limit in the project vicinity.
- Manual peak hour traffic counts were conducted at the unsignalized intersections. Copies the traffic counts for the intersection and approaches are contained in *Appendix A*.

The future cumulative with project scenario evaluated existing traffic volumes, project-related traffic volumes, traffic from other related projects, as well as ambient traffic growth.

[11] *Manual on Uniform Traffic Control Devices (MUTCD),* 2014 California Supplement, November 7, 2014. http://www.dot.ca.gov/trafficops/camutcd/camutcd2014rev4.html

15.2 Traffic Signal Warrant Analysis

15.2.1 *Garfield Avenue / Monroe Avenue (Intersection No. 7)*

The following paragraphs provide a detailed discussion of the traffic signal warrant prepared for the Garfield Avenue / Monroe Avenue intersection.

Warrant 3: Peak Hour Volume Warrant

The Peak Hour Volume Warrant is applied for land uses that attract or discharge large numbers of vehicles over a short period of time. Warrant No. 3 is satisfied when the plotted point, representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher volume minor street approach (one direction only) for one hour of an average day, falls above the curve in Figure 4C-4 for the applicable number of approach lanes. The lower threshold for a major street approach with two or more lanes is 600 vehicles per hour while the lower threshold for a minor street approach with one lane is 100 vehicles per hour.

As indicated in Figure 4C-3 provided in *Appendix H*, the plotted points for the peak hours are below the applicable curve for future with project conditions for the Garfield Avenue / Monroe Avenue intersection. Therefore, Warrant No. 3 is not satisfied for the intersection under future with project conditions.

15.2.2 *Industrial Avenue / Gardendale Street (Intersection No. 15)*

The following paragraphs provide a detailed discussion of the traffic signal warrant prepared for the Industrial Avenue / Gardendale Street intersection.

Warrant 3: Peak Hour Volume Warrant

The Peak Hour Volume Warrant is applied for land uses that attract or discharge large numbers of vehicles over a short period of time. Warrant No. 3 is satisfied when the plotted point, representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher volume minor street approach (one direction only) for one hour of an average day, falls above the curve in Figure 4C-4 for the applicable number of approach lanes. The lower threshold for a major street approach with one lane is 500 vehicles per hour while the lower threshold for a minor street approach with one lane is 100 vehicles per hour.

As indicated in Figure 4C-3 provided in *Appendix H*, the plotted points for the peak hours are below the applicable curve for future with project conditions for the Industrial Avenue / Gardendale Street intersection. Therefore, Warrant No. 3 is not satisfied for the intersection under future with project conditions.

15.2.3 *Erickson Avenue / Gardendale Street (Intersection No. 16)*

The following paragraphs provide a detailed discussion of the traffic signal warrant prepared for the Erickson Avenue / Gardendale Street intersection.

Warrant 3: Peak Hour Volume Warrant

The Peak Hour Volume Warrant is applied for land uses that attract or discharge large numbers of vehicles over a short period of time. Warrant No. 3 is satisfied when the plotted point, representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher volume minor street approach (one direction only) for one hour of an average day, falls above the curve in Figure 4C-4 for the applicable number of approach lanes. The lower threshold for a major street approach with one lane is 500 vehicles per hour while the lower threshold for a minor street approach with one lane is 200 vehicles per hour.

As indicated in Figure 4C-3 provided in *Appendix H*, the plotted point for the PM peak hour is above the applicable curve, while the plotted point for the AM peak hour falls below the applicable curve for future with project conditions for the Erickson Avenue / Gardendale Street intersection. Therefore, Warrant No. 3 is satisfied for the intersection under future with project conditions for the PM peak hour.

15.2.4 *Arizona Avenue / Gardendale Street (Intersection No. 17)*

The following paragraphs provide a detailed discussion of the traffic signal warrant prepared for the Arizona Avenue / Gardendale Street intersection.

Warrant 3: Peak Hour Volume Warrant

The Peak Hour Volume Warrant is applied for land uses that attract or discharge large numbers of vehicles over a short period of time. Warrant No. 3 is satisfied when the plotted point, representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher volume minor street approach (one direction only) for one hour of an average day, falls above the curve in Figure 4C-4 for the applicable number of approach lanes. The lower threshold for a major street approach with one lane is 500 vehicles per hour while the lower threshold for a minor street approach with one lane is 100 vehicles per hour.

As indicated in Figure 4C-3 provided in *Appendix H*, the plotted points for the peak hours are below the applicable curve for future with project conditions for the Arizona Avenue / Gardendale Street intersection. Therefore, Warrant No. 3 is not satisfied for the intersection under future with project conditions.

15.3 Traffic Signal Warrants Conclusions

Table 15–1 provides a summary of the traffic signal warrants analysis prepared for the existing stop-sign controlled intersection and the future proposed traffic signal. The findings are provided below:

Garfield Avenue / Monroe Avenue (Intersection No. 7)

- The Warrant 3 (Peak Hour) is not satisfied for future plus project conditions.

Industrial Avenue / Gardendale Street (Intersection No. 15)

- The Warrant 3 (Peak Hour) is not satisfied for future plus project conditions.

Erickson Avenue / Gardendale Street (Intersection No. 16)

- The Warrant 3 (Peak Hour) is satisfied for cumulative future plus project conditions during the PM peak hour.

Arizona Avenue / Gardendale Street (Intersection No. 17)

- The Warrant 3 (Peak Hour) is not satisfied for future plus project conditions.

As noted in the MUTCD document, the satisfaction of traffic signal warrants does not necessarily justify the installation of a traffic signal, which are dependent on several factors, including policy decisions by local jurisdictions. Delay, congestion, approach conditions, driver behavior, intersection location/vicinity, and/or other evidence of the need for right-of-way assignment beyond that which could be provided by stop-sign control may also be demonstrated.

Table 15-1
TRAFFIC SIGNAL WARRANTS SUMMARY [A]

NO.	INTERSECTION	FUTURE + PROJECT WARRANT 3 PEAK HOUR SATISFIED? [B]
1	Garfield Avenue / Monroe Avenue	NO
2	Industrial Avenue / Gardendale Street	NO
3	Erickson Avenue / Gardendale Street	YES
4	Arizona Avenue / Gardendale Street	NO

[A] Traffic signal warrant analysis based on the Manual on Uniform Traffic Control Devices (MUTCD 2014 California Supplement, November 7, 2014.

[B] Traffic signal warrant data worksheets are contained in *Appendix G*.

16.0 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.

16.1 Intersections

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

- CMP Station — Intersection

  No. 4 — Lakewood Boulevard / Rosecrans Avenue

  No. 17 — Old River School Road / Firestone Boulevard

  No. 18 — Lakewood Boulevard / Firestone Boulevard

  No. 144 — Atlantic Avenue / Firestone Boulevard

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 would not add 50 or more trips during either the AM or PM weekday peak hours (i.e., of adjacent street traffic) to CMP monitoring intersections in the project vicinity, which is stated in the CMP manual as the threshold criteria (screening criteria) for a traffic impact assessment.

Specifically, the project is forecast to add the following peak hour traffic volumes to the CMP intersection monitoring locations:

- Lakewood Boulevard / Rosecrans Avenue:
    - 31 AM peak hour trips, 27 PM peak hour trips
- Old River School Road / Firestone Boulevard
    - 39 AM peak hour trips, 34 PM peak hour trips
- Lakewood Boulevard / Firestone Boulevard
    - 31 AM peak hour trips, 27 PM peak hour trips
- Atlantic Avenue / Firestone Boulevard
    - 39 AM peak hour trips, 34 PM peak hour trips

Therefore, no further review of potential impacts to intersection monitoring locations that are part of the CMP highway system is required.

16.2 Freeways

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

CMP Station	Location
No. 1043	I-105 Freeway east of Harris Avenue
No. 1080	I-710 Freeway north of Firestone 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 periods. The proposed project would not add 150 or more trips (in either direction) during either the AM or PM weekday peak hours to CMP freeway monitoring locations which is the threshold for preparing a traffic impact assessment, as stated in the CMP manual.

Specifically, the project is forecast to add the following peak hour traffic volumes to the CMP freeway monitoring locations:

- I-105 Freeway east of Harris Avenue:
    - 89 AM EB peak hour trips, 12 AM WB peak hour trips
    - 15 PM EB peak hour trips, 72 PM WB peak hour trips
- I-710 Freeway north of Firestone Boulevard

- 15 AM NB peak hour trips, 64 AM SB peak hour trips
- 88 PM NB peak hour trips, 11 PM SB peak hour trips

Therefore, no further review of potential impacts to freeway monitoring locations that are part of the CMP highway system is required.

16.3 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[12]. As discussed in Subsection 4.4 above, existing transit service is provided in the vicinity of the proposed Rancho Los Amigos South Campus project.

The project trip generation, as shown in *Table 7–1*, 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 51 transit trip during the AM peak hour and 43 transit trip during the PM peak hour. Over a 24-hour period, the proposed project is forecast to generate demand for 365 daily transit trips. Therefore, the calculations are as follows:

- AM Peak Hour = 1,038 × 1.4 × 0.035 = 51 Transit Trips
- PM Peak Hour = 884 × 1.4 × 0.035 = 43 Transit Trips
- Daily Trips = 7,443 × 1.4 × 0.035 = 365 Transit Trips

As shown in *Table 4–1*, 11 bus and train transit lines are provided near the project site. The current service provides 103 buses and trains during the AM peak hour and 98 buses and trains during the PM peak hour. Therefore, on average the project would add less than one new transit rider per transit bus/train route during the weekday AM and PM peak hours. As shown in ***Table 16–1***, the 11 bus and train transit lines provided near the project site have an average capacity of 12,568 transit trips during the AM peak hour and 12,311 transit trips during the PM peak hour. As such, it is anticipated that the existing transit service in the project area will adequately accommodate the increase of project-generated transit trips. No project impacts on existing or future transit services in the project area are expected to occur as a result of the proposed project.

[12] OPR's December 2018 Technical Advisory on Evaluating Transportation Impacts under CEQA explains "When evaluating impacts to multimodal transportation networks, lead agencies generally should not treat the addition of new transit users as an adverse impact." (OPR Technical Advisory, p. 19.) As also discussed in OPR's SB743 amendment package transmittal letter "Legislative findings in Senate Bill 743 plainly state that CEQA can no longer treat vibrant communities, transit, and active transportation options as adverse environmental outcomes."Similarly, the state has implemented a number of policies to encourage development in proximity to transit and to foster additional transit use to reduce environmental impacts. (SB 375; see also the SCAG 2016 RTP, which includes expanding access to transit.) However, the current 2010 CMP still requests a transit impact analysis.

Table 16-1
EXISTING TRANSIT SERVICE CAPACITY

09-Oct-18

ROUTE [A]	NO. OF BUSES/TRAINS DURING PEAK HOUR			CAPACITY PER BUS [A]	TOTAL TRANSIT CAPACITY	
	DIR	AM	PM		AM	PM
Metro 117	EB	8	8	50	400	400
	WB	7	6	50	350	300
Metro 120	EB	3	5	50	150	250
	WB	6	4	50	300	200
Metro 258	NB	3	3	50	150	150
	SB	3	3	50	150	150
Metro 265	NB	3	2	50	150	100
	SB	1	2	50	50	100
Metro 266	NB	6	4	50	300	200
	SB	4	4	50	200	200
Metro Rapid 762	NB	5	4	75	375	300
	SB	5	5	75	375	375
Metro Green Line	EB	17	17	266	4522	4522
	WB	17	17	266	4522	4522

Table 16-1 (Continued)
EXISTING TRANSIT SERVICE CAPACITY

ROUTE	NO. OF BUSES/TRAINS DURING PEAK HOUR			CAPACITY PER BUS [A]	TOTAL TRANSIT CAPACITY	
	DIR	AM	PM		AM	PM
DowneyLink Southwest	CW	2	3	50	100	150
	CCW	0	0	50	0	0
DowneyLink Southeast	CW	5	4	50	250	200
	CCW	0	0	50	0	0
G.A.T.E. Eastside	CW	0	0	24	0	0
	CCW	4	4	24	96	96
Lynwood Route B	CW	4	3	32	128	96
	CCW	0	0	32	0	0
TOTAL TRANSIT CAPACITY					**12568**	**12311**

[A] Capacity Assumptions:
Metro Regular Bus / DowneyLink Bus - 40 seated / 50 sseated and standing
Metro Rapid Bus - 66 seated / 75 seated and standing

17.0 CALTRANS FREEWAY OFF-RAMP AND MAINLINE ASSESSMENT

Three off-ramps, one from the I-710 Freeway, and two from the I-105 Freeway, were analyzed to determine the whether the length of the ramps were sufficient to accommodate vehicle queue lengths. The queue lengths were estimated using methodology provided in the *Highway Capacity Manual* (HCM) published by the Transportation Research Board.

The assessment of the off-ramps includes a review of the vehicle queue length as compared to the total available queueing capacity of the ramp to determine whether the vehicle queue would extend beyond the length of the ramp onto the mainline. To this end, the queueing analysis looks at two separate components of the ramp capacity: the length of each approach lane to the intersection, and the remaining length of the ramp, behind any approach lane delineation lines, to the point where the ramp diverges from the freeway mainline. The queue may exceed the striped length of a given approach lane, as long as there is sufficient additional queueing capacity on the ramp, it will not spill over onto the mainline. HCM reports the 95th percentile queue length, in feet, for each approach lane on the off-ramp. The HCM data worksheets for the three analyzed off-ramps are contained in *Appendix F*.

Two freeway segments on the I-105 Freeway were analyzed using the HCM methodology to determine the Project's impact on the freeway segment. The HCM data worksheets for the analyzed mainline segment are contained in *Appendix F*.

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17.1 Existing Conditions – Off-Ramps

17.1.1 *Existing Conditions*

As shown in ***Table 17–1***, none of three analyzed freeway off-ramps exceed the available storage on the ramp during the AM and PM peak hours under existing conditions. The existing traffic volumes at the off-ramp study intersections during the weekday AM and PM peak hours are displayed in *Figures 5–1* and *5–2*, respectively.

17.1.2 *Existing With Project Conditions*

As shown in *Table 17–1,* none of the three analyzed freeway off-ramps exceed the available storage on the ramp during the AM and PM peak hours under "Existing With Project" conditions. The existing with project traffic volumes at the analyzed off-ramps during the weekday AM and PM peak hours are illustrated in *Figures 9–1* and *9–2*, respectively.

17.2 Future Cumulative Conditions – Off Ramps

17.2.1 *Future Cumulative Without Project Conditions*

The future cumulative without project conditions were forecast based on the addition of the traffic generated by ambient annual growth rates and the completion and occupancy of the other related projects. As presented in ***Table 17–2***, none of the study intersections are expected to exceed the available storage on the ramp during the weekday AM and PM peak hours with the addition of growth in ambient traffic and related project traffic under the future cumulative without project conditions. The future cumulative without project traffic volumes at the

Table 17-1
FREEWAY OFF-RAMP QUEUE EVALUATION
EXISTING OPERATING CONDITIONS (YEAR 2017)

01-Apr-20

NO.	INTERSECTION	RAMP AND LANE DESCRIPTION	VEHICLE STORAGE CAPACITY [a]	EXISTING CONDITIONS				EXISTING WITH PROJECT CONDITIONS			
				AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
				VEHICLE QUEUE LENGTH	EXCEEDS CAPACITY?	VEHICLE QUEUE LENGTH	EXCEEDS CAPACITY?	VEHICLE QUEUE LENGTH	EXCEEDS CAPACITY?	VEHICLE QUEUE LENGTH	EXCEEDS CAPACITY?
2	Wright Road /	I-710 Southbound Off-Ramp									
	I-710 SB Off-Ramp - Abbott Road	Shared Left/Through	690	176	NO	171	NO	191	NO	174	NO
		Shared Through/Right	690	164	NO	158	NO	183	NO	161	NO
		Ramp	530	0	NO	0	NO	0	NO	0	NO
11	Garfield Avenue /	I-105 Eastbound Off-Ramp									
	S. Somerset Ranch Road	Shared Left/Through	589	274	NO	166	NO	315	NO	278	NO
		Through	589	248	NO	148	NO	278	NO	252	NO
		Right	589	316	NO	177	NO	313	NO	285	NO
		Ramp	1279	0	NO	0	NO	0	NO	0	NO
21	Paramount Boulevard /	I-105 Westbound Off-Ramp									
	N. Somerset Ranch Road	Left	425	160	NO	178	NO	156	NO	175	NO
		Through	425	385	NO	297	NO	376	NO	293	NO
		Right	425	271	NO	270	NO	346	NO	279	NO
		Ramp	1180	0	NO	0	NO	0	NO	0	NO

[a] Expressed in feet.
[b] 95th Percentile queue results per 2010 Highway Capacity Manual, Transportation Research Board, 2010

Table 17-2
FREEWAY OFF-RAMP QUEUE EVALUATION
FUTURE OPERATING CONDITIONS (YEAR 2021)

01-Apr-20

NO.	INTERSECTION	RAMP AND LANE DESCRIPTION	VEHICLE STORAGE CAPACITY [a]	FUTURE WITHOUT PROJECT CONDITIONS				FUTURE WITH PROJECT CONDITIONS			
				AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
				VEHICLE QUEUE LENGTH	EXCEEDS CAPACITY?	VEHICLE QUEUE LENGTH	EXCEEDS CAPACITY?	VEHICLE QUEUE LENGTH	EXCEEDS CAPACITY?	VEHICLE QUEUE LENGTH	EXCEEDS CAPACITY?
2	Wright Road /	I-710 Southbound Off-Ramp									
	I-710 SB Off-Ramp - Abbott Road	Shared Left/Through	690	187	NO	185	NO	200	NO	188	NO
		Shared Through/Right	690	173	NO	170	NO	192	NO	174	NO
		Ramp	530	0	NO	0	NO	0	NO	0	NO
11	Garfield Avenue /	I-105 Eastbound Off-Ramp									
	S. Somerset Ranch Road	Shared Left/Through	589	268	NO	275	NO	307	NO	281	NO
		Through	589	242	NO	249	NO	271	NO	254	NO
		Right	589	328	NO	295	NO	322	NO	295	NO
		Ramp	1279	0	NO	0	NO	0	NO	0	NO
21	Paramount Boulevard /	I-105 Westbound Off-Ramp									
	N. Somerset Ranch Road	Left	425	165	NO	186	NO	164	NO	183	NO
		Through	425	396	NO	309	NO	395	NO	304	NO
		Right	425	255	NO	273	NO	332	NO	282	NO
		Ramp	1180	0	NO	0	NO	0	NO	0	NO

[a] Expressed in feet.
[b] 95th Percentile queue results per 2010 Highway Capacity Manual, Transportation Research Board, 2010

analyzed off-ramps during the AM and PM peak hours are illustrated in *Figures 9–3* and *9–4*, respectively.

17.2.2 *Future Cumulative Without Project Conditions*

As shown in *Table 17–2,* none of the three analyzed freeway off-ramps exceed the available storage on the ramp during the AM and PM peak hours under "Future Cumulative With Project" conditions. The future cumulative with project traffic volumes at the analyzed off-ramps during the weekday AM and PM peak hours are illustrated in *Figures 9–5* and *9–6*, respectively.

17.3 Existing Conditions – Mainline

17.3.1 *Existing Conditions*

Existing freeway volume data was collected from Caltrans' Performance Measurement System for the average weekday traffic volume in 2017. As shown in ***Table 17–3***, the analyzed mainline segments are operating at LOS D or better in each direction during the AM and PM peak hours under existing conditions.

17.3.2 *Existing With Project Conditions*

As shown in *Table 17–3,* the analyzed mainline segments are expected to operate at LOS D or better in each direction during the AM and PM peak hours under "Existing With Project" conditions.

17.4 Future Cumulative Conditions – Mainline

17.4.1 *Future Cumulative Baseline Conditions*

The future cumulative baseline conditions were forecast based on the addition of the traffic generated by ambient annual growth rates. As presented in ***Table 17–4***, the I-105 Freeway west of Garfield Avenue is expected to operate at LOS D during the AM and PM peak hours, while the I-105 Freeway east of Paramount Boulevardis expected to operate at LOS E during the AM and PM peak hours with the addition of growth in ambient traffic under future cumulative baseline conditions.

17.4.2 *Future Cumulative With Project Conditions*

As shown in *Table 17–4,* the I-105 Freeway west of Garfield Avenue is expected to operate at LOS D during the AM and PM peak hours, while the I-105 Freeway east of Paramount Boulevardis expected to operate at LOS E during the AM and PM peak hours with the addition of growth in ambient traffic under "Future Cumulative With Project" conditions.

Table 17-3
FREEWAY SEGMENT LEVEL OF SERVICE EVALUATION [a]
EXISTING OPERATING CONDITIONS (YEAR 2017)

01-Apr-20

NO.	FREEWAY SEGMENT	DIRECTION	EXISTING CONDITIONS				EXISTING WITH PROJECT CONDITIONS			
			AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
			DENSITY [b]	LOS [c]	DENSITY [b]	LOS [c]	DENSITY [b]	LOS [c]	DENSITY [b]	LOS [c]
1	I-105 west of Garfield Avenue	Eastbound	27.7	D	27.7	D	28.4	D	27.8	D
		Westbound	27.7	D	27.7	D	27.8	D	28.2	D
2	I-105 east of Paramount Boulevard	Eastbound	33.0	D	33.0	D	33.1	D	33.5	D
		Westbound	33.0	D	33.0	D	33.7	D	33.1	D

[a] Freeway segment analysis based on the Highway Capacity Manual 2010 methodologies.
[b] Density reported in vehicles per mile per lane for freeways with a free-flow speed of 55 mph.
[c] Freeway Segment Levels of Service were based on the following criteria:

Density (veh/mile/lane)	LOS
<= 11	A
> 11-18	B
> 18-26	C
> 26-35	D
> 35-45	E
> 45	F

Table 17-4
FREEWAY SEGMENT LEVEL OF SERVICE EVALUATION [a]
EXISTING OPERATING CONDITIONS (YEAR 2021)

01-Apr-20

NO.	FREEWAY SEGMENT	DIRECTION	FUTURE CONDITIONS				FUTURE WITH PROJECT CONDITIONS			
			AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
			DENSITY [b]	LOS [c]	DENSITY [b]	LOS [c]	DENSITY [b]	LOS [c]	DENSITY [b]	LOS [c]
1	I-105 west of Garfield Avenue	Eastbound	28.9	D	28.9	D	29.5	D	29.0	D
		Westbound	28.9	D	28.9	D	28.9	D	29.4	D
2	I-105 east of Paramount Boulevard	Eastbound	35.2	E	35.2	E	35.3	E	35.8	E
		Westbound	35.2	E	35.2	E	35.9	E	35.3	E

[a] Freeway segment analysis based on the Highway Capacity Manual 2010 methodologies.
[b] Density reported in vehicles per mile per lane for freeways with a free-flow speed of 55 mph.
[c] Freeway Segment Levels of Service were based on the following criteria:

Density (veh/mile/lane)	LOS
<= 11	A
> 11-18	B
> 18-26	C
> 26-35	D
> 35-45	E
> 45	F

18.0 CONSTRUCTION IMPACT ASSESSMENT

18.1 Construction Assumptions

There are two phases related to construction of the proposed project, each with separate trip generation characteristics. First is the shoring/excavation phase which generally results in the highest number of truck trips per day as compared to other phases of project construction. Second is the building construction phase which typically generates the highest number of construction workers on site as compared to other phases of construction.

Shoring/Excavation

The shoring/excavation phase of the project would result in the need to export approximately 5,333 cubic yards of material from the project site. During this phase, hauling of material from the Project Site would occur on weekdays between 7:00 AM and 3:00 PM (i.e., an 8-hour period). Up to 226 truck one-way trips per day (i.e., 113 inbound and 113 outbound), or approximately 14 trucks per hour, carrying approximately 12 cubic yards of material per truck are expected. It is anticipated that soils for campus grading would be balanced on site over a period of 10 hauling days. The removal of the 5,333 cubic yards of material for soil remediation would occur over a period of 15 hauling days.

The primary route to be used by haul trucks traveling to and from the project site will include the following two designated truck-routes: Imperial Highway and the I-710 (Long Beach) Freeway.

In addition to the trips by hauling trucks, there would be 40 one-way trips per day by construction workers (20 inbound and 20 outbound) related to the shoring/excavation phase.

Building Construction

Building construction is estimated to occur over an 18-month period. During peak construction activity, it is estimated that approximately 830 construction workers will be on-site per day. The 830 construction workers would generate approximately 1,660 one-way trips per day (830 inbound and 830 outbound), as well as 698 daily one-way trips by miscellaneous delivery trucks (349 inbound and 349 outbound).

Building construction is assumed to occur on weekdays between 7:00 AM and 7:00 PM.

Construction Worker Parking and Roadway/Sidewalk Closures

Parking for construction workers would be provided within the project site by the County. Street parking by construction workers would not be permitted.

The construction of the project would not require the closure of any vehicle travel lanes adjacent to the site (i.e., on Imperial Highway and Gardendale Street). Also, construction of the proposed project is not expected to result in the loss of any street parking or require the temporary closure of any existing sidewalks. The Design-Builder/Contractor would prepare a work site traffic

control plan prior to the start of construction. That plan would show the location of any warning signs and access to abutting properties.

18.2 Vehicle Trip Generation

The potential transportation impacts of the project at build-out and occupancy are assessed in Sections 9.0 through 13.0 herein based on the evaluation of operations at local intersections during the weekday morning (AM) and afternoon (PM) commuter peak hours. Set forth below is a similar forecast of trip generation related to project construction, which is provided for the AM and PM peak hours for comparison purposes to the project at build-out. Also provided for informational purposes is a forecast of the weekday daily (24-hour) trip generation related to construction of the project.

In addition to the construction assumptions outlined in the prior section, the following additional assumptions are made relative to vehicular trip generation during the construction period:

- Typically, most construction workers arrive and depart the worksite outside of the commuter peak hours. For this analysis, it has been conservatively assumed that 20% of the inbound daily trips would arrive at the project site during the AM peak hour and that 20% of the outbound daily trips would depart the project site during the PM peak hour.

- Trucks utilize more of the physical roadway as compared to passenger cars and small trucks. Thus, for trips generated by trucks, a passenger car equivalency (PCE) factor of 2.0 has been assumed based on factors provided in the *Highway Capacity Manual* published by the Transportation Research Board.

Table 18–1 provides the trip generation forecast related to construction of the Project. As shown in *Table 18–1*, the forecast trip generation by phase of construction is as follows:

- Shoring/Excavation
  - 492 daily trips (246 inbound/246 outbound)
  - 32 AM peak hour trips (18 inbound/14 outbound)
  - 6 PM peak hour trips (0 inbound/6 outbound)

- Building Construction
  - 3,056 daily trips (1,528 inbound/1,528 outbound)
  - 306 AM peak hour trips (236 inbound/70 outbound)
  - 306 PM peak hour trips (70 inbound/236 outbound)

Table 18-1
CONSTRUCTION TRIP GENERATION [1]

08-Jul-19

PHASE	DAILY TRIP ENDS VOLUMES	AM PEAK HOUR VOLUMES			PM PEAK HOUR VOLUMES		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Shoring / Excavation							
Construction Workers	40	4	0	4	0	6	6
Trucks	226	7	7	14	0	0	0
PCE (2.0) Adjusted [2]	452	14	14	28	0	0	0
Phase Subtotal (PCE Adjusted)	**492**	**18**	**14**	**32**	**0**	**6**	**6**
Building Construction							
Construction Workers	1,660	166	0	166	0	166	166
Trucks	698	35	35	70	35	35	70
PCE (2.0) Adjusted [2]	1,396	70	70	140	70	70	140
Phase Subtotal (PCE Adjusted)	**3,056**	**236**	**70**	**306**	**70**	**236**	**306**

[1] Source: ESA
[2] A Passenger Car Equivalent (PCE) factor of 2.0 was applied to all trucks based on standard traffic engineering practice to conservatively estimate the equivalent number of vehicles associated with the trucks.

18.3 Transportation Assessment

Table 7–1 provides the trip generation forecast for the Project at build-out. As shown in *Table 7–1*, the project is forecast to generate 7,443 net new trips during a typical weekday, including 1,038 net new AM peak hour trips and 884 net new PM peak hour trips. By comparison, the shoring/excavation phase is estimated to generate 492 daily trips, 32 AM peak hour trips and 6 PM peak hour trips while the building construction phase is estimated to generate 3,056 daily trips, 306 AM peak hour trips and 306 PM peak hour trips. Thus, construction activity at the project site would generate significantly fewer trips than the operation of the project following its completion.

It is reasonable to conclude that the potential transportation impacts related to construction of the project have been suitably evaluated through the transportation impact analysis provided herein for the project at build-out. In addition, the potential transportation impacts related to be construction would be substantially less as compared to the project's operational trips due to the relatively lower trip generation associated with construction as compared to project operation. Therefore, no additional impacts associated with construction of the project would occur.

19.0 CONCLUSIONS

This traffic impact analysis has been prepared to evaluate the potential impacts to the local street system due to the Rancho Los Amigos South Campus project. Twenty-seven intersections were identified and analyzed in the County of Los Angeles, as well as the nearby cities of Downey, South Gate, Paramount and Lynwood in order to determine changes in operations following construction and occupancy of the proposed project. The project is forecast to cause significant traffic impacts during the weekday AM and/or PM peak hours at six of the 27 intersections evaluated.

The following provides a summary of the potential transportation impacts of the project at the study intersections.

Significantly Impacted Intersections with No Feasible Mitigation. The project would cause a potentially significant transportation impacts at the following study intersections for which there are no reasonable and feasible mitigation measures:

- Int. No. 7: Garfield Avenue / Monroe Avenue (City of South Gate)
- Int. No. 15: Industrial Avenue / Gardendale Street (Cities of Downey and South Gate)
- Int. No. 17: Arizona Avenue / Gardendale Street (Cities of Downey and South Gate)
- Int. No. 20: Paramount Boulevard / Gardendale Street (City of Paramount)

Significantly Impacted Intersections with Potentially Feasible Mitigation But Implementation is Not Guaranteed. The project would cause a potentially significant transportation impacts at the following study intersections for which potential mitigation measures have been proposed, but implementation is not guaranteed because the intersections are outside the jurisdiction of the County of Los Angeles:

- Int. No. 3: Wright Road / Imperial Highway (Cities of South Gate and Lynwood)
- Int. No. 16: Erickson Avenue / Gardendale Street (Cities of Downey and South Gate, County of Los Angeles)

APPENDIX A

MANUAL TRAFFIC COUNT DATA

Prepared by National Data & Surveying Services

Atlantic Ave & Imperial Hwy

Peak Hour Turning Movement Count

ID: 17-05668-001
City: Lynwood

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:15 PM - 05:15 PM	04:00 PM - 06:00 PM

Atlantic Ave — SOUTHBOUND

AM	171	555	310	0	740	AM
NOON	0	0	0	0	0	NOON
PM	156	589	230	0	745	PM
	1	2	1	0		

Imperial Hwy — EASTBOUND

AM	NOON	PM	
1220	0	1122	
0	0	0	0
83	0	90	1
633	0	780	2
76	0	62	0
AM	NOON	PM	

CONTROL

Signalized

TEV	3994 AM	0 NOON	3936 PM
PHF	0.98		0.99

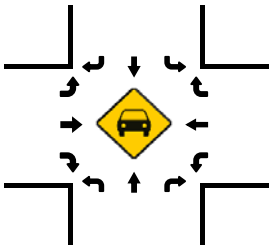
Imperial Hwy — WESTBOUND

PM	NOON	AM	
96	0	63	0
793	0	866	2
133	0	116	1
4	0	2	0
1285	0	1287	
PM	NOON	AM	

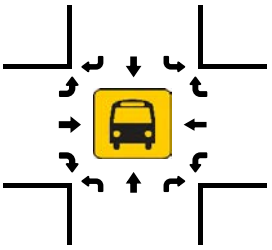
Atlantic Ave — NORTHBOUND

PM	784	0	173	559	271	PM
NOON	0	0	0	0	0	NOON
AM	747	0	183	594	342	AM
		0	1	2	1	

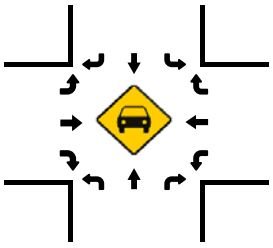
Total Vehicles (AM)



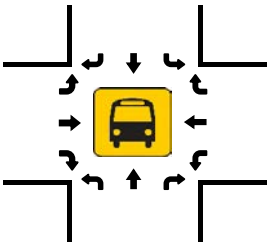
Total Vehicles (AM)



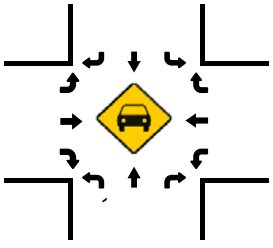
Total Vehicles (NOON)



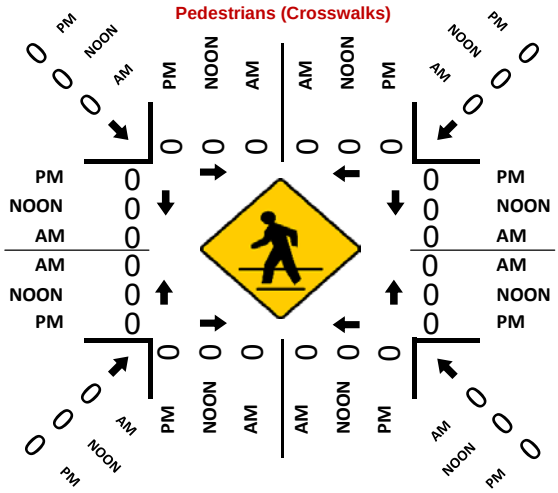
Total Vehicles (NOON)



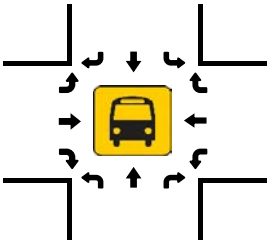
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Atlantic Ave & Imperial Hwy
City: Lynwood
Control: Signalized

Project ID: 17-05668-001
Date: 10/11/2017

Total

NS/EW Streets:	Atlantic Ave				Atlantic Ave				Imperial Hwy				Imperial Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	38	112	98	0	55	85	46	0	11	173	12	0	16	287	12	0	945
7:15 AM	36	172	117	0	75	148	38	0	21	129	8	0	14	214	13	0	985
7:30 AM	47	131	78	0	77	128	42	0	14	175	16	0	35	224	11	1	979
7:45 AM	52	154	95	0	84	138	51	0	15	148	25	0	33	201	24	1	1021
8:00 AM	48	137	52	0	74	141	40	0	33	181	27	0	34	227	15	0	1009
8:15 AM	36	150	65	0	58	158	55	0	19	150	26	0	38	200	15	0	970
8:30 AM	33	116	50	0	53	110	36	0	21	162	21	0	35	235	23	0	895
8:45 AM	31	108	44	0	48	110	39	0	20	123	14	0	32	184	25	1	779
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	321	1080	599	0	524	1018	347	0	154	1241	149	0	237	1772	138	3	7583
APPROACH %'s :	16.05%	54.00%	29.95%	0.00%	27.74%	53.89%	18.37%	0.00%	9.97%	80.38%	9.65%	0.00%	11.02%	82.42%	6.42%	0.14%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	183	594	342	0	310	555	171	0	83	633	76	0	116	866	63	2	3994
PEAK HR FACTOR :	0.880	0.863	0.731	0.000	0.923	0.938	0.838	0.000	0.629	0.874	0.704	0.000	0.829	0.954	0.656	0.500	0.978
	0.861				0.949				0.822				0.948				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	34	128	69	0	55	126	42	0	31	204	13	0	27	203	22	1	955
4:15 PM	44	151	75	0	64	163	46	0	25	172	12	0	34	171	22	2	981
4:30 PM	41	127	71	0	52	128	35	0	20	222	15	0	35	209	29	2	986
4:45 PM	47	145	69	0	59	164	33	0	21	170	24	0	34	190	22	0	978
5:00 PM	41	136	56	0	55	134	42	0	24	216	11	0	30	223	23	0	991
5:15 PM	41	141	76	0	54	156	41	0	13	156	12	0	32	171	31	2	926
5:30 PM	29	126	73	0	40	151	35	0	21	222	10	0	42	215	20	1	985
5:45 PM	54	156	84	0	50	130	42	0	26	174	12	0	24	185	24	0	961
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	331	1110	573	0	429	1152	316	0	181	1536	109	0	258	1567	193	8	7763
APPROACH %'s :	16.43%	55.11%	28.45%	0.00%	22.61%	60.73%	16.66%	0.00%	9.91%	84.12%	5.97%	0.00%	12.73%	77.34%	9.53%	0.39%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	173	559	271	0	230	589	156	0	90	780	62	0	133	793	96	4	3936
PEAK HR FACTOR :	0.920	0.925	0.903	0.000	0.898	0.898	0.848	0.000	0.900	0.878	0.646	0.000	0.950	0.889	0.828	0.500	0.993
	0.929				0.893				0.907				0.929				

Prepared by National Data & Surveying Services

Wright Rd & I-710 SB Off-Ramp/Abbott Rd

Peak Hour Turning Movement Count

ID: 17-05668-002
City: Lynwood

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

Wright Rd — SOUTHBOUND

	L	T	R	U	
AM	15	452	0	0	563 AM
NOON	0	0	0	0	0 NOON
PM	9	474	0	0	750 PM

I-710 SB Off-Ramp/Abbott Rd — EASTBOUND

AM	NOON	PM		
859	0	846	⇦	
0	0	0	↶	0
9	0	17	↱	0
0	0	0	→	2
671	0	522	↴	0

I-710 SB Off-Ramp/Abbott Rd — WESTBOUND

PM	NOON	AM		
53	0	35	↰	0.5
397	0	506	←	1
55	0	52	↙	0.5
0	0	0	↩	0
0	0	0	⇨	

Wright Rd — NORTHBOUND

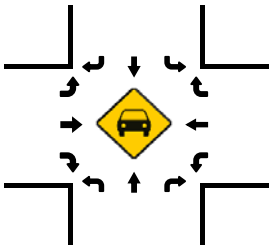
	L	T	R	U	
PM	1051	0	440	680	0 PM
NOON	0	0	0	0	0 NOON
AM	1175	0	338	519	0 AM

	L	T	R	U
	0	2	0	0
	0	1	2	0

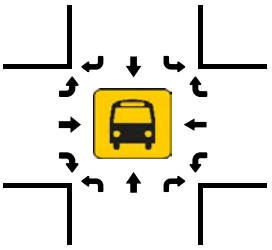
CONTROL: Signalized

		AM	NOON	PM
TEV	2597	0	2647	
PHF		0.97		0.95

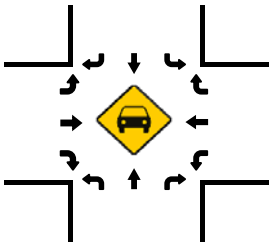
Total Vehicles (AM)



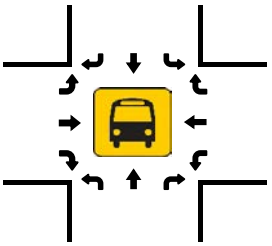
Total Vehicles (AM)



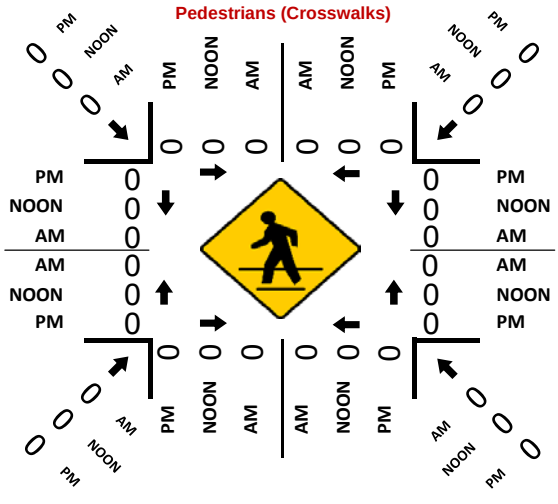
Total Vehicles (NOON)



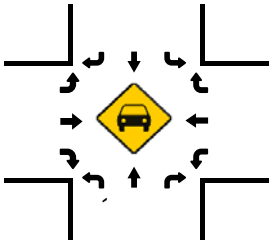
Total Vehicles (NOON)



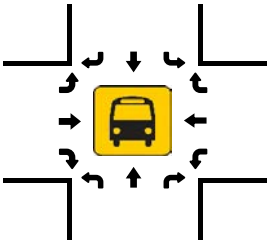
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Wright Rd & I-710 SB Off-Ramp/Abbott Rd
City: Lynwood
Control: Signalized

Project ID: 17-05668-002
Date: 10/11/2017

Total

NS/EW Streets:	Wright Rd				Wright Rd				I-710 SB Off-Ramp/Abbott Rd				I-710 SB Off-Ramp/Abbott Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	0	0	0	2	0	0	0.5	1	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	99	145	0	0	0	108	3	0	2	0	141	0	7	120	7	0	632
7:15 AM	80	122	0	0	0	108	2	0	2	0	215	0	13	119	7	0	668
7:30 AM	67	131	0	0	0	115	4	0	2	0	169	0	14	138	7	0	647
7:45 AM	92	121	0	0	0	121	6	0	3	0	146	0	18	129	14	0	650
8:00 AM	102	132	0	0	0	95	1	0	1	0	96	0	16	121	12	0	576
8:15 AM	90	102	0	0	0	97	0	0	3	0	123	1	22	107	9	0	554
8:30 AM	85	121	0	0	0	97	2	0	2	0	92	0	13	118	2	0	532
8:45 AM	56	121	0	0	0	75	2	0	3	0	107	0	14	91	14	0	483
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	671	995	0	0	0	816	20	0	18	0	1089	1	117	943	72	0	4742
APPROACH %'s :	40.28%	59.72%	0.00%	0.00%	0.00%	97.61%	2.39%	0.00%	1.62%	0.00%	98.29%	0.09%	10.34%	83.30%	6.36%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	338	519	0	0	0	452	15	0	9	0	671	0	52	506	35	0	2597
PEAK HR FACTOR :	0.854	0.895	0.000	0.000	0.000	0.934	0.625	0.000	0.750	0.000	0.780	0.000	0.722	0.917	0.625	0.000	0.972
	0.878				0.919				0.783				0.921				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	0	0	0	2	0	0	0.5	1	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	93	150	0	0	0	113	3	0	2	0	96	1	19	76	12	0	565
4:15 PM	100	167	0	0	0	127	1	0	9	0	139	0	19	67	12	0	641
4:30 PM	106	161	0	0	0	116	2	0	2	0	100	0	12	76	17	0	592
4:45 PM	113	157	0	0	0	90	3	0	5	0	123	0	14	76	10	0	591
5:00 PM	110	171	0	0	0	118	0	0	4	0	129	0	10	91	17	0	650
5:15 PM	111	173	0	0	0	103	3	0	4	0	124	0	14	109	16	0	657
5:30 PM	114	159	0	0	0	120	4	0	5	0	126	0	12	96	7	0	643
5:45 PM	105	177	0	0	0	133	2	0	4	0	143	0	19	101	13	0	697
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	852	1315	0	0	0	920	18	0	35	0	980	1	119	692	104	0	5036
APPROACH %'s :	39.32%	60.68%	0.00%	0.00%	0.00%	98.08%	1.92%	0.00%	3.44%	0.00%	96.46%	0.10%	13.01%	75.63%	11.37%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	440	680	0	0	0	474	9	0	17	0	522	0	55	397	53	0	2647
PEAK HR FACTOR :	0.965	0.960	0.000	0.000	0.000	0.891	0.563	0.000	0.850	0.000	0.913	0.000	0.724	0.911	0.779	0.000	0.949
	0.986				0.894				0.917				0.908				

Prepared by National Data & Surveying Services

Wright Rd & Imperial Hwy

Peak Hour Turning Movement Count

ID: 17-05668-003
City: Lynwood

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

Wright Rd — SOUTHBOUND

AM	46	36	1162	0	836	AM
NOON	0	0	0	0	0	NOON
PM	21	93	957	0	1125	PM
	1	0.5	1.5	0		

Imperial Hwy — EASTBOUND

AM	NOON	PM	
1065	0	1047	
0	0	0	0
7	0	10	1
1302	0	1226	2
11	0	12	0

Imperial Hwy — WESTBOUND

	PM	NOON	AM
1	1060	0	776
2	998	0	1005
0	0	0	0
0	0	0	0
	2479	0	2957

CONTROL

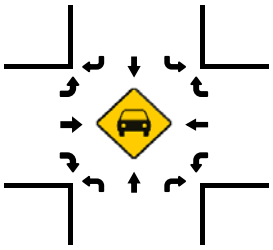
Signalized

	AM	NOON	PM
TEV	4905	0	4756
PHF	0.97		0.99

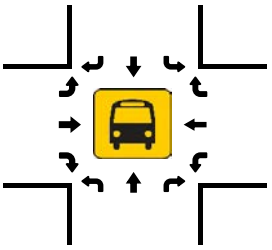
Wright Rd — NORTHBOUND

	0	0.3	0.3	1.3		
PM	105	0	28	55	296	PM
NOON	0	0	0	0	0	NOON
AM	47	0	14	53	493	AM

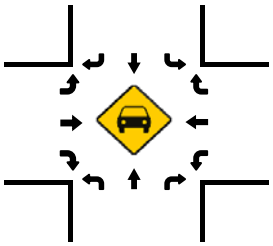
Total Vehicles (AM)



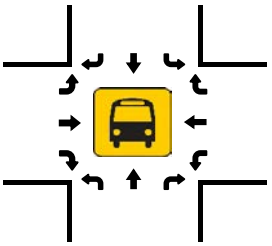
Total Vehicles (AM)



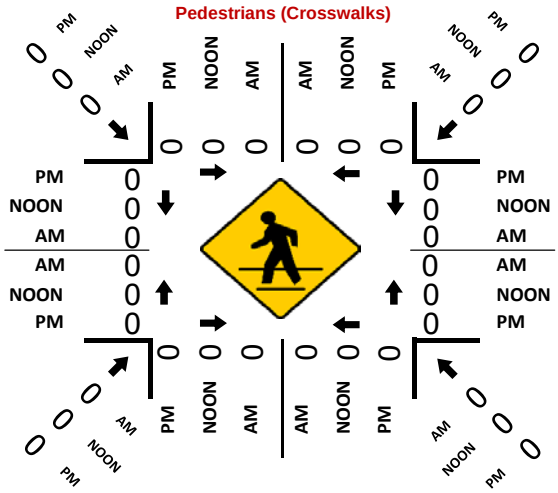
Total Vehicles (NOON)



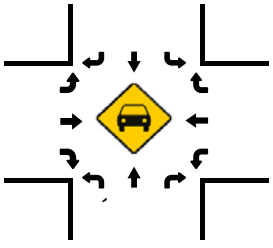
Total Vehicles (NOON)



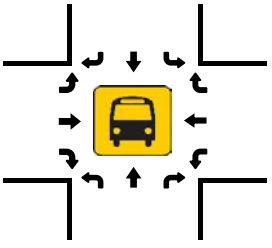
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Wright Rd & Imperial Hwy
City: Lynwood
Control: Signalized

Project ID: 17-05668-003
Date: 10/11/2017

Total

NS/EW Streets:	Wright Rd				Wright Rd				Imperial Hwy				Imperial Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.3	0.3	1.3	0	1.5	0.5	1	0	1	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	7	19	99	0	264	10	8	0	2	305	1	0	0	262	207	0	1184
7:15 AM	1	7	155	0	324	6	8	0	0	328	3	0	0	243	186	0	1261
7:30 AM	1	14	119	0	321	7	15	0	2	327	2	0	0	238	187	0	1233
7:45 AM	5	13	120	0	253	13	15	0	3	342	5	0	0	262	196	0	1227
8:00 AM	7	12	82	0	232	10	11	0	6	275	6	0	0	238	227	0	1106
8:15 AM	8	11	67	0	203	9	22	0	6	287	6	0	0	243	203	0	1065
8:30 AM	11	14	71	0	196	23	9	0	3	245	7	0	0	258	180	0	1017
8:45 AM	7	15	80	0	180	12	8	0	4	228	5	1	0	226	161	0	927
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	47	105	793	0	1973	90	96	0	26	2337	35	1	0	1970	1547	0	9020
APPROACH %'s :	4.97%	11.11%	83.92%	0.00%	91.38%	4.17%	4.45%	0.00%	1.08%	97.42%	1.46%	0.04%	0.00%	56.01%	43.99%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	14	53	493	0	1162	36	46	0	7	1302	11	0	0	1005	776	0	4905
PEAK HR FACTOR :	0.500	0.697	0.795	0.000	0.897	0.692	0.767	0.000	0.583	0.952	0.550	0.000	0.000	0.959	0.937	0.000	0.972
			0.859				0.907				0.943				0.949		

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.3	0.3	1.3	0	1.5	0.5	1	0	1	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	6	8	77	0	214	25	6	0	6	302	4	0	0	227	247	0	1122
4:15 PM	4	15	84	0	253	13	6	0	4	304	6	0	0	231	253	0	1173
4:30 PM	5	14	82	0	244	21	7	0	7	321	6	0	0	253	259	0	1219
4:45 PM	7	13	77	0	199	17	6	0	3	291	7	0	0	244	252	0	1116
5:00 PM	7	8	67	0	233	21	2	0	4	312	5	0	0	254	270	0	1183
5:15 PM	12	20	95	0	223	20	10	0	1	293	3	0	0	233	274	0	1184
5:30 PM	4	12	67	0	240	16	8	0	3	324	2	0	0	267	254	0	1197
5:45 PM	5	15	67	0	261	36	1	0	2	297	2	0	0	244	262	0	1192
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	50	105	616	0	1867	169	46	0	30	2444	35	0	0	1953	2071	0	9386
APPROACH %'s :	6.49%	13.62%	79.90%	0.00%	89.67%	8.12%	2.21%	0.00%	1.20%	97.41%	1.39%	0.00%	0.00%	48.53%	51.47%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	28	55	296	0	957	93	21	0	10	1226	12	0	0	998	1060	0	4756
PEAK HR FACTOR :	0.583	0.688	0.779	0.000	0.917	0.646	0.525	0.000	0.625	0.946	0.600	0.000	0.000	0.934	0.967	0.000	0.993
			0.746				0.898				0.948				0.982		

Prepared by National Data & Surveying Services

Ruchti Rd/Garfield Pl & Imperial Hwy

Peak Hour Turning Movement Count

ID: 17-05668-004
City: South Gate

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	
AM	07:15 AM - 08:15 AM
NOON	NONE
PM	04:30 PM - 05:30 PM

COUNT PERIODS	
AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Ruchti Rd/Garfield Pl — SOUTHBOUND

AM	14	14	16	0	94	AM
NOON	0	0	0	0	0	NOON
PM	40	23	35	0	64	PM

Imperial Hwy — EASTBOUND

AM	NOON	PM		
2321	0	2052	⇦	
1	0	0	↶	0
32	0	22	↱	1
1816	0	1646	→	3
493	0	464	↷	0
AM	NOON	PM		

CONTROL

Signalized

TEV	4759	0	4308
	AM	NOON	PM
PHF	0.91		0.96

Imperial Hwy — WESTBOUND

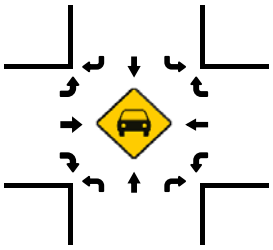
PM	NOON	AM		
31	0	31	↶	0
1591	0	1706	←	3
0	0	0	↰	0
0	0	0	↰	0
1705	0	1837	⇨	
PM	NOON	AM		

Ruchti Rd/Garfield Pl — NORTHBOUND

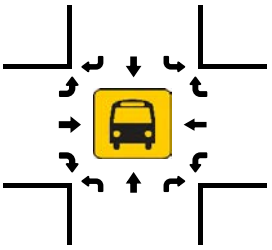
PM	487	0	421	11	24	PM
NOON	0	0	0	0	0	NOON
AM	507	0	600	31	5	AM

0 1 0 0 — 0 2 0.5 0.5

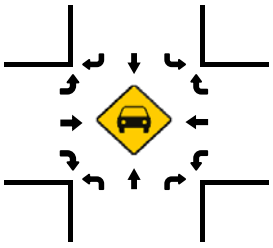
Total Vehicles (AM)



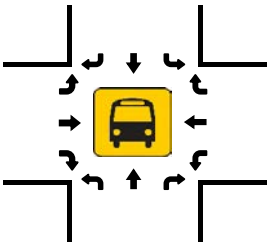
Total Vehicles (AM)



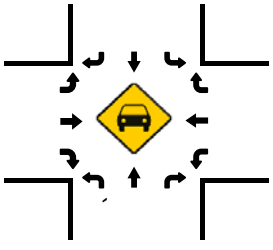
Total Vehicles (NOON)



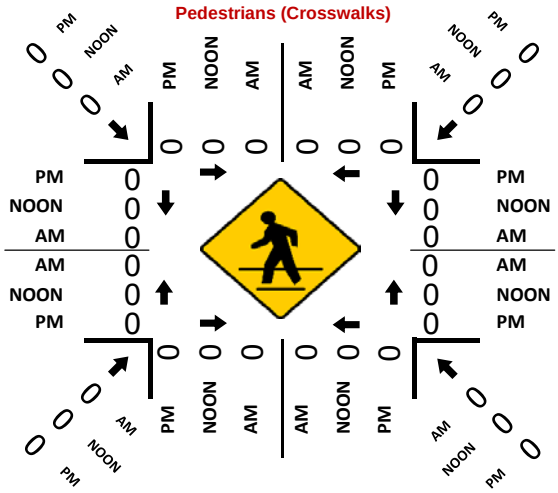
Total Vehicles (NOON)



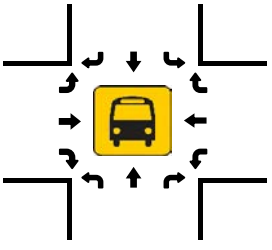
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Ruchti Rd/Garfield Pl & Imperial Hwy
City: South Gate
Control: Signalized

Project ID: 17-05668-004
Date: 10/11/2017

Total

NS/EW Streets:	Ruchti Rd/Garfield Pl				Ruchti Rd/Garfield Pl				Imperial Hwy				Imperial Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	0.5	0.5	0	0	1	0	0	1	3	0	0	0	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	162	6	2	0	3	4	2	0	4	376	65	0	0	430	8	0	1062
7:15 AM	121	6	1	0	8	3	5	0	3	484	89	0	0	450	5	0	1175
7:30 AM	174	5	2	0	3	2	4	0	9	454	132	0	0	423	11	0	1219
7:45 AM	138	16	1	0	3	3	1	0	12	483	158	1	0	478	7	0	1301
8:00 AM	167	4	1	0	2	6	4	0	8	395	114	0	0	355	8	0	1064
8:15 AM	159	5	3	0	1	2	2	0	4	371	89	0	0	353	12	0	1001
8:30 AM	111	3	1	0	1	1	7	0	10	364	62	0	0	325	4	0	889
8:45 AM	109	4	2	0	1	2	5	0	7	384	64	0	0	283	4	0	865
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1141	49	13	0	22	23	30	0	57	3311	773	1	0	3097	59	0	8576
APPROACH %'s :	94.85%	4.07%	1.08%	0.00%	29.33%	30.67%	40.00%	0.00%	1.38%	79.94%	18.66%	0.02%	0.00%	98.13%	1.87%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	600	31	5	0	16	14	14	0	32	1816	493	1	0	1706	31	0	4759
PEAK HR FACTOR :	0.862	0.484	0.625	0.000	0.500	0.583	0.700	0.000	0.667	0.938	0.780	0.250	0.000	0.892	0.705	0.000	0.914
	0.878				0.688				0.895				0.895				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	0.5	0.5	0	0	1	0	0	1	3	0	0	0	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	95	3	6	0	6	6	5	0	5	397	102	1	0	368	8	0	1002
4:15 PM	80	4	6	0	5	4	9	0	8	428	101	0	0	349	7	0	1001
4:30 PM	138	5	9	0	16	3	17	0	3	399	114	0	0	387	7	0	1098
4:45 PM	96	1	4	0	5	5	9	0	6	437	112	0	0	403	8	0	1086
5:00 PM	97	3	7	0	6	12	10	0	6	361	100	0	0	394	11	0	1007
5:15 PM	90	2	4	0	8	3	4	0	7	449	138	0	0	407	5	0	1117
5:30 PM	101	2	6	0	5	4	3	0	0	414	127	1	0	370	11	0	1044
5:45 PM	83	2	2	0	4	6	6	0	6	421	161	0	0	332	4	0	1027
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	780	22	44	0	55	43	63	0	41	3306	955	2	0	3010	61	0	8382
APPROACH %'s :	92.20%	2.60%	5.20%	0.00%	34.16%	26.71%	39.13%	0.00%	0.95%	76.81%	22.19%	0.05%	0.00%	98.01%	1.99%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	421	11	24	0	35	23	40	0	22	1646	464	0	0	1591	31	0	4308
PEAK HR FACTOR :	0.763	0.550	0.667	0.000	0.547	0.479	0.588	0.000	0.786	0.916	0.841	0.000	0.000	0.977	0.705	0.000	0.964
	0.750				0.681				0.897				0.984				

Prepared by National Data & Surveying Services

Garfield Ave & Imperial Hwy

Peak Hour Turning Movement Count

ID: 17-05668-005
City: South Gate

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

SOUTHBOUND — Garfield Ave

	Left	Thru	Right	U-Turn	Total
AM	325	401	116	0	1193
NOON	0	0	0	0	0
PM	299	487	140	0	791
	1	2	2	0	

EASTBOUND — Imperial Hwy

	Left	Thru	Right	U-Turn
AM	1820	0	1627	
NOON	0	0	0	0
PM	186	0	199	1
	1568	0	1465	3
	29	0	19	0

WESTBOUND — Imperial Hwy

	Left	Thru	Right	U-Turn
	107	0	181	0
	1254	0	1433	3
	138	0	150	1
	0	0	0	0
PM	1807	0	1850	
NOON	0	0	0	0
AM	644	0	74	485	202
NOON	0	0	0	0	0
AM	580	0	62	826	166
		0	1	2	0

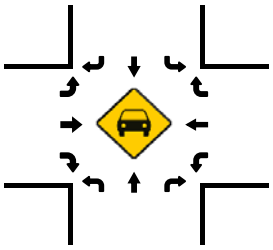
NORTHBOUND — Garfield Ave

CONTROL

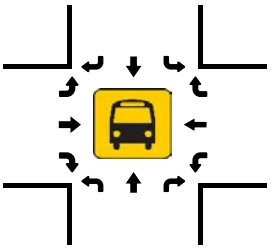
Signalized

		AM	NOON	PM
TEV	5443	0	4869	
PHF	0.96		0.98	

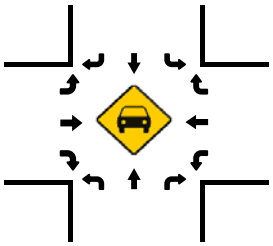
Total Vehicles (AM)



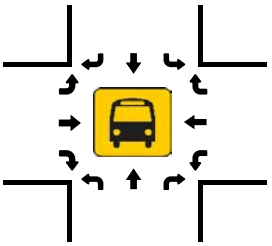
Total Vehicles (AM)



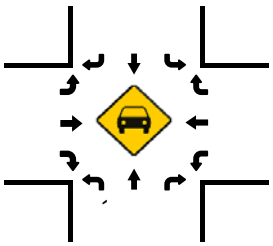
Total Vehicles (NOON)



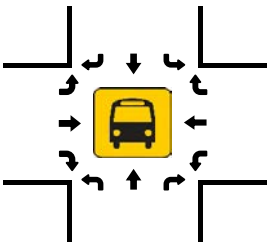
Total Vehicles (NOON)



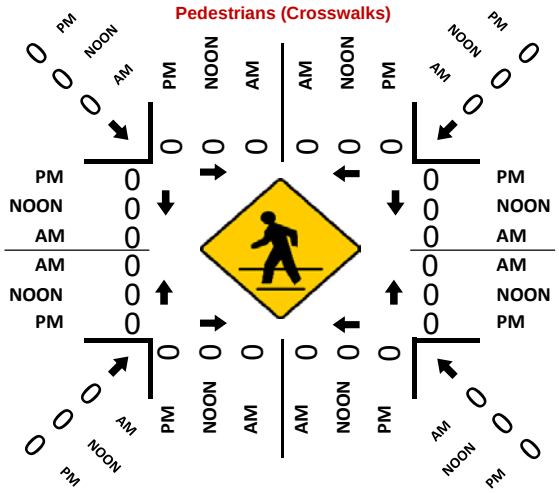
Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Garfield Ave & Imperial Hwy
City: South Gate
Control: Signalized

Project ID: 17-05668-005
Date: 10/11/2017

Total

NS/EW Streets:	Garfield Ave				Garfield Ave				Imperial Hwy				Imperial Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	2	2	1	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	8	189	48	0	22	78	75	0	47	340	8	0	32	386	50	0	1283
7:15 AM	15	232	38	0	19	96	83	0	52	401	4	0	42	334	40	0	1356
7:30 AM	18	200	36	0	36	108	77	0	41	438	9	0	44	375	42	0	1424
7:45 AM	21	205	44	0	39	119	90	0	46	389	8	0	32	338	49	0	1380
8:00 AM	11	191	37	0	45	84	57	0	45	388	6	0	41	317	51	0	1273
8:15 AM	18	217	48	0	20	87	51	0	37	309	8	0	38	277	35	0	1145
8:30 AM	28	180	39	0	28	67	49	0	21	338	10	0	28	280	46	0	1114
8:45 AM	16	157	37	0	21	68	64	0	38	332	4	0	14	201	41	0	993
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	135	1571	327	0	230	707	546	0	327	2935	57	0	271	2508	354	0	9968
APPROACH %'s :	6.64%	77.27%	16.08%	0.00%	15.51%	47.67%	36.82%	0.00%	9.85%	88.43%	1.72%	0.00%	8.65%	80.05%	11.30%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	62	826	166	0	116	401	325	0	186	1568	29	0	150	1433	181	0	5443
PEAK HR FACTOR :	0.738	0.890	0.865	0.000	0.744	0.842	0.903	0.000	0.894	0.895	0.806	0.000	0.852	0.928	0.905	0.000	0.956
	0.925				0.849				0.913				0.942				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	2	2	1	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	14	126	46	0	28	112	71	0	53	327	6	0	30	259	25	0	1097
4:15 PM	17	118	48	0	35	95	70	0	49	375	7	0	32	297	27	0	1170
4:30 PM	25	130	58	0	37	113	63	0	57	354	8	0	31	300	26	0	1202
4:45 PM	19	112	47	0	36	119	78	0	48	392	4	0	33	324	26	0	1238
5:00 PM	14	126	55	0	24	140	83	0	52	335	3	0	47	318	28	0	1225
5:15 PM	16	117	42	0	43	115	75	0	42	384	4	0	27	312	27	0	1204
5:30 PM	28	109	57	0	27	107	50	0	43	383	5	0	29	303	28	0	1169
5:45 PM	16	119	51	0	29	123	65	0	54	357	9	0	34	257	21	0	1135
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	149	957	404	0	259	924	555	0	398	2907	46	0	263	2370	208	0	9440
APPROACH %'s :	9.87%	63.38%	26.75%	0.00%	14.90%	53.16%	31.93%	0.00%	11.88%	86.75%	1.37%	0.00%	9.26%	83.42%	7.32%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	74	485	202	0	140	487	299	0	199	1465	19	0	138	1254	107	0	4869
PEAK HR FACTOR :	0.740	0.933	0.871	0.000	0.814	0.870	0.901	0.000	0.873	0.934	0.594	0.000	0.734	0.968	0.955	0.000	0.983
	0.893				0.937				0.948				0.954				

Prepared by National Data & Surveying Services

Garfield Ave & Gardendale St

Peak Hour Turning Movement Count

ID: 17-05668-006
City: South Gate

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	
AM	07:30 AM - 08:30 AM
NOON	NONE
PM	05:00 PM - 06:00 PM

COUNT PERIODS	
AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Garfield Ave — SOUTHBOUND

AM	33	611	415	0	1730	AM
NOON	0	0	0	0	0	NOON
PM	60	699	484	0	1029	PM

Gardendale St — EASTBOUND

AM	NOON	PM	
72	0	111	⇦
0	0	0	0
73	0	41	0
59	0	26	2
11	0	9	0

Gardendale St — WESTBOUND

PM	NOON	AM	
347	0	736	2
37	0	34	0.5
83	0	121	0.5
0	0	0	0
561	0	504	⇨

Garfield Ave — NORTHBOUND

PM	791	0	14	641	51	PM
NOON	0	0	0	0	0	NOON
AM	743	0	5	921	30	AM

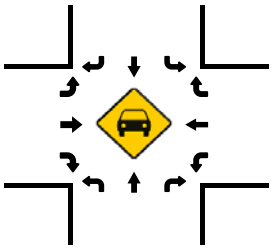
	0	2	2	0
	0	1	2	0

CONTROL

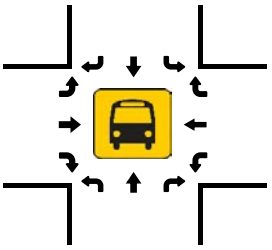
Signalized

TEV	3049	0	2492
	AM	NOON	PM
PHF	0.92		0.97

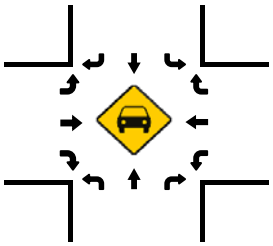
Total Vehicles (AM)



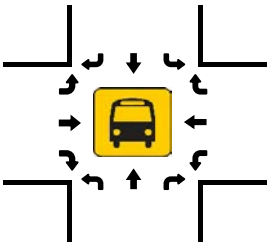
Total Vehicles (AM)



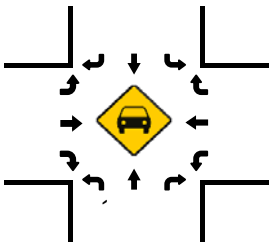
Total Vehicles (NOON)



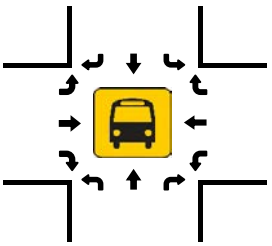
Total Vehicles (NOON)



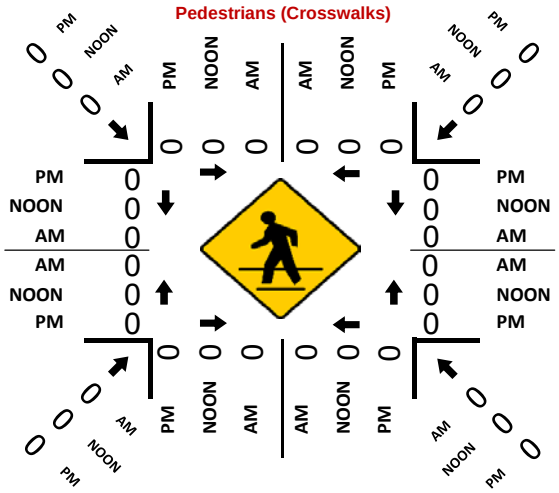
Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Garfield Ave & Gardendale St
City: South Gate
Control: Signalized

Project ID: 17-05668-006
Date: 10/11/2017

Total

NS/EW Streets:	Garfield Ave				Garfield Ave				Gardendale St				Gardendale St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	2	2	0	0	0	2	0	0	0.5	0.5	2	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	219	4	0	41	106	5	0	22	9	2	0	13	3	163	0	588
7:15 AM	0	214	4	0	80	117	6	0	21	20	4	0	24	7	177	0	674
7:30 AM	1	239	5	0	114	172	11	0	19	24	2	0	38	4	198	0	827
7:45 AM	2	208	7	0	146	148	5	0	19	18	1	0	33	7	206	0	800
8:00 AM	0	207	10	0	78	163	10	0	23	11	3	0	31	14	178	0	728
8:15 AM	2	267	8	0	77	128	7	0	12	6	5	0	19	9	154	0	694
8:30 AM	1	209	5	0	54	108	6	0	15	5	2	0	7	9	115	0	536
8:45 AM	0	192	6	0	33	95	6	0	12	5	1	0	4	4	117	0	475
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	7	1755	49	0	623	1037	56	0	143	98	20	0	169	57	1308	0	5322
APPROACH %'s :	0.39%	96.91%	2.71%	0.00%	36.31%	60.43%	3.26%	0.00%	54.79%	37.55%	7.66%	0.00%	11.02%	3.72%	85.27%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	5	921	30	0	415	611	33	0	73	59	11	0	121	34	736	0	3049
PEAK HR FACTOR :	0.625	0.862	0.750	0.000	0.711	0.888	0.750	0.000	0.793	0.615	0.550	0.000	0.796	0.607	0.893	0.000	0.922
		0.863				0.885				0.794				0.905			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	2	2	0	0	0	2	0	0	0.5	0.5	2	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	4	165	11	0	111	184	15	0	10	9	3	0	18	14	65	0	609
4:15 PM	6	158	8	0	103	129	12	0	12	9	1	0	13	8	85	0	544
4:30 PM	5	203	10	0	116	164	8	0	6	8	4	0	16	4	88	0	632
4:45 PM	1	144	12	0	118	162	13	0	11	10	4	0	14	13	88	0	590
5:00 PM	1	160	14	0	127	181	15	0	9	2	2	0	18	7	80	0	616
5:15 PM	5	173	14	0	124	169	8	0	9	9	2	0	24	11	97	0	645
5:30 PM	7	148	5	0	133	160	20	0	16	4	1	0	17	8	86	0	605
5:45 PM	1	160	18	0	100	189	17	0	7	11	4	0	24	11	84	0	626
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	30	1311	92	0	932	1338	108	0	80	62	21	0	144	76	673	0	4867
APPROACH %'s :	2.09%	91.49%	6.42%	0.00%	39.19%	56.27%	4.54%	0.00%	49.08%	38.04%	12.88%	0.00%	16.13%	8.51%	75.36%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	14	641	51	0	484	699	60	0	41	26	9	0	83	37	347	0	2492
PEAK HR FACTOR :	0.500	0.926	0.708	0.000	0.910	0.925	0.750	0.000	0.641	0.591	0.563	0.000	0.865	0.841	0.894	0.000	0.966
		0.919				0.962				0.864				0.884			

Prepared by National Data & Surveying Services

Garfield Ave & Monroe Ave

Peak Hour Turning Movement Count

ID: 17-05668-007
City: South Gate

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

Garfield Ave — SOUTHBOUND

AM	11	732	0	0	955	AM
NOON	0	0	0	0	0	NOON
PM	71	717	0	0	715	PM

EASTBOUND — Monroe Ave

AM	NOON	PM	
29	0	114	⇦
0	0	0	↶ 0
6	0	20	↱ 0
13	0	8	→ 1
23	0	24	↴ 0

WESTBOUND — Monroe Ave

PM	NOON	AM	
2	0	2	0 ↰
2	0	3	1 ←
6	0	5	0 ↙
0	0	0	0 ↶
49	0	55	⇨

CONTROL

2-Way Stop(EB/WB)

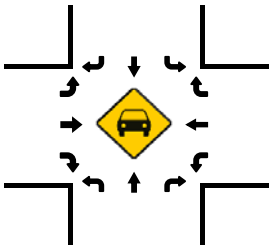
TEV	1802 AM	0 NOON	1625 PM
PHF	0.93		0.96

Garfield Ave — NORTHBOUND

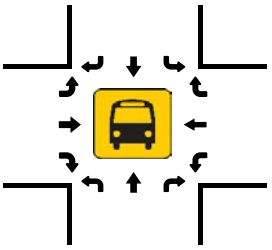
PM	747	0	41	693	41	PM
NOON	0	0	0	0	0	NOON
AM	763	3	15	947	42	AM

0 2 0 0 (EB) — 0 0 2 0 (NB) — 0 1 0 0 (WB)

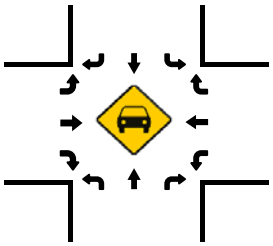
Total Vehicles (AM)



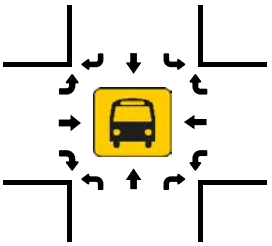
Total Vehicles (AM)



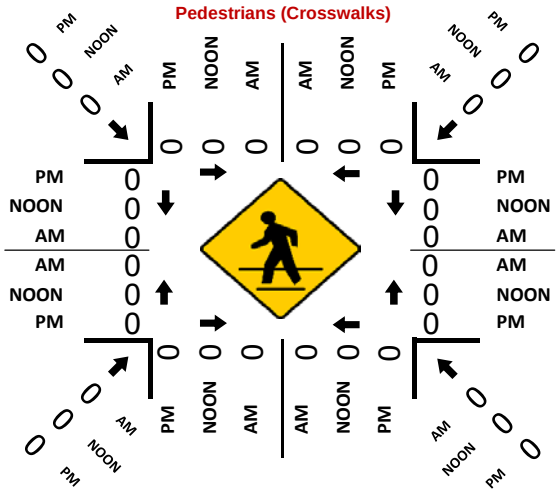
Total Vehicles (NOON)



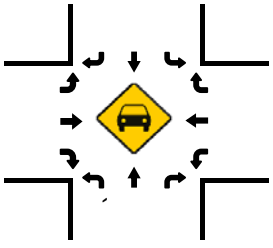
Total Vehicles (NOON)



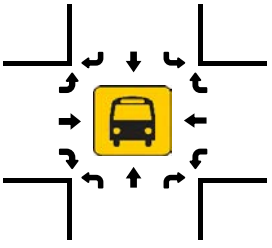
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Garfield Ave & Monroe Ave
City: South Gate
Control: 2-Way Stop(EB/WB)

Project ID: 17-05668-007
Date: 10/11/2017

Total

NS/EW Streets:	Garfield Ave				Garfield Ave				Monroe Ave				Monroe Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	4	215	10	0	0	118	3	0	4	3	4	0	1	1	3	0	366
7:15 AM	3	234	8	0	0	142	5	0	0	2	6	0	0	1	0	0	401
7:30 AM	3	241	12	1	0	207	4	0	2	4	7	0	3	0	0	0	484
7:45 AM	4	218	15	2	0	182	1	0	1	1	6	0	1	2	2	0	435
8:00 AM	5	218	7	0	0	195	3	0	3	4	8	0	1	1	0	0	445
8:15 AM	3	270	8	0	0	148	3	0	0	4	2	0	0	0	0	0	438
8:30 AM	2	209	2	1	0	117	1	0	4	2	1	0	0	0	0	0	339
8:45 AM	1	194	3	0	0	96	4	0	3	2	5	0	1	0	1	0	310
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	25	1799	65	4	0	1205	24	0	17	22	39	0	7	5	6	0	3218
APPROACH %'s :	1.32%	95.03%	3.43%	0.21%	0.00%	98.05%	1.95%	0.00%	21.79%	28.21%	50.00%	0.00%	38.89%	27.78%	33.33%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	15	947	42	3	0	732	11	0	6	13	23	0	5	3	2	0	1802
PEAK HR FACTOR :	0.750	0.877	0.700	0.375	0.000	0.884	0.688	0.000	0.500	0.813	0.719	0.000	0.417	0.375	0.250	0.000	0.931
		0.896				0.880				0.700				0.500			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	4	159	12	0	0	194	8	0	4	5	4	0	1	2	0	0	393
4:15 PM	6	178	3	0	0	135	5	0	1	2	5	0	2	0	1	0	338
4:30 PM	8	212	8	0	0	170	12	0	3	2	5	0	1	1	0	0	422
4:45 PM	8	155	14	0	0	170	6	0	3	5	6	0	2	2	1	0	372
5:00 PM	6	180	3	0	0	196	7	0	5	1	6	0	5	1	1	0	411
5:15 PM	11	177	16	0	0	175	19	0	3	2	7	0	0	0	0	0	410
5:30 PM	13	168	12	0	0	163	14	0	5	1	4	0	0	0	0	0	380
5:45 PM	11	168	10	0	0	183	31	0	7	4	7	0	1	1	1	0	424
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	67	1397	78	0	0	1386	102	0	31	22	44	0	12	7	4	0	3150
APPROACH %'s :	4.35%	90.60%	5.06%	0.00%	0.00%	93.15%	6.85%	0.00%	31.96%	22.68%	45.36%	0.00%	52.17%	30.43%	17.39%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	41	693	41	0	0	717	71	0	20	8	24	0	6	2	2	0	1625
PEAK HR FACTOR :	0.788	0.963	0.641	0.000	0.000	0.915	0.573	0.000	0.714	0.500	0.857	0.000	0.300	0.500	0.500	0.000	0.958
		0.950				0.921				0.722				0.357			

Prepared by National Data & Surveying Services

Monroe Ave & Gardendale St

Peak Hour Turning Movement Count

ID: 17-05668-008
City: South Gate

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

SOUTHBOUND — Monroe Ave

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND — Gardendale St

AM	NOON	PM	
928	0	457	⇦
0	0	0	0
0	0	0	0
509	0	575	1
2	0	0	0
AM	NOON	PM	

WESTBOUND — Gardendale St

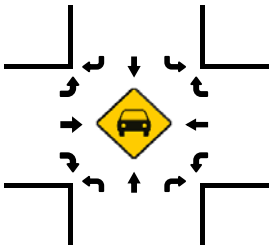
PM	NOON	AM	
0	0	0	0
456	0	923	1
13	0	12	0
0	0	0	0
629	0	568	⇨
PM	NOON	AM	

NORTHBOUND — Monroe Ave

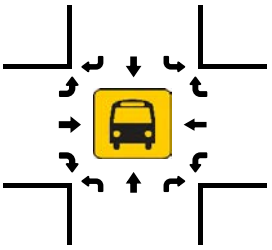
PM	13	0	1	0	54	PM
NOON	0	0	0	0	0	NOON
AM	14	0	5	0	59	AM

CONTROL			
1-Way Stop(NB)			
TEV	1510	0	1099
	AM	NOON	PM
PHF	0.87		0.90

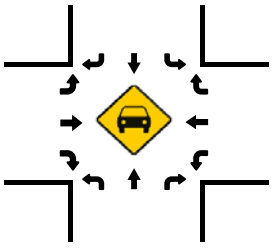
Total Vehicles (AM)



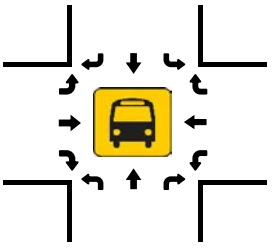
Total Vehicles (AM)



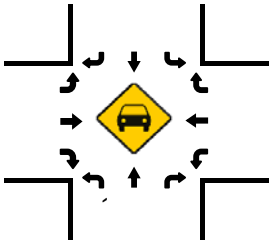
Total Vehicles (NOON)



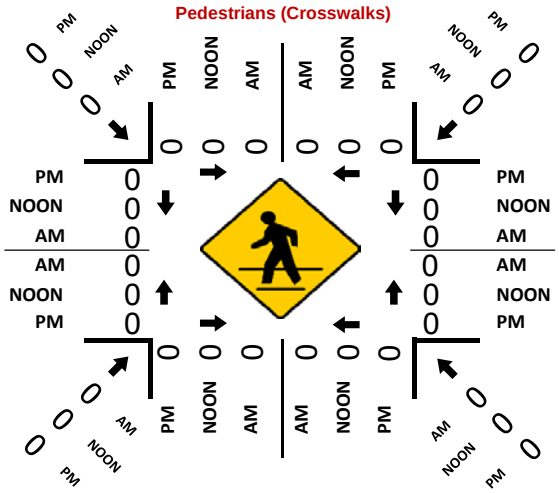
Total Vehicles (NOON)



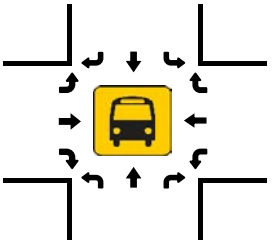
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Monroe Ave & Gardendale St
City: South Gate
Control: 1-Way Stop(NB)

Project ID: 17-05668-008
Date: 10/11/2017

Total

NS/EW Streets:	Monroe Ave				Monroe Ave				Gardendale St				Gardendale St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	12	0	0	0	0	0	0	57	0	0	3	170	0	0	242
7:15 AM	1	0	14	0	0	0	0	0	0	99	0	0	2	206	0	0	322
7:30 AM	1	0	20	0	0	0	0	0	0	146	0	0	4	245	0	0	416
7:45 AM	1	0	14	0	0	0	0	0	0	167	2	0	4	248	0	0	436
8:00 AM	2	0	11	0	0	0	0	0	0	97	0	0	2	224	0	0	336
8:15 AM	0	0	11	0	0	0	0	0	0	92	0	0	0	169	0	0	272
8:30 AM	0	0	4	0	0	0	0	0	0	62	1	0	1	130	0	0	198
8:45 AM	0	0	5	0	0	0	0	0	0	44	0	0	2	124	0	0	175
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	5	0	91	0	0	0	0	0	0	764	3	0	18	1516	0	0	2397
APPROACH %'s :	5.21%	0.00%	94.79%	0.00%					0.00%	99.61%	0.39%	0.00%	1.17%	98.83%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	5	0	59	0	0	0	0	0	0	509	2	0	12	923	0	0	1510
PEAK HR FACTOR :	0.625	0.000	0.738	0.000	0.000	0.000	0.000	0.000	0.000	0.762	0.250	0.000	0.750	0.930	0.000	0.000	0.866
	0.762								0.756				0.928				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	14	0	0	0	0	0	0	141	0	0	7	97	0	0	259
4:15 PM	0	0	7	0	0	0	0	0	0	123	0	0	1	107	0	0	238
4:30 PM	1	0	11	0	0	0	0	0	0	144	0	0	3	109	0	0	268
4:45 PM	0	0	19	0	0	0	0	0	0	136	0	0	5	107	0	0	267
5:00 PM	0	0	4	0	0	0	0	0	0	148	0	0	5	103	0	0	260
5:15 PM	0	0	20	0	0	0	0	0	0	147	0	0	0	137	0	0	304
5:30 PM	0	0	13	0	0	0	0	0	0	140	0	0	1	105	0	1	260
5:45 PM	1	0	14	0	0	0	0	0	0	123	2	0	5	125	0	0	270
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	0	102	0	0	0	0	0	0	1102	2	0	27	890	0	1	2126
APPROACH %'s :	1.92%	0.00%	98.08%	0.00%					0.00%	99.82%	0.18%	0.00%	2.94%	96.95%	0.00%	0.11%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	1	0	54	0	0	0	0	0	0	575	0	0	13	456	0	0	1099
PEAK HR FACTOR :	0.250	0.000	0.675	0.000	0.000	0.000	0.000	0.000	0.000	0.971	0.000	0.000	0.650	0.832	0.000	0.000	0.904
	0.688								0.971				0.856				

Prepared by National Data & Surveying Services

Garfield Ave & Main St

Peak Hour Turning Movement Count

ID: 17-05668-009
City: South Gate

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Garfield Ave — SOUTHBOUND

AM	32	653	62	0	1015	AM
NOON	0	0	0	0	0	NOON
PM	28	628	62	0	812	PM

Main St — EASTBOUND

AM	NOON	PM	
241	0	90	
0	0	0	0
25	0	18	0
77	0	36	1
24	0	12	0
AM	NOON	PM	

CONTROL

Signalized

TEV	2231 AM	0 NOON	1791 PM
PHF	0.90		0.96

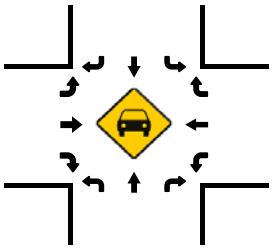
Main St — WESTBOUND

	PM	NOON	AM
0	70	0	55
1	38	0	159
0	66	0	84
0	0	0	0
	183	0	214
	PM	NOON	AM

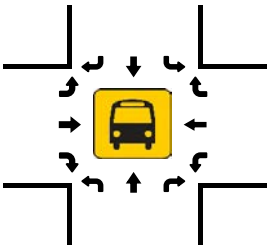
Garfield Ave — NORTHBOUND

PM	706	0	24	724	85	PM
NOON	0	0	0	0	0	NOON
AM	761	0	50	935	75	AM

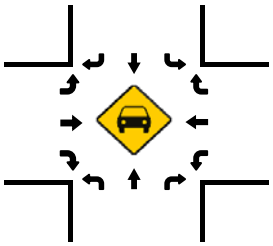
Total Vehicles (AM)



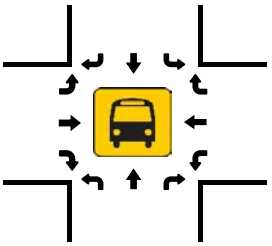
Total Vehicles (AM)



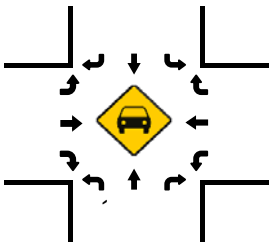
Total Vehicles (NOON)



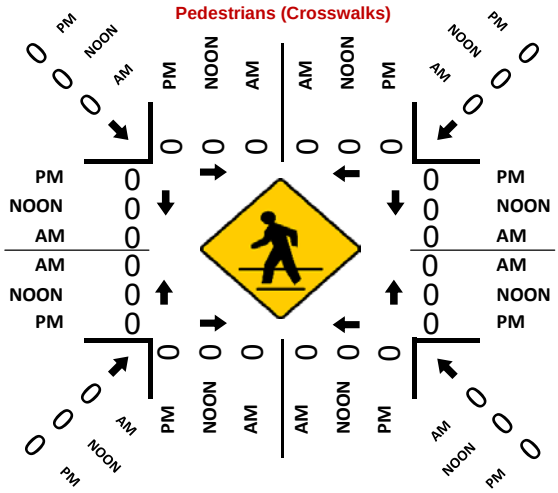
Total Vehicles (NOON)



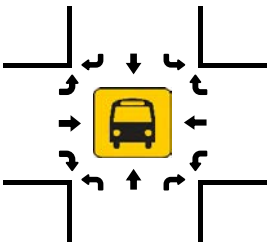
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Garfield Ave & Main St
City: South Gate
Control: Signalized

Project ID: 17-05668-009
Date: 10/11/2017

Total

NS/EW Streets:	Garfield Ave				Garfield Ave				Main St				Main St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	3	204	10	0	9	105	3	0	3	12	13	0	15	8	12	0	397
7:15 AM	3	233	17	0	9	150	0	0	3	10	3	0	26	17	12	0	483
7:30 AM	10	237	10	0	10	179	9	0	5	24	7	0	25	27	12	0	555
7:45 AM	13	223	18	0	12	176	9	0	5	18	3	0	20	44	10	0	551
8:00 AM	19	233	32	0	25	157	10	0	9	19	10	0	20	69	17	0	620
8:15 AM	8	242	15	0	15	141	4	0	6	16	4	0	19	19	16	0	505
8:30 AM	6	201	15	0	13	91	3	0	3	2	1	0	18	6	7	0	366
8:45 AM	4	177	7	0	9	90	5	0	3	5	5	0	12	8	8	0	333
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	66	1750	124	0	102	1089	43	0	37	106	46	0	155	198	94	0	3810
APPROACH %'s :	3.40%	90.21%	6.39%	0.00%	8.27%	88.25%	3.48%	0.00%	19.58%	56.08%	24.34%	0.00%	34.68%	44.30%	21.03%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	50	935	75	0	62	653	32	0	25	77	24	0	84	159	55	0	2231
PEAK HR FACTOR :	0.658	0.966	0.586	0.000	0.620	0.912	0.800	0.000	0.694	0.802	0.600	0.000	0.840	0.576	0.809	0.000	0.900
		0.933				0.943				0.829				0.703			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	7	148	19	0	17	174	3	0	4	6	1	0	13	10	19	0	421
4:15 PM	5	176	17	0	13	126	9	0	6	6	3	0	21	9	13	0	404
4:30 PM	6	197	18	0	14	149	10	0	4	13	3	0	17	8	29	0	468
4:45 PM	5	161	21	0	13	146	7	0	8	8	3	0	18	11	17	0	418
5:00 PM	6	179	15	0	15	182	5	0	4	7	2	0	21	10	11	0	457
5:15 PM	7	187	31	0	20	151	6	0	2	8	4	0	10	9	13	0	448
5:30 PM	9	170	11	0	19	142	9	0	5	11	3	0	11	11	12	0	413
5:45 PM	10	172	26	0	12	159	6	0	7	19	7	0	15	24	16	0	473
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	55	1390	158	0	123	1229	55	0	40	78	26	0	126	92	130	0	3502
APPROACH %'s :	3.43%	86.71%	9.86%	0.00%	8.74%	87.35%	3.91%	0.00%	27.78%	54.17%	18.06%	0.00%	36.21%	26.44%	37.36%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	24	724	85	0	62	628	28	0	18	36	12	0	66	38	70	0	1791
PEAK HR FACTOR :	0.857	0.919	0.685	0.000	0.775	0.863	0.700	0.000	0.563	0.692	0.750	0.000	0.786	0.864	0.603	0.000	0.957
		0.926				0.889				0.825				0.806			

Prepared by National Data & Surveying Services

Garfield Ave & N. Somerset Ranch Rd

Peak Hour Turning Movement Count

ID: 17-05668-010
City: South Gate

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Garfield Ave — SOUTHBOUND

AM	290	832	0	0	1149	AM
NOON	0	0	0	0	0	NOON
PM	243	506	0	0	1035	PM
	1	2	0	0		

N. Somerset Ranch Rd — EASTBOUND

AM	NOON	PM	
1181	0	1127	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
AM	NOON	PM	

CONTROL

Signalized

TEV	3517 AM	0 NOON	2889 PM
PHF	0.96		0.97

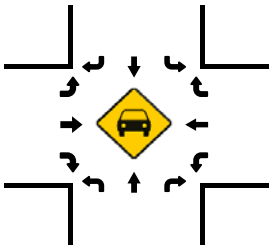
N. Somerset Ranch Rd — WESTBOUND

PM	NOON	AM	
135	0	107	0.5
593	0	734	1.5
221	0	355	1
0	0	0	0
0	0	0	
PM	NOON	AM	

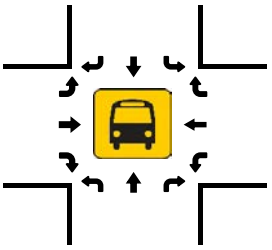
Garfield Ave — NORTHBOUND

PM	727	0	291	900	0	PM
NOON	0	0	0	0	0	NOON
AM	1187	0	157	1042	0	AM
		0	2	2	0	

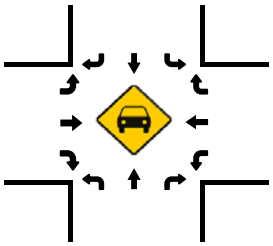
Total Vehicles (AM)



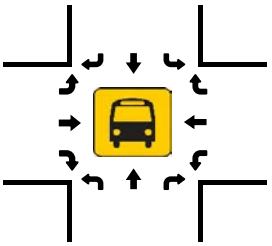
Total Vehicles (AM)



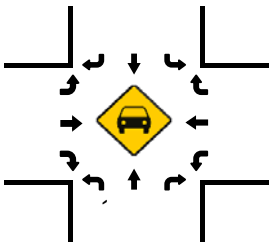
Total Vehicles (NOON)



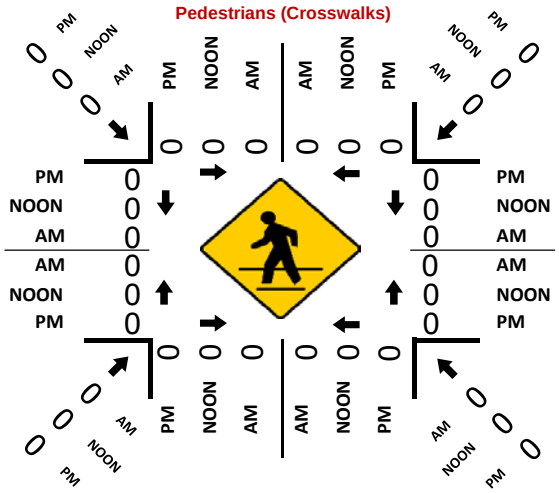
Total Vehicles (NOON)



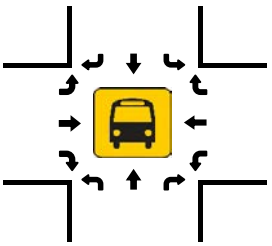
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Garfield Ave & N. Somerset Ranch Rd
City: South Gate
Control: Signalized

Project ID: 17-05668-010
Date: 10/11/2017

Total

NS/EW Streets:	Garfield Ave				Garfield Ave				N. Somerset Ranch Rd				N. Somerset Ranch Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	0	0	0	2	1	0	0	0	0	0	1	1.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	38	224	0	0	0	108	76	0	0	0	0	0	53	208	18	0	725
7:15 AM	41	246	0	0	0	175	75	0	0	0	0	0	72	194	20	0	823
7:30 AM	44	279	0	0	0	211	78	0	0	0	0	0	99	176	25	0	912
7:45 AM	39	254	0	0	0	229	68	0	0	0	0	0	109	156	33	0	888
8:00 AM	33	263	0	0	0	217	69	0	0	0	0	0	75	208	29	0	894
8:15 AM	39	228	0	0	0	185	75	0	0	0	0	0	59	169	29	0	784
8:30 AM	43	226	0	0	0	120	40	0	0	0	0	0	52	143	20	0	644
8:45 AM	32	190	0	0	0	105	42	0	0	0	0	0	52	127	26	0	574
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	309	1910	0	0	0	1350	523	0	0	0	0	0	571	1381	200	0	6244
APPROACH %'s :	13.93%	86.07%	0.00%	0.00%	0.00%	72.08%	27.92%	0.00%					26.53%	64.17%	9.29%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	157	1042	0	0	0	832	290	0	0	0	0	0	355	734	107	0	3517
PEAK HR FACTOR :	0.892	0.934	0.000	0.000	0.000	0.908	0.929	0.000	0.000	0.000	0.000	0.000	0.814	0.882	0.811	0.000	0.964
	0.928				0.944								0.958				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	0	0	0	2	1	0	0	0	0	0	1	1.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	75	213	0	0	0	153	73	0	0	0	0	0	57	134	28	0	733
4:15 PM	75	229	0	0	0	115	60	0	0	0	0	0	53	108	24	0	664
4:30 PM	66	233	0	0	0	115	66	0	0	0	0	0	60	145	30	0	715
4:45 PM	78	207	0	0	0	113	63	0	0	0	0	0	56	143	45	0	705
5:00 PM	83	220	0	0	0	146	61	0	0	0	0	0	58	153	27	0	748
5:15 PM	64	240	0	0	0	132	53	0	0	0	0	0	47	152	33	0	721
5:30 PM	56	204	0	0	0	118	58	0	0	0	0	0	62	129	27	0	654
5:45 PM	51	235	0	0	0	144	60	0	0	0	0	0	54	134	30	0	708
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	548	1781	0	0	0	1036	494	0	0	0	0	0	447	1098	244	0	5648
APPROACH %'s :	23.53%	76.47%	0.00%	0.00%	0.00%	67.71%	32.29%	0.00%					24.99%	61.38%	13.64%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	291	900	0	0	0	506	243	0	0	0	0	0	221	593	135	0	2889
PEAK HR FACTOR :	0.877	0.938	0.000	0.000	0.000	0.866	0.920	0.000	0.000	0.000	0.000	0.000	0.921	0.969	0.750	0.000	0.966
	0.979				0.905								0.972				

Prepared by National Data & Surveying Services

Garfield Ave & S. Somerset Ranch Rd

Peak Hour Turning Movement Count

ID: 17-05668-011
City: South Gate

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Garfield Ave — SOUTHBOUND

AM	0	992	175	0	1201	AM
NOON	0	0	0	0	0	NOON
PM	0	651	81	0	1206	PM
	0	2	2	0		

S. Somerset Ranch Rd — EASTBOUND

AM	NOON	PM	
0	0	0	0
356	0	217	0.5
699	0	777	1.5
567	0	512	1

S. Somerset Ranch Rd — WESTBOUND

PM	NOON	AM	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1325	0	1196	

CONTROL

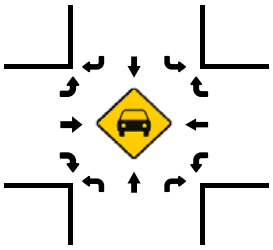
Signalized

TEV	3956	0	3694
	AM	NOON	PM
PHF	0.95		0.97

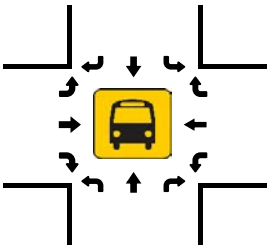
Garfield Ave — NORTHBOUND

PM	1163	0	0	989	467	PM
NOON	0	0	0	0	0	NOON
AM	1559	0	0	845	322	AM
		0	0	2	1	

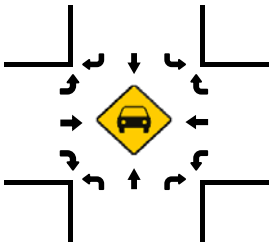
Total Vehicles (AM)



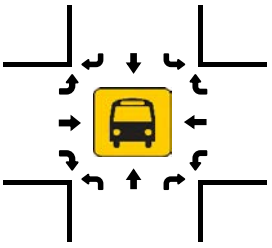
Total Vehicles (AM)



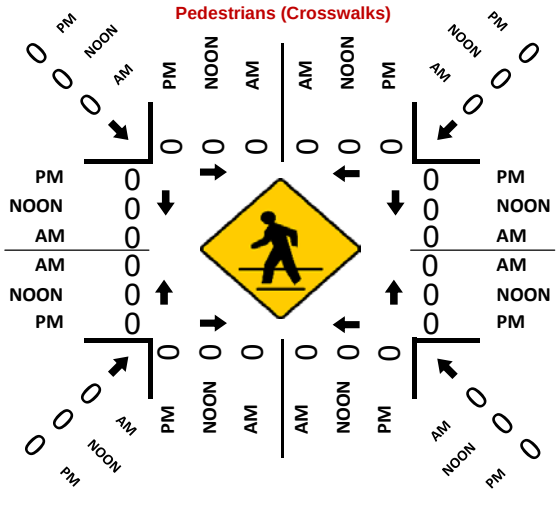
Total Vehicles (NOON)



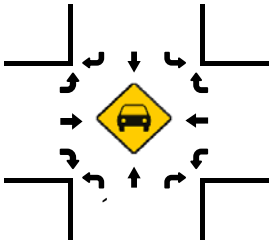
Total Vehicles (NOON)



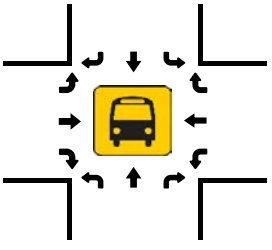
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Garfield Ave & S. Somerset Ranch Rd
City: South Gate
Control: Signalized

Project ID: 17-05668-011
Date: 10/11/2017

Total

NS/EW Streets:	Garfield Ave				Garfield Ave				S. Somerset Ranch Rd				S. Somerset Ranch Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	1	0	2	2	0	0	0.5	1.5	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	168	72	0	32	133	0	0	99	174	170	0	0	0	0	0	848
7:15 AM	0	197	81	0	46	191	0	0	91	183	151	0	0	0	0	0	940
7:30 AM	0	229	86	0	48	270	0	0	88	178	142	0	0	0	0	0	1041
7:45 AM	0	203	103	0	42	286	0	0	98	160	138	0	0	0	0	0	1030
8:00 AM	0	216	52	0	39	245	0	0	79	178	136	0	0	0	0	0	945
8:15 AM	0	173	66	0	38	216	0	0	93	127	122	0	0	0	0	0	835
8:30 AM	0	163	45	0	18	156	0	0	106	116	81	0	0	0	0	0	685
8:45 AM	0	141	52	0	26	134	0	0	93	132	106	0	0	0	0	0	684
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1490	557	0	289	1631	0	0	747	1248	1046	0	0	0	0	0	7008
APPROACH %'s :	0.00%	72.79%	27.21%	0.00%	15.05%	84.95%	0.00%	0.00%	24.56%	41.04%	34.40%	0.00%					
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	845	322	0	175	992	0	0	356	699	567	0	0	0	0	0	3956
PEAK HR FACTOR :	0.000	0.922	0.782	0.000	0.911	0.867	0.000	0.000	0.908	0.955	0.939	0.000	0.000	0.000	0.000	0.000	0.950
		0.926				0.889				0.954							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	1	0	2	2	0	0	0.5	1.5	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	215	62	0	16	195	0	0	68	195	136	0	0	0	0	0	887
4:15 PM	0	248	78	0	24	144	0	0	57	199	141	0	0	0	0	0	891
4:30 PM	0	239	130	0	21	157	0	0	60	210	138	0	0	0	0	0	955
4:45 PM	0	239	109	0	13	152	0	0	54	197	123	0	0	0	0	0	887
5:00 PM	0	254	115	0	22	185	0	0	55	182	115	0	0	0	0	0	928
5:15 PM	0	257	113	0	25	157	0	0	48	188	136	0	0	0	0	0	924
5:30 PM	0	217	91	0	16	168	0	0	48	210	148	0	0	0	0	0	898
5:45 PM	0	216	100	0	26	168	0	0	63	200	127	0	0	0	0	0	900
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1885	798	0	163	1326	0	0	453	1581	1064	0	0	0	0	0	7270
APPROACH %'s :	0.00%	70.26%	29.74%	0.00%	10.95%	89.05%	0.00%	0.00%	14.62%	51.03%	34.34%	0.00%					
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	989	467	0	81	651	0	0	217	777	512	0	0	0	0	0	3694
PEAK HR FACTOR :	0.000	0.962	0.898	0.000	0.810	0.880	0.000	0.000	0.904	0.925	0.928	0.000	0.000	0.000	0.000	0.000	0.967
		0.984				0.884				0.923							

Prepared by National Data & Surveying Services

Old River School Rd & Imperial Hwy

Peak Hour Turning Movement Count

ID: 17-05668-012
City: Downey

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	
AM	07:00 AM - 08:00 AM
NOON	NONE
PM	04:30 PM - 05:30 PM

COUNT PERIODS	
AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Old River School Rd — SOUTHBOUND

AM	458	49	317	0	711	AM
NOON	0	0	0	0	0	NOON
PM	329	34	288	0	506	PM
	1	1	1	0		

Imperial Hwy — EASTBOUND

AM	NOON	PM	
1667	0	1530	⇦
2	0	8	0
267	0	250	1
1486	0	1421	3
167	0	43	1
AM	NOON	PM	

CONTROL

Signalized

TEV	4424	0	3858
	AM	NOON	PM
PHF	0.95		0.97

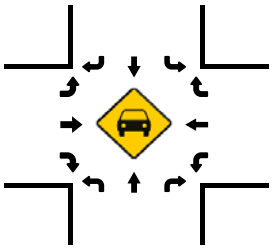
Imperial Hwy — WESTBOUND

PM	NOON	AM	
210	0	353	0
1110	0	1195	3
3	0	9	1
11	0	5	0
1742	0	1821	⇨
PM	NOON	AM	

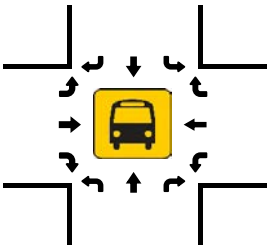
	0	1.5	1	0.5		
PM	80	0	83	46	22	PM
NOON	0	0	0	0	0	NOON
AM	225	0	12	91	13	AM

Old River School Rd — NORTHBOUND

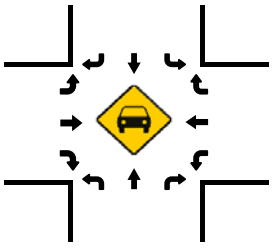
Total Vehicles (AM)



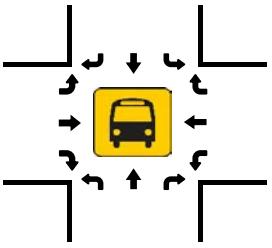
Total Vehicles (AM)



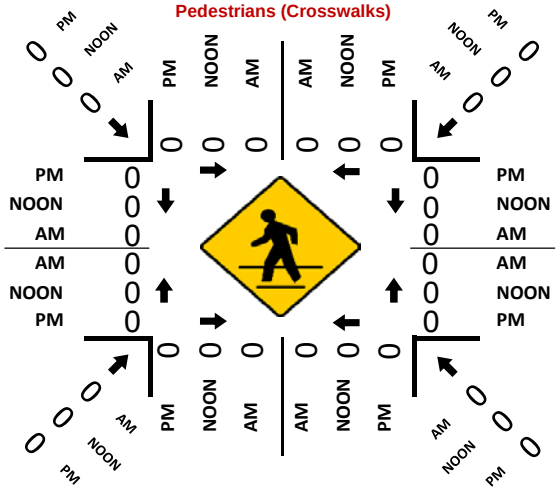
Total Vehicles (NOON)



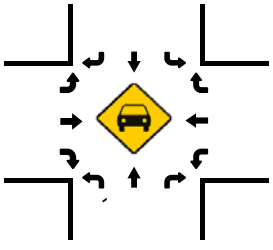
Total Vehicles (NOON)



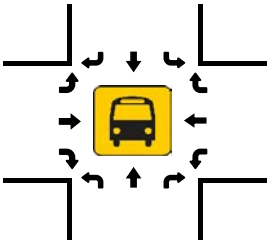
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Old River School Rd & Imperial Hwy
City: Downey
Control: Signalized

Project ID: 17-05668-012
Date: 10/11/2017

Total

NS/EW Streets:	Old River School Rd				Old River School Rd				Imperial Hwy				Imperial Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	1	0.5	0	1	1	1	0	1	3	1	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	3	20	3	0	58	7	89	0	76	331	49	1	2	304	76	1	1020
7:15 AM	3	22	1	0	68	10	117	0	63	369	29	0	2	282	105	2	1073
7:30 AM	3	33	4	0	107	12	138	0	61	373	52	1	3	291	86	1	1165
7:45 AM	3	16	5	0	84	20	114	0	67	413	37	0	2	318	86	1	1166
8:00 AM	2	6	0	0	73	2	99	0	73	334	25	1	6	246	82	5	954
8:15 AM	2	3	5	0	71	12	90	0	40	324	20	2	9	271	82	5	936
8:30 AM	6	4	5	0	43	13	62	0	59	305	22	1	5	228	55	3	811
8:45 AM	12	3	4	0	40	5	57	0	68	329	18	1	2	204	52	8	803
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	34	107	27	0	544	81	766	0	507	2778	252	7	31	2144	624	26	7928
APPROACH %'s :	20.24%	63.69%	16.07%	0.00%	39.11%	5.82%	55.07%	0.00%	14.31%	78.39%	7.11%	0.20%	1.10%	75.89%	22.09%	0.92%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	12	91	13	0	317	49	458	0	267	1486	167	2	9	1195	353	5	4424
PEAK HR FACTOR :	1.000	0.689	0.650	0.000	0.741	0.613	0.830	0.000	0.878	0.900	0.803	0.500	0.750	0.939	0.840	0.625	0.949
	0.725				0.802				0.929				0.959				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	1	0.5	0	1	1	1	0	1	3	1	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	8	8	4	0	65	8	78	0	57	298	9	2	1	246	54	3	841
4:15 PM	6	5	2	0	57	6	75	0	60	378	12	2	1	290	47	4	945
4:30 PM	23	15	11	0	77	14	84	0	66	359	16	2	1	277	50	2	997
4:45 PM	11	9	5	0	75	10	89	0	61	330	11	1	1	273	51	3	930
5:00 PM	40	18	5	0	64	5	71	0	62	365	6	2	0	271	52	3	964
5:15 PM	9	4	1	0	72	5	85	0	61	367	10	3	1	289	57	3	967
5:30 PM	16	15	2	0	49	5	67	0	72	401	5	1	1	269	65	1	969
5:45 PM	7	7	1	0	77	3	73	0	60	339	4	1	0	255	47	2	876
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	120	81	31	0	536	56	622	0	499	2837	73	14	6	2170	423	21	7489
APPROACH %'s :	51.72%	34.91%	13.36%	0.00%	44.15%	4.61%	51.24%	0.00%	14.58%	82.88%	2.13%	0.41%	0.23%	82.82%	16.15%	0.80%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	83	46	22	0	288	34	329	0	250	1421	43	8	3	1110	210	11	3858
PEAK HR FACTOR :	0.519	0.639	0.500	0.000	0.935	0.607	0.924	0.000	0.947	0.968	0.672	0.667	0.750	0.960	0.921	0.917	0.967
	0.599				0.930				0.972				0.953				

Prepared by National Data & Surveying Services

Erickson Ave & W. Imperial Hwy

Peak Hour Turning Movement Count

ID: 17-05668-013
City: Downey

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

SOUTHBOUND — Erickson Ave

AM	26	25	0	0	81	AM
NOON	0	0	0	0	0	NOON
PM	31	41	0	0	17	PM

EASTBOUND — W. Imperial Hwy

AM	NOON	PM	
75	0	122	⇦
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
AM	NOON	PM	

WESTBOUND — W. Imperial Hwy

PM	NOON	AM	
6	0	41	0.5
8	0	18	0.5
71	0	229	1
0	0	0	0
0	0	0	⇨
PM	NOON	AM	

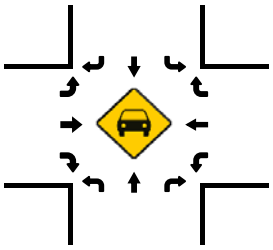
NORTHBOUND — Erickson Ave

PM	115	3	83	11	0	PM
NOON	0	0	0	0	0	NOON
AM	254	0	31	40	0	AM

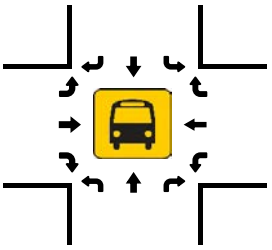
	0	2	0	0
	0	1.5	1.5	0

CONTROL			
3-Way Stop(NB/SB/WB)			
TEV	410	0	254
	AM	NOON	PM
PHF	0.83		0.82

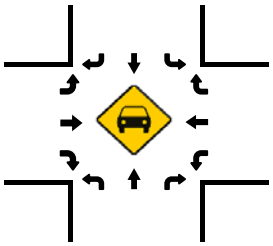
Total Vehicles (AM)



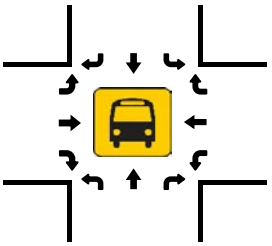
Total Vehicles (AM)



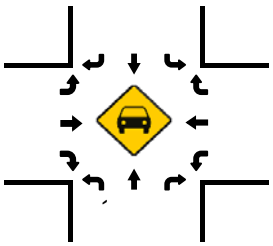
Total Vehicles (NOON)



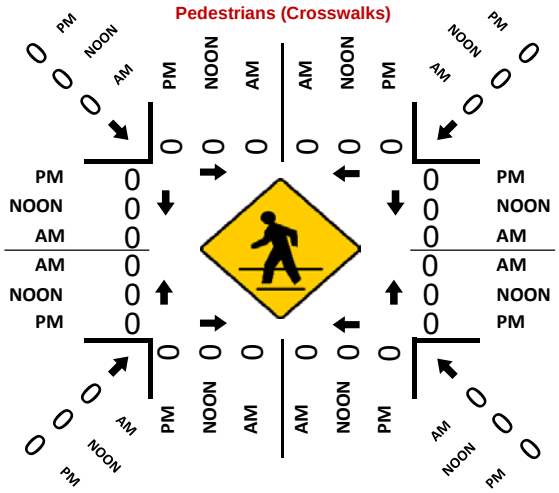
Total Vehicles (NOON)



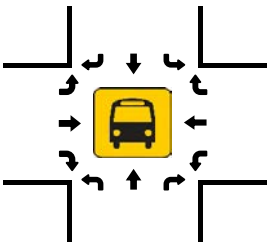
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Erickson Ave & W. Imperial Hwy
City: Downey
Control: 3-Way Stop(NB/SB/WB)

Project ID: 17-05668-013
Date: 10/11/2017

Total

NS/EW Streets:	Erickson Ave				Erickson Ave				W. Imperial Hwy				W. Imperial Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	1.5	0	0	0	2	0	0	0	0	0	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	9	13	0	0	0	1	5	0	0	0	0	0	47	4	10	0	89
7:15 AM	3	8	0	0	0	4	5	0	0	0	0	0	38	4	7	0	69
7:30 AM	2	10	0	0	0	11	10	0	0	0	0	0	52	5	7	0	97
7:45 AM	11	15	0	0	0	10	7	0	0	0	0	0	64	4	12	0	123
8:00 AM	8	11	0	0	0	3	7	0	0	0	0	0	52	3	13	0	97
8:15 AM	10	4	0	0	0	1	2	0	0	0	0	0	61	6	9	0	93
8:30 AM	10	9	0	0	0	1	3	0	0	0	0	0	38	2	8	0	71
8:45 AM	14	11	0	0	0	3	4	0	0	0	0	0	38	1	6	0	77
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	67	81	0	0	0	34	43	0	0	0	0	0	390	29	72	0	716
APPROACH %'s :	45.27%	54.73%	0.00%	0.00%	0.00%	44.16%	55.84%	0.00%					79.43%	5.91%	14.66%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	31	40	0	0	0	25	26	0	0	0	0	0	229	18	41	0	410
PEAK HR FACTOR :	0.705	0.667	0.000	0.000	0.000	0.568	0.650	0.000	0.000	0.000	0.000	0.000	0.895	0.750	0.788	0.000	0.833
	0.683				0.607								0.900				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	1.5	0	0	0	2	0	0	0	0	0	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	18	6	0	1	0	9	6	0	0	0	0	0	20	3	4	0	67
4:15 PM	17	1	0	0	0	8	6	0	0	0	0	0	14	2	0	0	48
4:30 PM	22	4	0	0	0	16	12	0	0	0	0	0	19	2	2	0	77
4:45 PM	26	0	0	2	0	8	7	0	0	0	0	0	18	1	0	0	62
5:00 PM	14	5	0	1	0	14	7	0	0	0	0	0	16	3	1	0	61
5:15 PM	12	5	0	0	0	5	4	0	0	0	0	0	10	2	1	0	39
5:30 PM	10	3	0	0	0	6	2	0	0	0	0	0	12	2	1	0	36
5:45 PM	16	3	0	0	0	6	4	0	0	0	0	0	14	1	2	0	46
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	135	27	0	4	0	72	48	0	0	0	0	0	123	16	11	0	436
APPROACH %'s :	81.33%	16.27%	0.00%	2.41%	0.00%	60.00%	40.00%	0.00%					82.00%	10.67%	7.33%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	83	11	0	3	0	41	31	0	0	0	0	0	71	8	6	0	254
PEAK HR FACTOR :	0.798	0.458	0.000	0.375	0.000	0.641	0.646	0.000	0.000	0.000	0.000	0.000	0.888	0.667	0.375	0.000	0.825
	0.866				0.643								0.787				

Prepared by National Data & Surveying Services

Erickson Ave & E. Imperial Hwy

Peak Hour Turning Movement Count

ID: 17-05668-014
City: Downey

Day: Wednesday
Date: 10/11/2017

PEAK HOURS

AM	07:30 AM - 08:30 AM
NOON	NONE
PM	04:15 PM - 05:15 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Erickson Ave

SOUTHBOUND

AM	0	206	47	0	71	AM
NOON	0	0	0	0	0	NOON
PM	0	56	59	0	93	PM

E. Imperial Hwy — EASTBOUND

AM	NOON	PM	
0	0	0	⇦
0	0	0	↶ 0
29	0	6	↱ 1
3	0	4	→ 1
114	0	45	↷ 0
AM	NOON	PM	

WESTBOUND — E. Imperial Hwy

PM	NOON	AM	
0	0	0	↶ 0
0	0	0	← 0
0	0	0	↰ 0
0	0	0	↶ 0
179	0	89	⇨
PM	NOON	AM	

CONTROL

3-Way Stop(NB/SB/EB)

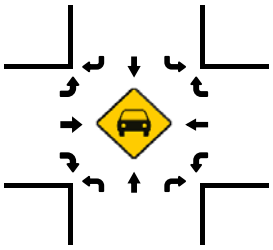
TEV	480 AM	0 NOON	373 PM
PHF	0.86		0.85

NORTHBOUND — Erickson Ave

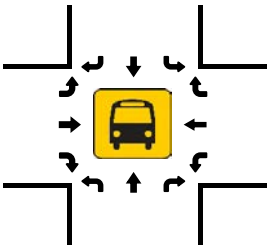
PM	101	0	0	87	116	PM
NOON	0	0	0	0	0	NOON
AM	320	0	0	42	39	AM

0 2 1 0 — 0 0 2 0

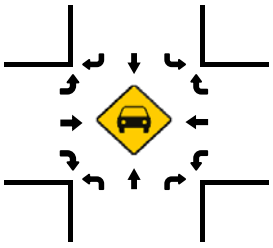
Total Vehicles (AM)



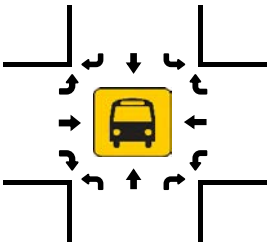
Total Vehicles (AM)



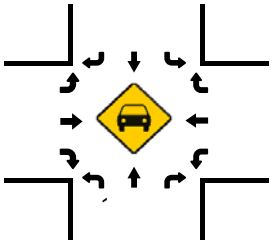
Total Vehicles (NOON)



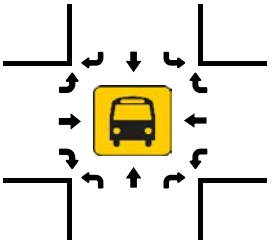
Total Vehicles (NOON)



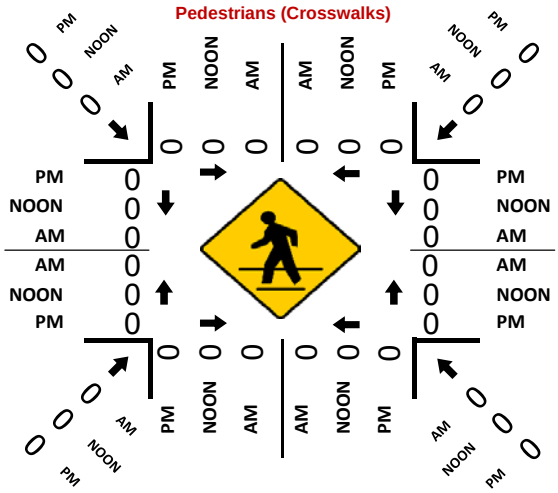
Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Erickson Ave & E. Imperial Hwy
City: Downey
Control: 3-Way Stop(NB/SB/EB)

Project ID: 17-05668-014
Date: 10/11/2017

Total

NS/EW Streets:	Erickson Ave				Erickson Ave				E. Imperial Hwy				E. Imperial Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	1	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	11	4	0	3	45	0	0	11	1	10	0	0	0	0	0	85
7:15 AM	0	4	4	0	6	35	0	0	7	0	15	0	0	0	0	0	71
7:30 AM	0	6	8	0	17	47	0	0	6	1	20	0	0	0	0	0	105
7:45 AM	0	15	16	0	14	60	0	0	11	0	23	0	0	0	0	0	139
8:00 AM	0	11	7	0	8	47	0	0	8	0	26	0	0	0	0	0	107
8:15 AM	0	10	8	0	8	52	0	0	4	2	45	0	0	0	0	0	129
8:30 AM	0	14	9	0	3	38	0	0	6	0	28	0	0	0	0	0	98
8:45 AM	0	16	12	0	8	34	0	0	9	2	35	0	0	0	0	0	116
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	87	68	0	67	358	0	0	62	6	202	0	0	0	0	0	850
APPROACH %'s :	0.00%	56.13%	43.87%	0.00%	15.76%	84.24%	0.00%	0.00%	22.96%	2.22%	74.81%	0.00%					
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	42	39	0	47	206	0	0	29	3	114	0	0	0	0	0	480
PEAK HR FACTOR :	0.000	0.700	0.609	0.000	0.691	0.858	0.000	0.000	0.659	0.375	0.633	0.000	0.000	0.000	0.000	0.000	0.863
		0.653				0.855				0.716							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	1	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	20	17	0	15	15	0	0	5	2	10	0	0	0	0	0	84
4:15 PM	0	17	27	0	10	13	0	0	1	0	23	0	0	0	0	0	91
4:30 PM	0	25	36	0	19	15	0	0	2	2	11	0	0	0	0	0	110
4:45 PM	0	27	20	0	15	13	0	0	0	0	4	0	0	0	0	0	79
5:00 PM	0	18	33	0	15	15	0	0	3	2	7	0	0	0	0	0	93
5:15 PM	0	15	16	0	13	5	0	0	3	0	8	0	0	0	0	0	60
5:30 PM	0	12	20	0	7	10	0	0	1	0	4	0	0	0	0	0	54
5:45 PM	0	18	9	0	9	12	0	0	0	2	2	0	0	0	0	0	52
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	152	178	0	103	98	0	0	15	8	69	0	0	0	0	0	623
APPROACH %'s :	0.00%	46.06%	53.94%	0.00%	51.24%	48.76%	0.00%	0.00%	16.30%	8.70%	75.00%	0.00%					
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	87	116	0	59	56	0	0	6	4	45	0	0	0	0	0	373
PEAK HR FACTOR :	0.000	0.806	0.806	0.000	0.776	0.933	0.000	0.000	0.500	0.500	0.489	0.000	0.000	0.000	0.000	0.000	0.848
		0.832				0.846				0.573							

Prepared by National Data & Surveying Services

Industrial Ave & Gardendale St

Peak Hour Turning Movement Count

ID: 17-05668-015
City: South Gate

Day: Wednesday
Date: 10/11/2017

PEAK HOURS

AM: 07:15 AM - 08:15 AM
NOON: NONE
PM: 04:30 PM - 05:30 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

Industrial Ave — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

Gardendale St — EASTBOUND

AM	NOON	PM		
930	0	486	⇦	
0	0	0	↶	0
0	0	0	↱	0
565	0	608	→	1
18	0	29	↴	0
AM	NOON	PM		

WESTBOUND — Gardendale St

PM	NOON	AM		
0	0	0	↰	0
461	0	895	←	1
10	0	6	↰	1
0	0	0	↶	0
617	0	570	⇨	
PM	NOON	AM		

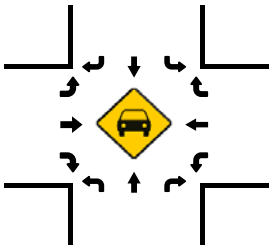
CONTROL: 1-Way Stop(NB)

TEV	1524	0	1142
	AM	NOON	PM
PHF	0.87		0.87

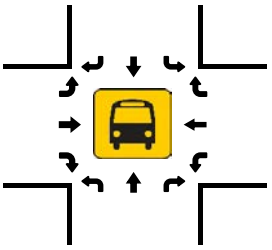
NORTHBOUND — Industrial Ave

PM	39	0	25	0	9	PM
NOON	0	0	0	0	0	NOON
AM	24	0	35	0	5	AM

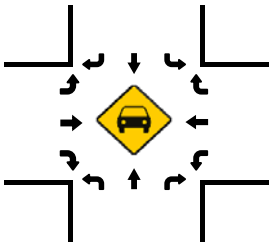
Total Vehicles (AM)



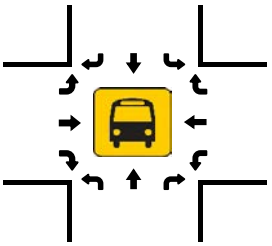
Total Vehicles (AM)



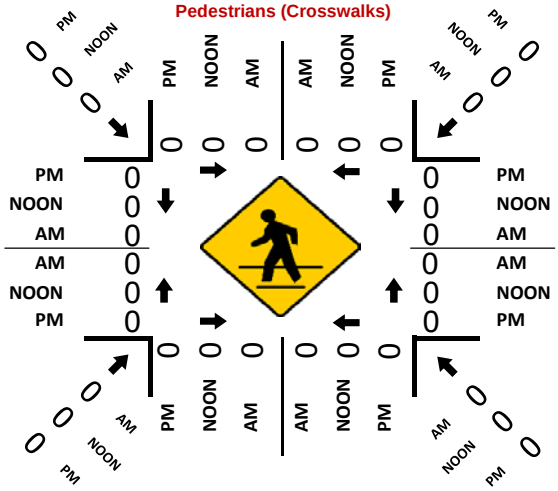
Total Vehicles (NOON)



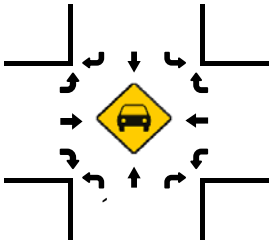
Total Vehicles (NOON)



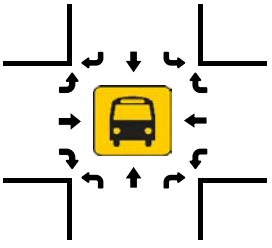
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Industrial Ave & Gardendale St
City: South Gate
Control: 1-Way Stop(NB)

Project ID: 17-05668-015
Date: 10/11/2017

Total

NS/EW Streets:	Industrial Ave				Industrial Ave				Gardendale St				Gardendale St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	9	0	1	0	0	0	0	0	0	69	1	0	0	168	0	0	248
7:15 AM	7	0	1	0	0	0	0	0	0	117	3	0	2	198	0	0	328
7:30 AM	12	0	1	0	0	0	0	0	0	158	2	0	2	239	0	0	414
7:45 AM	9	0	2	0	0	0	0	0	0	180	7	0	1	239	0	0	438
8:00 AM	7	0	1	0	0	0	0	0	0	110	6	0	1	219	0	0	344
8:15 AM	6	0	3	0	0	0	0	0	0	101	5	0	1	163	0	0	279
8:30 AM	7	0	2	0	0	0	0	0	0	70	1	0	1	123	0	0	204
8:45 AM	7	0	0	0	0	0	0	0	0	48	2	0	1	117	0	0	175
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	64	0	11	0	0	0	0	0	0	853	27	0	9	1466	0	0	2430
APPROACH %'s :	85.33%	0.00%	14.67%	0.00%					0.00%	96.93%	3.07%	0.00%	0.61%	99.39%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	35	0	5	0	0	0	0	0	0	565	18	0	6	895	0	0	1524
PEAK HR FACTOR :	0.729	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.785	0.643	0.000	0.750	0.936	0.000	0.000	0.870
	0.769				0.000				0.779				0.935				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	9	0	3	0	0	0	0	0	0	152	2	0	0	98	0	0	264
4:15 PM	4	0	2	0	0	0	0	0	0	135	5	0	2	111	0	0	259
4:30 PM	7	0	3	0	0	0	0	0	0	149	9	0	6	106	0	0	280
4:45 PM	5	0	2	0	0	0	0	0	0	145	11	0	2	112	0	0	277
5:00 PM	3	0	2	0	0	0	0	0	0	142	2	0	1	108	0	0	258
5:15 PM	10	0	2	0	0	0	0	0	0	172	7	0	1	135	0	0	327
5:30 PM	5	0	1	0	0	0	0	0	0	148	7	0	3	104	0	0	268
5:45 PM	5	0	2	0	0	0	0	0	0	133	10	0	4	133	0	0	287
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	48	0	17	0	0	0	0	0	0	1176	53	0	19	907	0	0	2220
APPROACH %'s :	73.85%	0.00%	26.15%	0.00%					0.00%	95.69%	4.31%	0.00%	2.05%	97.95%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	25	0	9	0	0	0	0	0	0	608	29	0	10	461	0	0	1142
PEAK HR FACTOR :	0.625	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.884	0.659	0.000	0.417	0.854	0.000	0.000	0.873
	0.708				0.000				0.890				0.866				

Prepared by National Data & Surveying Services

Erickson Ave & Gardendale St

Peak Hour Turning Movement Count

ID: 17-05668-016
City: South Gate

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

Erickson Ave — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

Gardendale St — EASTBOUND

AM	NOON	PM	
900	0	490	⇦
0	0	0	↶ 0
0	0	0	↱ 0
572	0	599	→ 1
0	0	0	↴ 0
AM	NOON	PM	

CONTROL

No Control

TEV	1473	0	1090
	AM	NOON	PM
PHF	0.86		0.89

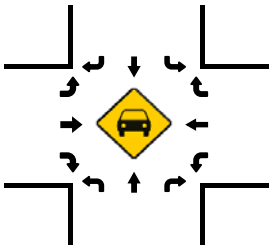
WESTBOUND — Gardendale St

PM	NOON	AM	
0	0	0	0 ↰
490	0	900	1 ←
0	0	0	0 ↰
1	0	0	0 ↰
600	0	573	⇨
PM	NOON	AM	

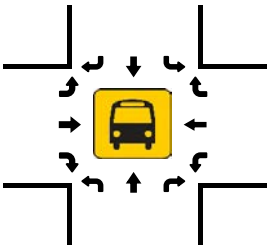
Erickson Ave — NORTHBOUND

PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	1	AM

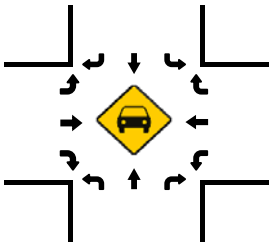
Total Vehicles (AM)



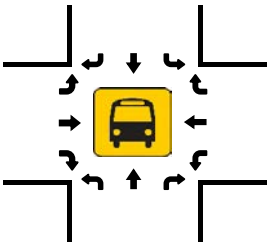
Total Vehicles (AM)



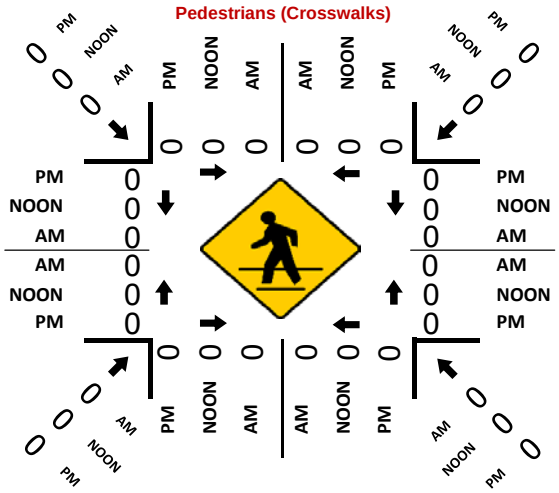
Total Vehicles (NOON)



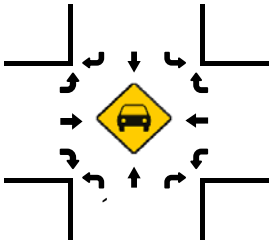
Total Vehicles (NOON)



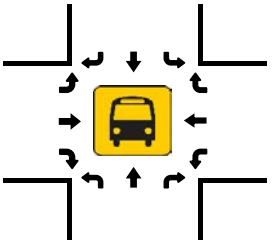
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Erickson Ave & Gardendale St
City: South Gate
Control: No Control

Project ID: 17-05668-016
Date: 10/11/2017

Total

NS/EW Streets:	Erickson Ave				Erickson Ave				Gardendale St				Gardendale St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	71	0	0	0	169	0	0	240
7:15 AM	0	0	0	0	0	0	0	0	0	118	0	0	0	204	0	0	322
7:30 AM	0	0	0	0	0	0	0	0	0	156	0	0	0	236	0	0	392
7:45 AM	0	0	0	0	0	0	0	0	0	187	0	0	0	242	0	0	429
8:00 AM	0	0	1	0	0	0	0	0	0	111	0	0	0	218	0	0	330
8:15 AM	0	0	0	0	0	0	0	0	0	107	0	0	0	166	0	1	274
8:30 AM	0	0	0	0	0	0	0	0	0	71	0	1	0	129	0	0	201
8:45 AM	0	0	0	0	0	0	0	0	0	48	0	1	0	113	0	0	162
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	1	0	0	0	0	0	0	869	0	2	0	1477	0	1	2350
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%					0.00%	99.77%	0.00%	0.23%	0.00%	99.93%	0.00%	0.07%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	1	0	0	0	0	0	0	572	0	0	0	900	0	0	1473
PEAK HR FACTOR :	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.765	0.000	0.000	0.000	0.930	0.000	0.000	0.858
			0.250							0.765				0.930			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	153	1	0	0	99	0	0	253
4:15 PM	0	0	0	0	0	0	0	0	0	137	0	0	1	116	0	0	254
4:30 PM	0	0	0	0	0	0	0	0	0	153	0	1	0	108	0	0	262
4:45 PM	0	0	0	0	0	0	0	0	0	146	0	0	0	115	0	0	261
5:00 PM	0	0	0	0	0	0	0	0	0	142	0	0	0	115	0	0	257
5:15 PM	0	0	0	0	0	0	0	0	0	173	0	0	0	133	0	0	306
5:30 PM	0	0	0	0	0	0	0	0	0	148	0	0	0	109	0	0	257
5:45 PM	0	0	0	0	0	0	0	0	0	136	0	0	0	133	0	1	270
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	1188	1	1	1	928	0	1	2120
APPROACH %'s :									0.00%	99.83%	0.08%	0.08%	0.11%	99.78%	0.00%	0.11%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	599	0	0	0	490	0	1	1090
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.866	0.000	0.000	0.000	0.921	0.000	0.250	0.891
										0.866				0.916			

Prepared by National Data & Surveying Services

Arizona Ave & Gardendale St

Peak Hour Turning Movement Count

ID: 17-05668-017
City: South Gate

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

SOUTHBOUND — Arizona Ave

	L	T	R	U	
AM	0	0	0	0	0
NOON	0	0	0	0	0
PM	0	0	0	0	0

EASTBOUND — Gardendale St

	L	T	R	U
AM	0	900	0	494
NOON	0	0	0	0
PM	0	0	0	0

WESTBOUND — Gardendale St

	L	T	R	U
AM	0	629	0	597
NOON	1	490	0	881
PM	0	0	0	0

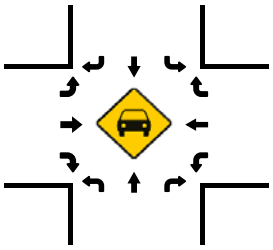
NORTHBOUND — Arizona Ave

	L	T	R	U	
AM	0	31	0	19	0	27	AM
NOON	0	0	0	0	0	0	NOON
PM	0	22	0	4	0	32	PM

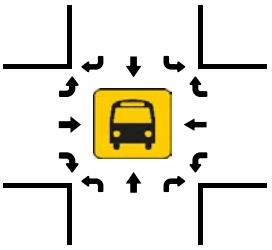
CONTROL			
1-Way Stop(NB)			
TEV	1528	0	1145
	AM	NOON	PM
PHF	0.86		0.88

	L	T	R	U
EASTBOUND	0	1	1	0
WESTBOUND	0	1	1	0
NORTHBOUND	0	0	1	0

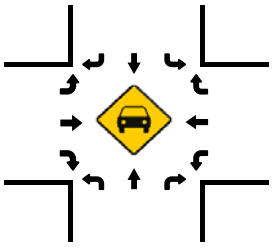
Total Vehicles (AM)



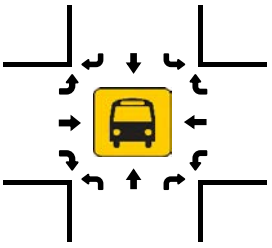
Total Vehicles (AM)



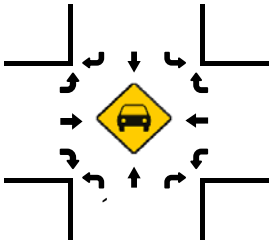
Total Vehicles (NOON)



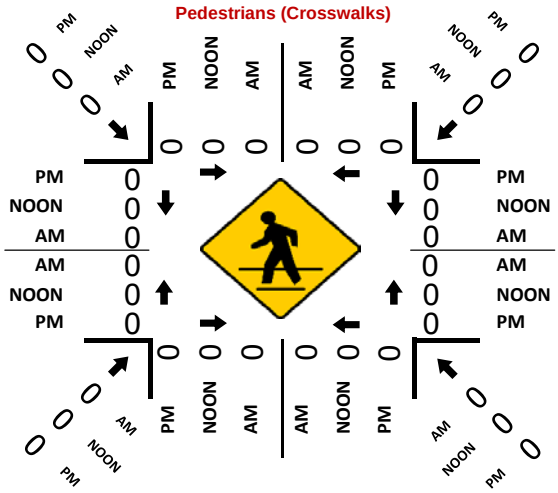
Total Vehicles (NOON)



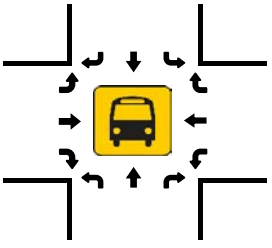
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Arizona Ave & Gardendale St
City: South Gate
Control: 1-Way Stop(NB)

Project ID: 17-05668-017
Date: 10/11/2017

Total

NS/EW Streets:	Arizona Ave				Arizona Ave				Gardendale St				Gardendale St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	3	0	3	0	0	0	0	0	0	76	2	0	3	164	0	0	251
7:15 AM	10	0	2	0	0	0	0	0	0	118	1	0	1	199	0	0	331
7:30 AM	3	0	14	0	0	0	0	0	0	151	3	0	5	232	0	0	408
7:45 AM	3	0	6	0	0	0	0	0	0	189	2	0	11	232	0	1	444
8:00 AM	3	0	5	0	0	0	0	0	0	110	2	0	6	218	0	1	345
8:15 AM	2	0	5	0	0	0	0	0	0	107	0	0	2	160	0	0	276
8:30 AM	2	0	4	0	0	0	0	0	0	68	0	0	2	130	0	0	206
8:45 AM	1	0	3	0	0	0	0	0	0	51	0	0	3	108	0	0	166
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	27	0	42	0	0	0	0	0	0	870	10	0	33	1443	0	2	2427
APPROACH %'s :	39.13%	0.00%	60.87%	0.00%					0.00%	98.86%	1.14%	0.00%	2.23%	97.63%	0.00%	0.14%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	19	0	27	0	0	0	0	0	0	568	8	0	23	881	0	2	1528
PEAK HR FACTOR :	0.475	0.000	0.482	0.000	0.000	0.000	0.000	0.000	0.000	0.751	0.667	0.000	0.523	0.949	0.000	0.500	0.860
	0.676								0.754				0.928				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	5	0	4	0	0	0	0	0	0	150	4	0	5	95	0	0	263
4:15 PM	1	0	6	0	0	0	0	0	0	137	0	0	4	117	0	0	265
4:30 PM	3	0	6	0	0	0	0	0	0	150	3	0	3	108	0	0	273
4:45 PM	1	0	4	0	0	0	0	0	0	145	0	0	3	111	0	1	265
5:00 PM	1	0	7	0	0	0	0	0	0	137	2	0	6	116	0	0	269
5:15 PM	0	0	9	0	0	0	0	0	0	178	1	0	2	135	0	0	325
5:30 PM	0	0	8	0	0	0	0	0	0	148	2	0	6	112	0	0	276
5:45 PM	3	0	8	0	0	0	0	0	0	133	1	0	2	127	0	1	275
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	14	0	52	0	0	0	0	0	0	1178	13	0	31	921	0	2	2211
APPROACH %'s :	21.21%	0.00%	78.79%	0.00%					0.00%	98.91%	1.09%	0.00%	3.25%	96.54%	0.00%	0.21%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	4	0	32	0	0	0	0	0	0	596	6	0	16	490	0	1	1145
PEAK HR FACTOR :	0.333	0.000	0.889	0.000	0.000	0.000	0.000	0.000	0.000	0.837	0.750	0.000	0.667	0.907	0.000	0.250	0.881
	0.818								0.841				0.925				

Prepared by National Data & Surveying Services

Industrial Ave/Arizona Ave & Main St

Peak Hour Turning Movement Count

ID: 17-05668-018
City: South Gate

Day: Wednesday
Date: 10/11/2017

PEAK HOURS

AM: 07:15 AM - 08:15 AM
NOON: NONE
PM: 04:30 PM - 05:30 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

Industrial Ave/Arizona Ave — SOUTHBOUND

AM	13	14	4	0	33	AM
NOON	0	0	0	0	0	NOON
PM	13	8	9	0	26	PM

EASTBOUND (Main St)

AM	NOON	PM	
287	0	175	⇦
1	0	0	↶ 0
16	0	10	↱ 0
177	0	165	→ 1
23	0	21	↴ 0

WESTBOUND (Main St)

PM	NOON	AM	
7	0	4	↰ 0
140	0	243	← 1
10	0	8	↰ 0
1	0	1	↶ 0
201	0	211	⇨

CONTROL

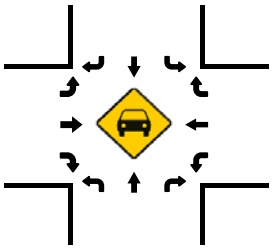
2-Way Stop(NB/SB)

TEV	576 AM	0 NOON	441 PM
PHF	0.78		0.98

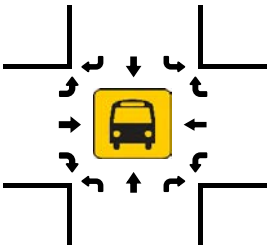
Industrial Ave/Arizona Ave — NORTHBOUND

PM	39	0	22	9	26	PM
NOON	0	0	0	0	0	NOON
AM	45	0	30	13	29	AM

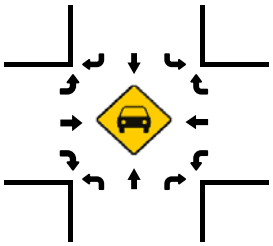
Total Vehicles (AM)



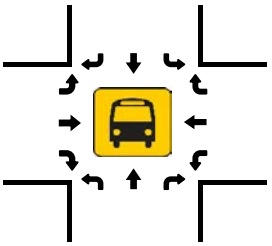
Total Vehicles (AM)



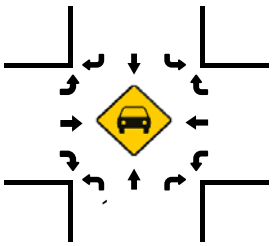
Total Vehicles (NOON)



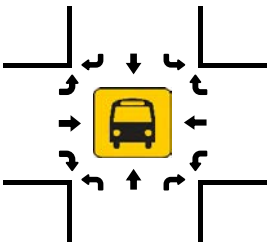
Total Vehicles (NOON)



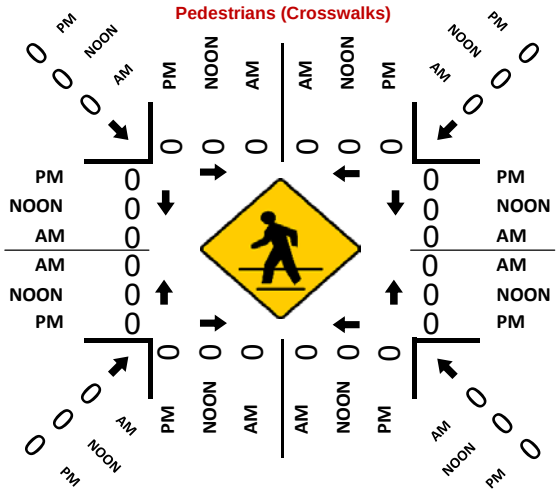
Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Industrial Ave/Arizona Ave & Main St
City: South Gate
Control: 2-Way Stop(NB/SB)

Project ID: 17-05668-018
Date: 10/11/2017

Total

NS/EW Streets:	Industrial Ave/Arizona Ave					Industrial Ave/Arizona Ave				Main St					Main St									
AM	NORTHBOUND					SOUTHBOUND				EASTBOUND					WESTBOUND					SOUTHBOUND2				
	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NT2	SL	ST	SR	SU	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	S2L	S2L2	S2T2	S2R2	TOTAL
7:00 AM	2	2	4	0	1	2	0	3	0	2	36	2	0	3	2	27	5	0	0		3	0	3	97
7:15 AM	1	3	5	0	0	0	1	2	0	2	46	6	0	1	2	37	2	1	0		0	1	8	118
7:30 AM	7	5	6	0	3	3	4	3	0	2	54	1	0	4	0	58	1	0	1		2	2	3	159
7:45 AM	11	1	8	0	0	0	5	2	0	4	39	2	0	5	3	68	0	0	0		2	5	18	173
8:00 AM	11	4	10	0	4	1	4	6	0	8	38	14	1	7	3	80	1	0	1		1	2	17	213
8:15 AM	6	3	7	1	1	2	2	2	0	5	32	7	0	7	1	27	2	0	1		1	0	4	111
8:30 AM	3	2	3	0	0	2	0	3	0	3	25	4	0	4	0	20	2	0	1		1	1	2	76
8:45 AM	5	2	2	0	0	1	0	1	0	0	18	5	0	2	1	22	2	0	0		0	0	4	65
	NL	NT	NR	NU	NT2	SL	ST	SR	SU	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	S2L	S2L2	S2T2	S2R2	TOTAL
TOTAL VOLUMES :	46	22	45	1	9	11	16	22	0	26	288	41	1	33	12	339	15	1	4	0	10	11	59	1012
APPROACH %'s :	37.40%	17.89%	36.59%	0.81%	7.32%	22.45%	32.65%	44.90%	0.00%	6.68%	74.04%	10.54%	0.26%	8.48%	3.23%	91.37%	4.04%	0.27%	1.08%	0.00%	12.50%	13.75%	73.75%	
PEAK HR :	07:15 AM - 08:15 AM																							TOTAL
PEAK HR VOL :	30	13	29	0	7	4	14	13	0	16	177	23	1	17	8	243	4	1	2	0	5	10	46	663
PEAK HR FACTOR :	0.682	0.650	0.725	0.000	0.438	0.333	0.700	0.542	0.000	0.500	0.819	0.411	0.250	0.607	0.667	0.759	0.500	0.250	0.500	0.000	0.625	0.500	0.639	0.778
			0.681				0.705					0.860					0.759				0.610			

PM	NORTHBOUND					SOUTHBOUND				EASTBOUND					WESTBOUND					SOUTHBOUND2				
	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NT2	SL	ST	SR	SU	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	S2L	S2L2	S2T2	S2R2	TOTAL
4:00 PM	4	0	5	0	1	0	0	1	0	4	51	7	0	7	2	34	1	0	1		1	2	3	124
4:15 PM	6	0	6	0	3	2	0	3	0	5	29	6	0	7	2	33	3	0	1		1	1	1	109
4:30 PM	8	2	5	0	2	1	2	5	0	3	31	4	0	5	1	41	5	0	0		2	2	3	122
4:45 PM	5	4	7	0	2	5	1	5	0	1	44	1	0	6	1	40	0	0	0		0	1	1	124
5:00 PM	4	1	7	0	1	0	1	3	0	1	44	6	0	7	4	39	2	1	1		0	0	0	122
5:15 PM	5	2	7	0	3	3	4	0	0	5	46	10	0	6	4	20	0	0	0		1	0	3	119
5:30 PM	5	1	1	0	4	2	3	4	0	0	38	5	0	4	2	32	0	0	0		2	1	2	106
5:45 PM	7	0	7	0	3	1	2	2	0	3	47	6	0	5	2	44	1	0	1		0	2	4	137
	NL	NT	NR	NU	NT2	SL	ST	SR	SU	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	S2L	S2L2	S2T2	S2R2	TOTAL
TOTAL VOLUMES :	44	10	45	0	19	14	13	23	0	22	330	45	0	47	18	283	12	1	4	0	7	9	17	963
APPROACH %'s :	37.29%	8.47%	38.14%	0.00%	16.10%	28.00%	26.00%	46.00%	0.00%	4.95%	74.32%	10.14%	0.00%	10.59%	5.66%	88.99%	3.77%	0.31%	1.26%	0.00%	21.21%	27.27%	51.52%	
PEAK HR :	04:30 PM - 05:30 PM																							TOTAL
PEAK HR VOL :	22	9	26	0	8	9	8	13	0	10	165	21	0	24	10	140	7	1	1	0	3	3	7	487
PEAK HR FACTOR :	0.688	0.563	0.929	0.000	0.667	0.450	0.500	0.650	0.000	0.500	0.897	0.525	0.000	0.857	0.625	0.854	0.350	0.250	0.250	0.000	0.375	0.375	0.583	0.982
			0.903				0.682					0.821					0.846				0.464			

Prepared by National Data & Surveying Services

Paramount Blvd & Imperial Hwy

Peak Hour Turning Movement Count

ID: 17-05668-019
City: South Gate

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Paramount Blvd — SOUTHBOUND

AM	238	898	168	7	1181	AM
NOON	0	0	0	0	0	NOON
PM	189	769	206	5	1188	PM
	1	2	1	0		

Imperial Hwy — EASTBOUND

AM	NOON	PM	
1703	0	1399	
9	0	22	0
275	0	284	2
1216	0	1301	3
88	0	130	0
AM	NOON	PM	

CONTROL

Signalized

TEV	5475	0	5222
	AM	NOON	PM
PHF	0.96		0.98

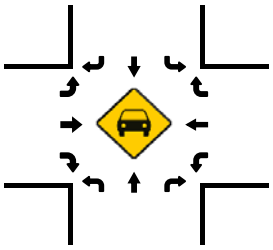
Imperial Hwy — WESTBOUND

PM	NOON	AM	
138	0	100	0
958	0	1179	3
126	0	109	1
20	0	29	0
1607	0	1495	
PM	NOON	AM	

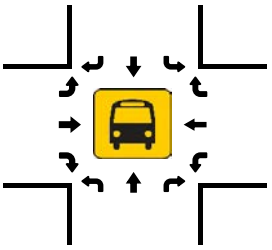
Paramount Blvd — NORTHBOUND

PM	1028	3	230	761	80	PM
NOON	0	0	0	0	0	NOON
AM	1096	1	277	799	82	AM
		0	2	2	1	

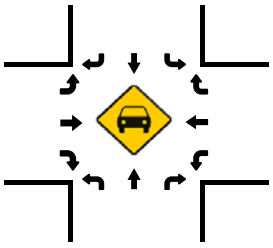
Total Vehicles (AM)



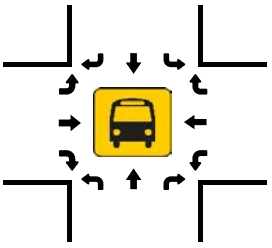
Total Vehicles (AM)



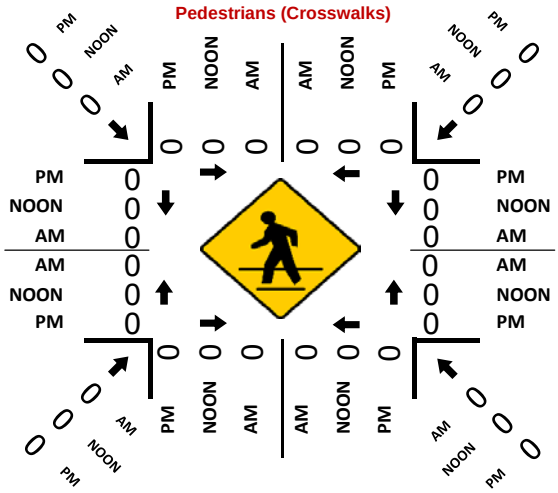
Total Vehicles (NOON)



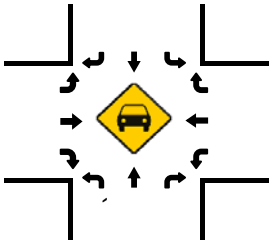
Total Vehicles (NOON)



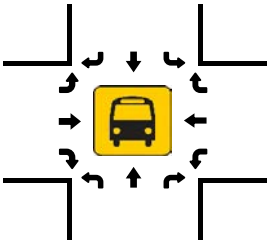
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Paramount Blvd & Imperial Hwy
City: South Gate
Control: Signalized

Project ID: 17-05668-019
Date: 10/11/2017

Total

NS/EW Streets:	Paramount Blvd				Paramount Blvd				Imperial Hwy				Imperial Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	1	2	1	0	2	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	53	203	13	0	24	197	57	0	72	216	27	3	30	268	17	5	1185
7:15 AM	80	230	22	0	50	218	78	2	94	267	25	1	20	279	25	5	1396
7:30 AM	58	221	13	0	42	240	58	2	82	316	25	3	28	313	16	7	1424
7:45 AM	67	169	20	1	41	244	44	1	46	340	16	3	28	310	22	8	1360
8:00 AM	72	179	27	0	35	196	58	2	53	293	22	2	33	277	37	9	1295
8:15 AM	68	184	26	0	46	174	51	1	43	303	26	4	27	291	28	6	1278
8:30 AM	53	168	19	0	30	161	53	3	48	227	16	8	34	228	30	7	1085
8:45 AM	50	162	21	0	31	128	50	0	54	215	26	5	27	207	23	0	999
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	501	1516	161	1	299	1558	449	11	492	2177	183	29	227	2173	198	47	10022
APPROACH %'s :	22.99%	69.57%	7.39%	0.05%	12.90%	67.24%	19.38%	0.47%	17.08%	75.56%	6.35%	1.01%	8.58%	82.16%	7.49%	1.78%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	277	799	82	1	168	898	238	7	275	1216	88	9	109	1179	100	29	5475
PEAK HR FACTOR :	0.866	0.868	0.759	0.250	0.840	0.920	0.763	0.875	0.731	0.894	0.880	0.750	0.826	0.942	0.676	0.806	0.961
	0.873				0.942				0.932				0.963				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	1	2	1	0	2	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	58	198	17	0	44	169	53	3	64	324	28	5	27	218	42	4	1254
4:15 PM	47	197	24	0	40	156	55	3	74	277	32	2	33	217	22	4	1183
4:30 PM	68	192	22	0	43	190	39	3	62	345	35	2	23	214	34	5	1277
4:45 PM	45	189	15	1	62	186	52	2	88	321	27	6	39	231	28	4	1296
5:00 PM	54	193	17	0	46	188	45	0	69	330	44	8	24	269	42	6	1335
5:15 PM	63	187	26	2	55	205	53	0	65	305	24	6	40	244	34	5	1314
5:30 PM	64	217	17	0	39	159	48	2	70	320	22	2	24	239	29	4	1256
5:45 PM	64	206	23	0	41	186	52	1	70	321	31	5	33	222	31	4	1290
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	463	1579	161	3	370	1439	397	14	562	2543	243	36	243	1854	262	36	10205
APPROACH %'s :	20.99%	71.58%	7.30%	0.14%	16.67%	64.82%	17.88%	0.63%	16.61%	75.15%	7.18%	1.06%	10.15%	77.41%	10.94%	1.50%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	230	761	80	3	206	769	189	5	284	1301	130	22	126	958	138	20	5222
PEAK HR FACTOR :	0.846	0.986	0.769	0.375	0.831	0.938	0.892	0.417	0.807	0.943	0.739	0.688	0.788	0.890	0.821	0.833	0.978
	0.952				0.934				0.963				0.911				

Prepared by National Data & Surveying Services

Paramount Blvd & Gardendale St

Peak Hour Turning Movement Count

ID: 17-05668-020
City: South Gate

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

Paramount Blvd — SOUTHBOUND

AM	91	900	114	1	1186	AM
NOON	0	0	0	0	0	NOON
PM	85	946	118	12	1272	PM
	1	2	1	0		

EASTBOUND — Gardendale St

AM	NOON	PM	
890	0	538	
0	0	0	0
80	0	87	1
434	0	459	2
71	0	83	0
AM	NOON	PM	

CONTROL

Signalized

TEV	3836	0	3637
	AM	NOON	PM
PHF	0.96		0.95

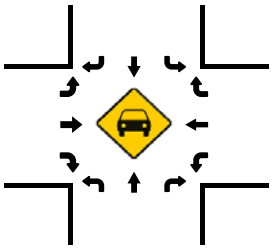
WESTBOUND — Gardendale St

PM	NOON	AM	
127	0	163	1
374	0	638	2
106	0	150	1
0	0	0	0
690	0	639	
PM	NOON	AM	

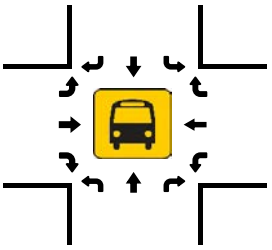
	0	1	2	1		
PM	1137	2	79	1046	113	PM
NOON	0	0	0	0	0	NOON
AM	1121	0	161	942	91	AM

Paramount Blvd — NORTHBOUND

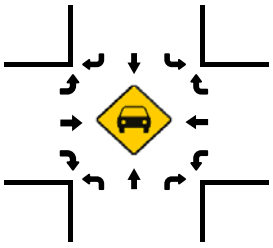
Total Vehicles (AM)



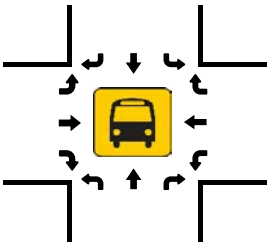
Total Vehicles (AM)



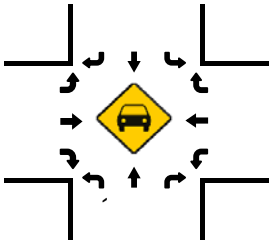
Total Vehicles (NOON)



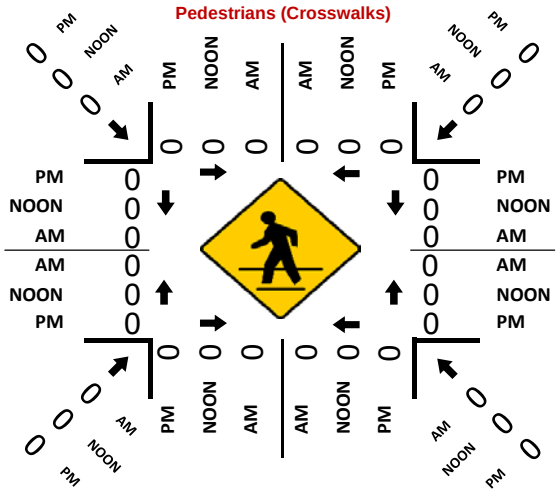
Total Vehicles (NOON)



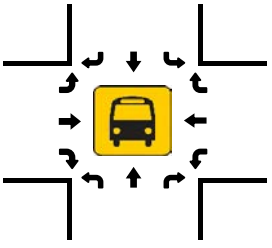
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Paramount Blvd & Gardendale St
City: South Gate
Control: Signalized

Project ID: 17-05668-020
Date: 10/11/2017

Total

NS/EW Streets:	Paramount Blvd				Paramount Blvd				Gardendale St				Gardendale St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	2	0	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	23	215	19	0	14	235	14	2	19	52	9	0	33	125	33	0	793
7:15 AM	36	236	24	0	23	234	23	0	19	100	13	0	43	144	42	0	937
7:30 AM	43	221	24	0	32	218	26	0	21	125	20	0	37	172	41	0	980
7:45 AM	33	224	20	0	24	254	23	0	20	128	16	0	34	180	39	0	995
8:00 AM	49	261	23	0	35	194	19	1	20	81	22	0	36	142	41	0	924
8:15 AM	27	223	14	0	24	213	11	1	23	81	13	0	20	113	36	0	799
8:30 AM	29	235	20	0	21	171	14	1	17	55	8	0	29	89	34	0	723
8:45 AM	32	209	10	0	28	152	7	2	14	42	4	0	28	80	30	0	638
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	272	1824	154	0	201	1671	137	7	153	664	105	0	260	1045	296	0	6789
APPROACH %'s :	12.09%	81.07%	6.84%	0.00%	9.97%	82.89%	6.80%	0.35%	16.59%	72.02%	11.39%	0.00%	16.24%	65.27%	18.49%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	161	942	91	0	114	900	91	1	80	434	71	0	150	638	163	0	3836
PEAK HR FACTOR :	0.821	0.902	0.948	0.000	0.814	0.886	0.875	0.250	0.952	0.848	0.807	0.000	0.872	0.886	0.970	0.000	0.964
		0.896				0.919				0.881				0.940			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	2	0	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	17	259	26	0	28	236	24	1	24	104	18	0	22	71	34	0	864
4:15 PM	19	256	31	0	23	190	16	6	27	89	21	0	20	77	26	0	801
4:30 PM	25	222	22	0	34	217	27	0	18	129	14	0	20	78	34	0	840
4:45 PM	23	244	34	0	38	224	20	1	20	103	19	0	30	87	26	0	869
5:00 PM	14	272	34	0	31	292	29	2	18	113	20	0	23	80	28	0	956
5:15 PM	22	261	31	1	31	233	17	2	29	144	21	0	23	101	27	0	943
5:30 PM	19	234	22	1	20	190	18	2	15	116	21	0	31	89	34	0	812
5:45 PM	24	279	26	0	36	231	21	6	25	86	21	0	29	104	38	0	926
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	163	2027	226	2	241	1813	172	20	176	884	155	0	198	687	247	0	7011
APPROACH %'s :	6.74%	83.83%	9.35%	0.08%	10.73%	80.72%	7.66%	0.89%	14.49%	72.76%	12.76%	0.00%	17.49%	60.69%	21.82%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	79	1046	113	2	118	946	85	12	87	459	83	0	106	374	127	0	3637
PEAK HR FACTOR :	0.823	0.937	0.831	0.500	0.819	0.810	0.733	0.500	0.750	0.797	0.988	0.000	0.855	0.899	0.836	0.000	0.951
		0.942				0.820				0.811				0.887			

Prepared by National Data & Surveying Services

Paramount Blvd & N. Somerset Ranch Rd

Peak Hour Turning Movement Count

ID: 17-05668-021
City: South Gate

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

Paramount Blvd — SOUTHBOUND

AM	526	801	0	0	1355	AM
NOON	0	0	0	0	0	NOON
PM	367	781	0	0	1364	PM

N. Somerset Ranch Rd — EASTBOUND

AM	NOON	PM	
1243	0	905	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
AM	NOON	PM	

N. Somerset Ranch Rd — WESTBOUND

PM	NOON	AM	
317	0	354	1
363	0	504	1
214	0	216	1
0	0	0	0
0	0	0	
PM	NOON	AM	

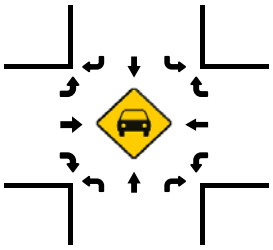
CONTROL: Signalized

TEV	3615 AM	0 NOON	3264 PM
PHF	0.93		0.95

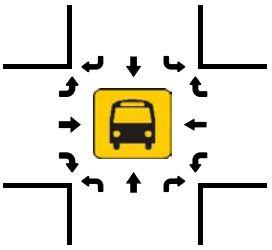
Paramount Blvd — NORTHBOUND

PM	995	0	175	1047	0	PM
NOON	0	0	0	0	0	NOON
AM	1017	0	213	1001	0	AM

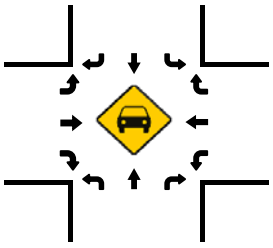
Total Vehicles (AM)



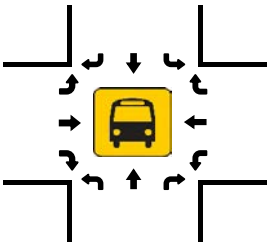
Total Vehicles (AM)



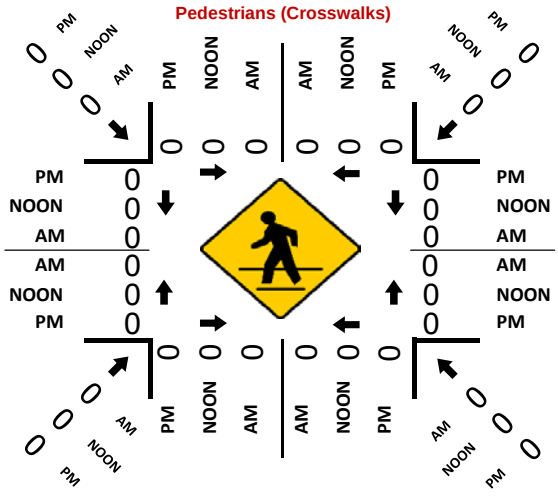
Total Vehicles (NOON)



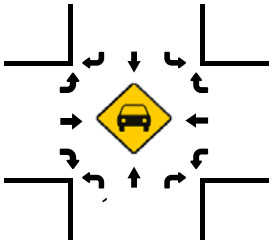
Total Vehicles (NOON)



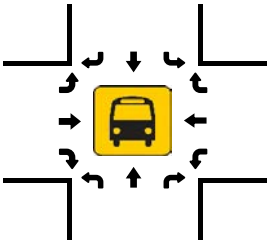
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Paramount Blvd & N. Somerset Ranch Rd
City: South Gate
Control: Signalized

Project ID: 17-05668-021
Date: 10/11/2017

Total

NS/EW Streets:	Paramount Blvd				Paramount Blvd				N. Somerset Ranch Rd				N. Somerset Ranch Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	0	0	0	2	1	0	0	0	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	46	208	0	0	0	173	132	0	0	0	0	0	29	100	51	0	739
7:15 AM	52	231	0	0	0	194	139	0	0	0	0	0	39	97	73	0	825
7:30 AM	56	248	0	0	0	250	119	0	0	0	0	0	65	158	73	0	969
7:45 AM	47	251	0	0	0	218	145	0	0	0	0	0	65	139	103	0	968
8:00 AM	58	271	0	0	0	139	123	0	0	0	0	0	47	110	105	0	853
8:15 AM	33	199	0	0	0	144	98	0	0	0	0	0	55	91	67	0	687
8:30 AM	38	215	0	0	0	143	99	0	0	0	0	0	52	85	83	0	715
8:45 AM	43	190	0	0	0	133	58	0	0	0	0	0	65	95	72	0	656
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	373	1813	0	0	0	1394	913	0	0	0	0	0	417	875	627	0	6412
APPROACH %'s :	17.06%	82.94%	0.00%	0.00%	0.00%	60.42%	39.58%	0.00%					21.73%	45.60%	32.67%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	213	1001	0	0	0	801	526	0	0	0	0	0	216	504	354	0	3615
PEAK HR FACTOR :	0.918	0.923	0.000	0.000	0.000	0.801	0.907	0.000	0.000	0.000	0.000	0.000	0.831	0.797	0.843	0.000	0.933
	0.922				0.899								0.875				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	0	0	0	2	1	0	0	0	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	37	227	0	0	0	191	85	0	0	0	0	0	58	89	94	0	781
4:15 PM	27	245	0	0	0	148	73	0	0	0	0	0	35	105	81	0	714
4:30 PM	49	232	0	0	0	191	100	0	0	0	0	0	43	93	101	0	809
4:45 PM	56	229	0	0	0	164	83	0	0	0	0	0	62	113	80	0	787
5:00 PM	49	265	0	0	0	217	101	0	0	0	0	0	50	107	68	0	857
5:15 PM	33	259	0	0	0	198	89	0	0	0	0	0	52	85	75	0	791
5:30 PM	48	248	0	0	0	189	86	0	0	0	0	0	61	84	74	0	790
5:45 PM	45	275	0	0	0	177	91	0	0	0	0	0	51	87	100	0	826
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	344	1980	0	0	0	1475	708	0	0	0	0	0	412	763	673	0	6355
APPROACH %'s :	14.80%	85.20%	0.00%	0.00%	0.00%	67.57%	32.43%	0.00%					22.29%	41.29%	36.42%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	175	1047	0	0	0	781	367	0	0	0	0	0	214	363	317	0	3264
PEAK HR FACTOR :	0.893	0.952	0.000	0.000	0.000	0.900	0.908	0.000	0.000	0.000	0.000	0.000	0.877	0.848	0.793	0.000	0.952
	0.955				0.903								0.939				

Prepared by National Data & Surveying Services

Paramount Blvd & S. Somerset Ranch Rd

Peak Hour Turning Movement Count

ID: 17-05668-022
City: South Gate

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

Paramount Blvd — SOUTHBOUND

AM	0	708	292	0	1198	AM
NOON	0	0	0	0	0	NOON
PM	0	795	195	0	1211	PM

S. Somerset Ranch Rd — EASTBOUND

AM	NOON	PM		
0	0	0		
0	0	0	0	
394	0	407	1	
644	0	724	1.5	
121	0	169	0.5	
AM	NOON	PM		

S. Somerset Ranch Rd — WESTBOUND

PM	NOON	AM	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1108	0	1280	
PM	NOON	AM	

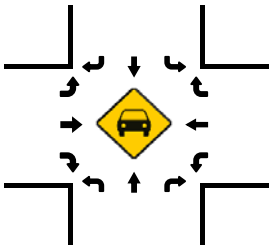
Paramount Blvd — NORTHBOUND

PM	964	0	0	804	189	PM
NOON	0	0	0	0	0	NOON
AM	829	0	0	804	344	AM

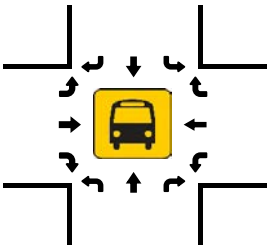
0	2	2	0	
0	0	2	1	

CONTROL			
Signalized			
TEV	3307	0	3283
	AM	NOON	PM
PHF	0.92		0.97

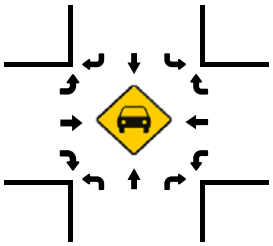
Total Vehicles (AM)



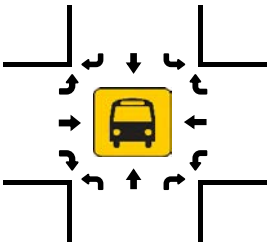
Total Vehicles (AM)



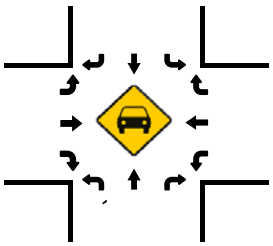
Total Vehicles (NOON)



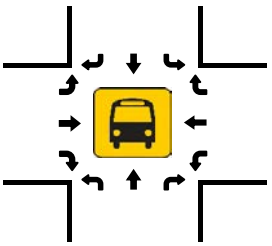
Total Vehicles (NOON)



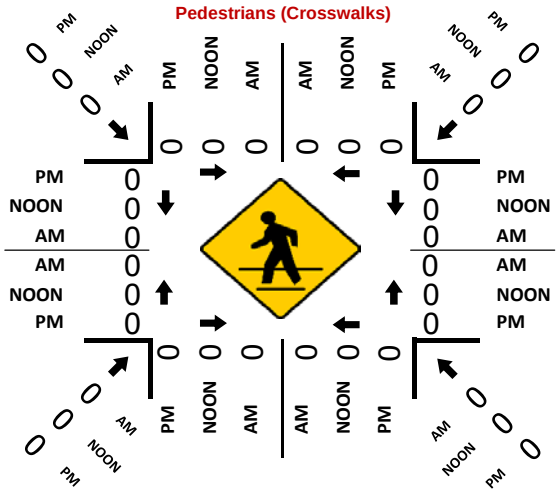
Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Paramount Blvd & S. Somerset Ranch Rd
City: South Gate
Control: Signalized

Project ID: 17-05668-022
Date: 10/11/2017

Total

NS/EW Streets:	Paramount Blvd				Paramount Blvd				S. Somerset Ranch Rd				S. Somerset Ranch Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	1	0	2	2	0	0	1	1.5	0.5	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	159	65	0	62	138	0	0	101	149	22	0	0	0	0	0	696
7:15 AM	0	172	75	0	84	144	0	0	101	156	27	0	0	0	0	0	759
7:30 AM	0	204	82	0	91	214	0	0	96	171	41	0	0	0	0	0	899
7:45 AM	0	205	98	0	71	205	0	0	100	181	23	0	0	0	0	0	883
8:00 AM	0	223	89	0	46	145	0	0	97	136	30	0	0	0	0	0	766
8:15 AM	0	151	41	0	50	151	0	0	88	125	32	0	0	0	0	0	638
8:30 AM	0	165	46	0	42	149	0	0	80	76	22	0	0	0	0	0	580
8:45 AM	0	152	33	0	48	149	0	0	87	86	26	0	0	0	0	0	581
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1431	529	0	494	1295	0	0	750	1080	223	0	0	0	0	0	5802
APPROACH %'s :	0.00%	73.01%	26.99%	0.00%	27.61%	72.39%	0.00%	0.00%	36.53%	52.61%	10.86%	0.00%					
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	804	344	0	292	708	0	0	394	644	121	0	0	0	0	0	3307
PEAK HR FACTOR :	0.000	0.901	0.878	0.000	0.802	0.827	0.000	0.000	0.975	0.890	0.738	0.000	0.000	0.000	0.000	0.000	0.920
		0.920				0.820				0.941							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	1	0	2	2	0	0	1	1.5	0.5	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	166	32	0	43	195	0	0	89	138	48	0	0	0	0	0	711
4:15 PM	0	188	40	0	47	145	0	0	83	155	46	0	0	0	0	0	704
4:30 PM	0	190	37	0	54	176	0	0	96	196	57	0	0	0	0	0	806
4:45 PM	0	192	40	0	46	185	0	0	93	165	51	0	0	0	0	0	772
5:00 PM	0	209	44	0	63	200	0	0	104	188	38	0	0	0	0	0	846
5:15 PM	0	185	47	0	56	196	0	0	99	186	44	0	0	0	0	0	813
5:30 PM	0	193	44	0	38	209	0	0	105	164	46	0	0	0	0	0	799
5:45 PM	0	217	54	0	38	190	0	0	99	186	41	0	0	0	0	0	825
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1540	338	0	385	1496	0	0	768	1378	371	0	0	0	0	0	6276
APPROACH %'s :	0.00%	82.00%	18.00%	0.00%	20.47%	79.53%	0.00%	0.00%	30.51%	54.75%	14.74%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	804	189	0	195	795	0	0	407	724	169	0	0	0	0	0	3283
PEAK HR FACTOR :	0.000	0.926	0.875	0.000	0.774	0.951	0.000	0.000	0.969	0.963	0.918	0.000	0.000	0.000	0.000	0.000	0.970
		0.916				0.941				0.985							

Prepared by National Data & Surveying Services

Downey Ave & Gardendale St

Peak Hour Turning Movement Count

ID: 17-05668-023
City: South Gate

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	
AM	07:15 AM - 08:15 AM
NOON	NONE
PM	05:00 PM - 06:00 PM

COUNT PERIODS	
AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

SOUTHBOUND (Downey Ave)

	Left	Thru	Right	U-Turn	Total
AM	94	328	143	0	550
NOON	0	0	0	0	0
PM	67	349	100	0	704

EASTBOUND (Gardendale St)

	Left	Thru	Right	U-Turn
AM	876	0	89	0
NOON	0	0	0	0
PM	659	62	516	73

WESTBOUND (Gardendale St)

	Left	Thru	Right	U-Turn
AM	106	462	703	0
NOON	0	0	0	0
PM	88	644	689	48

NORTHBOUND (Downey Ave)

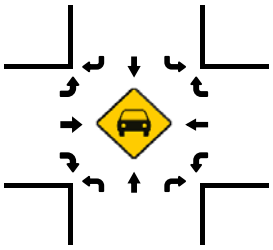
	Left	Thru	Right	U-Turn	Total
AM	465	0	138	400	30
NOON	0	0	0	0	0
PM	460	0	130	523	47

CONTROL

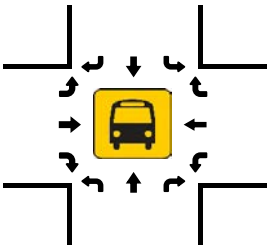
Signalized

		AM	NOON	PM
TEV	2580	0	2526	
PHF	0.92		0.93	

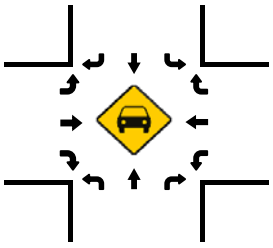
Total Vehicles (AM)



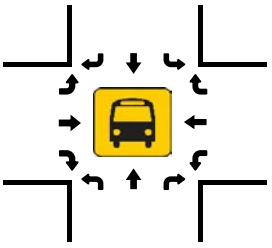
Total Vehicles (AM)



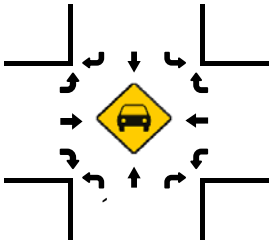
Total Vehicles (NOON)



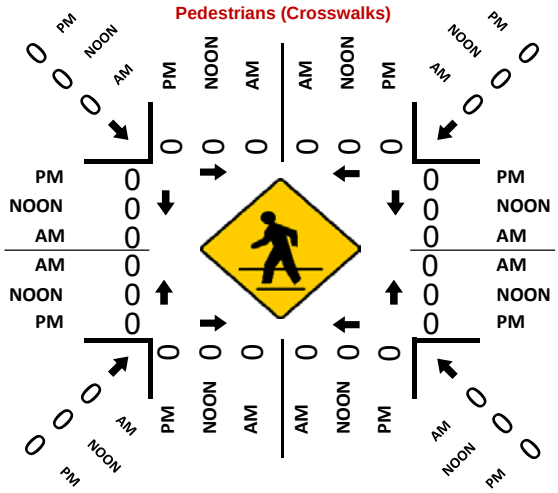
Total Vehicles (NOON)



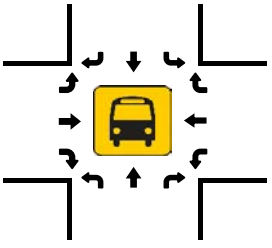
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Downey Ave & Gardendale St
City: South Gate
Control: Signalized

Project ID: 17-05668-023
Date: 10/11/2017

Total

NS/EW Streets:	Downey Ave				Downey Ave				Gardendale St				Gardendale St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	27	73	6	0	15	51	6	0	10	87	5	0	11	138	17	0	446
7:15 AM	34	136	5	0	39	105	18	0	15	115	14	0	6	149	20	0	656
7:30 AM	41	99	10	0	43	90	22	0	18	134	27	0	19	167	28	0	698
7:45 AM	36	77	8	0	38	85	43	0	16	151	30	0	15	176	15	0	690
8:00 AM	27	88	7	0	23	48	11	0	13	116	18	0	8	152	25	0	536
8:15 AM	40	79	14	0	22	50	8	0	17	107	14	0	6	136	19	0	512
8:30 AM	15	62	3	0	19	55	13	0	5	84	20	0	5	114	14	0	409
8:45 AM	24	64	7	0	13	61	2	0	4	63	16	0	9	96	14	0	373
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	244	678	60	0	212	545	123	0	98	857	144	0	79	1128	152	0	4320
APPROACH %'s :	24.85%	69.04%	6.11%	0.00%	24.09%	61.93%	13.98%	0.00%	8.92%	77.98%	13.10%	0.00%	5.81%	83.00%	11.18%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	138	400	30	0	143	328	94	0	62	516	89	0	48	644	88	0	2580
PEAK HR FACTOR :	0.841	0.735	0.750	0.000	0.831	0.781	0.547	0.000	0.861	0.854	0.742	0.000	0.632	0.915	0.786	0.000	0.924
	0.811				0.851				0.846				0.911				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	24	133	10	0	21	90	18	0	13	131	20	0	12	96	30	0	598
4:15 PM	36	127	18	0	27	84	10	0	18	124	10	0	8	82	28	0	572
4:30 PM	34	118	9	0	31	83	9	0	13	145	20	0	10	86	18	0	576
4:45 PM	31	96	17	0	23	79	6	0	20	154	21	0	10	104	22	0	583
5:00 PM	29	126	9	0	28	93	10	0	19	150	18	0	6	103	22	0	613
5:15 PM	25	119	7	0	25	91	16	0	19	173	20	0	12	119	18	0	644
5:30 PM	36	124	14	0	24	75	24	0	16	123	16	0	9	104	28	0	593
5:45 PM	40	154	17	0	23	90	17	0	21	110	19	0	11	136	38	0	676
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	255	997	101	0	202	685	110	0	139	1110	144	0	78	830	204	0	4855
APPROACH %'s :	18.85%	73.69%	7.46%	0.00%	20.26%	68.71%	11.03%	0.00%	9.98%	79.68%	10.34%	0.00%	7.01%	74.64%	18.35%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	130	523	47	0	100	349	67	0	75	556	73	0	38	462	106	0	2526
PEAK HR FACTOR :	0.813	0.849	0.691	0.000	0.893	0.938	0.698	0.000	0.893	0.803	0.913	0.000	0.792	0.849	0.697	0.000	0.934
	0.829				0.977				0.830				0.819				

Prepared by National Data & Surveying Services

Brookshire Ave/N. Somerset Ranch Rd & Gardendale St

Peak Hour Turning Movement Count

ID: 17-05668-024
City: South Gate

Day: Wednesday
Date: 10/11/2017

PEAK HOURS

AM	07:15 AM - 08:15 AM
NOON	NONE
PM	05:00 PM - 06:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Brookshire Ave/N. Somerset Ranch Rd

SOUTHBOUND

AM	87	137	150	0	357	AM
NOON	0	0	0	0	0	NOON
PM	68	115	109	0	412	PM
	1	1	1	0		

Gardendale St — EASTBOUND

AM	NOON	PM	
775	0	634	
0	0	0	0
76	0	77	1
626	0	589	1.5
14	0	5	0.5

CONTROL

Signalized

TEV	2120	0	1947
	AM	NOON	PM
PHF	0.88		0.95

WESTBOUND — Gardendale St

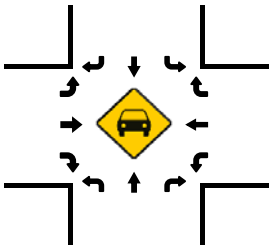
PM	NOON	AM	
117	0	150	0
564	0	687	2
60	0	47	1
0	0	0	0
721	0	790	

	0	0	1	0		
PM	180	0	2	218	23	PM
NOON	0	0	0	0	0	NOON
AM	198	0	1	131	14	AM

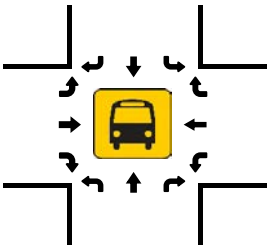
NORTHBOUND

Brookshire Ave/N. Somerset Ranch Rd

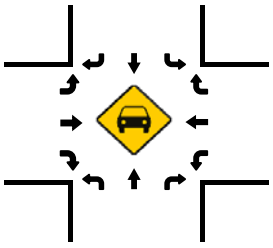
Total Vehicles (AM)



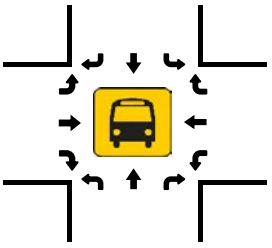
Total Vehicles (AM)



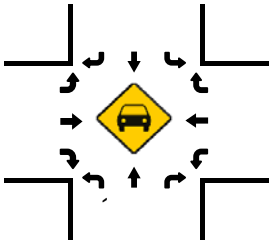
Total Vehicles (NOON)



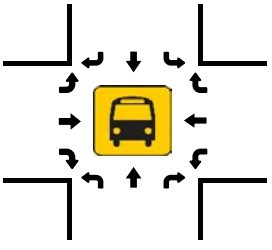
Total Vehicles (NOON)



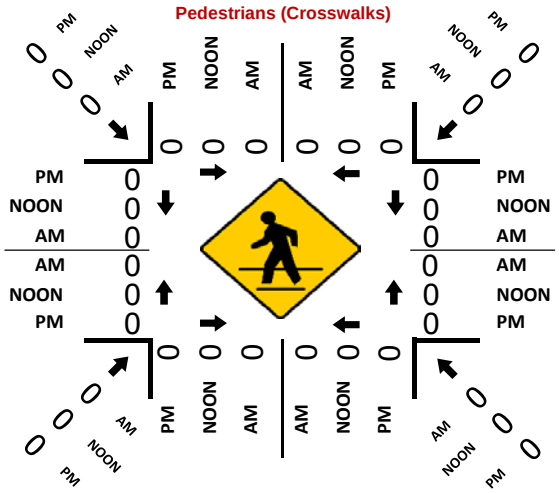
Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Brookshire Ave/N. Somerset Ranch Rd & Gardendale St
City: South Gate
Control: Signalized

Project ID: 17-05668-024
Date: 10/11/2017

Total

NS/EW Streets:	Brookshire Ave/N. Somerset Ranch Rd				Brookshire Ave/N. Somerset Ranch Rd				Gardendale St				Gardendale St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	1	1	0	1	1.5	0.5	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	29	1	0	20	24	16	0	11	94	6	0	3	138	29	0	371
7:15 AM	1	43	4	0	31	37	14	0	19	150	3	0	8	158	46	0	514
7:30 AM	0	47	2	0	38	44	33	0	21	167	6	0	8	175	61	0	602
7:45 AM	0	24	4	0	55	40	25	0	23	180	3	0	14	180	25	0	573
8:00 AM	0	17	4	0	26	16	15	0	13	129	2	0	17	174	18	0	431
8:15 AM	0	21	7	0	18	16	10	0	5	125	2	0	12	145	21	0	382
8:30 AM	0	11	0	0	19	22	10	0	10	94	4	0	3	124	16	0	313
8:45 AM	0	18	4	0	14	17	8	0	10	71	2	0	7	97	15	0	263
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	210	26	0	221	216	131	0	112	1010	28	0	72	1191	231	0	3449
APPROACH %'s :	0.42%	88.61%	10.97%	0.00%	38.91%	38.03%	23.06%	0.00%	9.74%	87.83%	2.43%	0.00%	4.82%	79.72%	15.46%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	1	131	14	0	150	137	87	0	76	626	14	0	47	687	150	0	2120
PEAK HR FACTOR :	0.250	0.697	0.875	0.000	0.682	0.778	0.659	0.000	0.826	0.869	0.583	0.000	0.691	0.954	0.615	0.000	0.880
	0.745				0.779				0.869				0.906				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	1	1	0	1	1.5	0.5	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	36	1	0	27	21	14	0	15	139	1	0	9	129	18	0	411
4:15 PM	0	40	7	0	25	19	14	0	21	138	4	0	9	112	23	0	412
4:30 PM	0	47	7	0	17	23	14	0	18	173	1	0	8	108	24	0	440
4:45 PM	1	55	6	0	17	25	22	0	19	157	2	0	7	117	25	0	453
5:00 PM	1	41	4	0	29	27	18	0	23	158	4	0	20	123	25	0	473
5:15 PM	1	61	10	0	29	30	12	0	25	171	0	0	9	135	30	0	513
5:30 PM	0	64	6	0	34	27	12	0	12	134	0	0	14	142	32	0	477
5:45 PM	0	52	3	0	17	31	26	0	17	126	1	0	17	164	30	0	484
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	4	396	44	0	195	203	132	0	150	1196	13	0	93	1030	207	0	3663
APPROACH %'s :	0.90%	89.19%	9.91%	0.00%	36.79%	38.30%	24.91%	0.00%	11.04%	88.01%	0.96%	0.00%	6.99%	77.44%	15.56%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	2	218	23	0	109	115	68	0	77	589	5	0	60	564	117	0	1947
PEAK HR FACTOR :	0.500	0.852	0.575	0.000	0.801	0.927	0.654	0.000	0.770	0.861	0.313	0.000	0.750	0.860	0.914	0.000	0.949
	0.844				0.986				0.856				0.878				

Prepared by National Data & Surveying Services

Lakewood Blvd & Imperial Hwy

Peak Hour Turning Movement Count

ID: 17-05668-025
City: Downey

Day: Wednesday
Date: 10/11/2017

PEAK HOURS		COUNT PERIODS
AM	07:15 AM - 08:15 AM	AM 07:00 AM - 09:00 AM
NOON	NONE	NOON NONE
PM	04:45 PM - 05:45 PM	PM 04:00 PM - 06:00 PM

Lakewood Blvd — SOUTHBOUND

	L	T	R	U	Total	
AM	137	828	165	26	1242	AM
NOON	0	0	0	0	0	NOON
PM	172	834	81	18	1270	PM
	0	3	2	0		

Imperial Hwy — EASTBOUND

AM	NOON	PM		
1336	0	1434	⇦	
14	0	41	↶	0
113	0	197	↱	1
1096	0	962	→	3
365	0	360	↳	1
AM	NOON	PM		

CONTROL

Signalized

TEV	5517	0	5440
	AM	NOON	PM
PHF	0.93		0.99

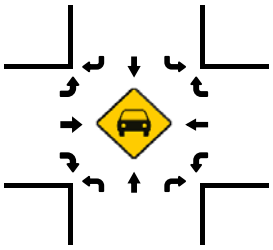
Imperial Hwy — WESTBOUND

PM	NOON	AM		
90	0	89	↰	0
891	0	800	←	3
304	0	140	↰	1
18	0	13	↶	0
1210	0	1573	⇨	
PM	NOON	AM		

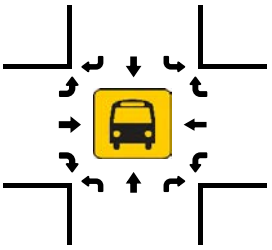
Lakewood Blvd — NORTHBOUND

	L	T	R	U	Total	
PM	1526	28	330	965	149	PM
NOON	0	0	0	0	0	NOON
AM	1366	33	385	1014	299	AM
	0	2	3	0		

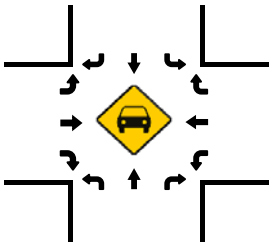
Total Vehicles (AM)



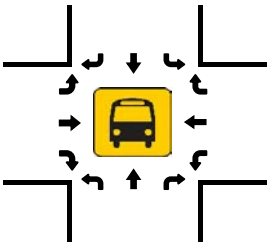
Total Vehicles (AM)



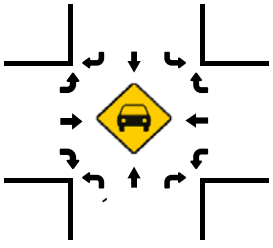
Total Vehicles (NOON)



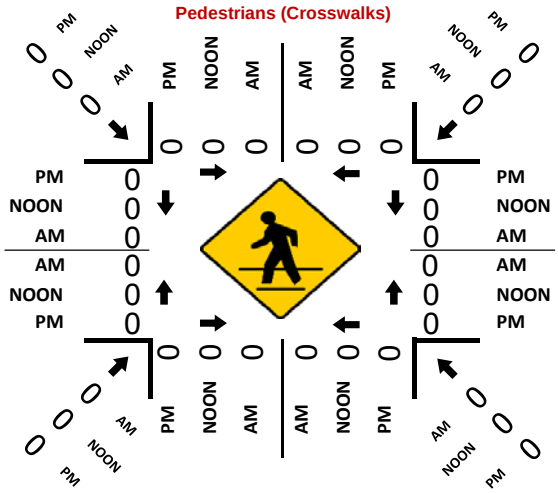
Total Vehicles (NOON)



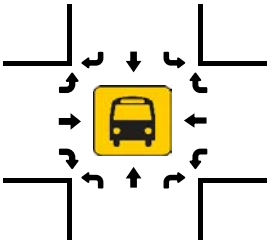
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Lakewood Blvd & Imperial Hwy
City: Downey
Control: Signalized

Project ID: 17-05668-025
Date: 10/11/2017

Total

NS/EW Streets:	Lakewood Blvd				Lakewood Blvd				Imperial Hwy				Imperial Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	3	0	0	2	3	0	0	1	3	1	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	47	174	56	11	14	162	26	1	24	182	69	5	29	218	15	2	1035
7:15 AM	98	287	67	10	32	200	28	3	24	184	87	5	24	193	18	1	1261
7:30 AM	94	273	53	7	41	215	40	4	23	264	96	2	44	224	39	3	1422
7:45 AM	95	241	85	9	60	258	45	12	30	310	106	2	28	180	17	4	1482
8:00 AM	98	213	94	7	32	155	24	7	36	338	76	5	44	203	15	5	1352
8:15 AM	81	258	75	7	18	122	27	0	38	229	69	3	39	187	13	6	1172
8:30 AM	70	224	80	4	17	122	21	0	35	230	71	3	40	187	11	2	1117
8:45 AM	79	257	65	3	13	124	34	1	28	162	37	3	32	150	12	2	1002
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	662	1927	575	58	227	1358	245	28	238	1899	611	28	280	1542	140	25	9843
APPROACH %'s :	20.55%	59.81%	17.85%	1.80%	12.22%	73.09%	13.19%	1.51%	8.57%	68.41%	22.01%	1.01%	14.09%	77.60%	7.05%	1.26%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	385	1014	299	33	165	828	137	26	113	1096	365	14	140	800	89	13	5517
PEAK HR FACTOR :	0.982	0.883	0.795	0.825	0.688	0.802	0.761	0.542	0.785	0.811	0.861	0.700	0.795	0.893	0.571	0.650	0.931
	0.937				0.771				0.873				0.840				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	3	0	0	2	3	0	0	1	3	1	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	80	255	36	5	15	197	37	1	42	235	76	8	74	206	21	4	1292
4:15 PM	79	202	46	7	15	178	41	3	43	222	71	3	56	187	21	4	1178
4:30 PM	96	222	48	6	22	182	44	0	44	241	93	12	72	198	25	6	1311
4:45 PM	79	223	42	7	24	208	45	9	60	250	71	15	78	203	22	5	1341
5:00 PM	91	242	34	6	23	201	40	1	46	253	103	8	74	238	18	2	1380
5:15 PM	70	227	32	7	19	236	42	3	48	198	94	10	86	238	24	6	1340
5:30 PM	90	273	41	8	15	189	45	5	43	261	92	8	66	212	26	5	1379
5:45 PM	74	239	39	9	32	206	51	3	58	209	82	11	65	212	17	4	1311
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	659	1883	318	55	165	1597	345	25	384	1869	682	75	571	1694	174	36	10532
APPROACH %'s :	22.61%	64.60%	10.91%	1.89%	7.74%	74.91%	16.18%	1.17%	12.76%	62.09%	22.66%	2.49%	23.07%	68.44%	7.03%	1.45%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	330	965	149	28	81	834	172	18	197	962	360	41	304	891	90	18	5440
PEAK HR FACTOR :	0.907	0.884	0.887	0.875	0.844	0.883	0.956	0.500	0.821	0.921	0.874	0.683	0.884	0.936	0.865	0.750	0.986
	0.893				0.921				0.951				0.920				

Prepared by National Data & Surveying Services

Lakewood Blvd & Gardendale St

Peak Hour Turning Movement Count

ID: 17-05668-026
City: Downey

Day: Wednesday
Date: 10/11/2017

PEAK HOURS	
AM	07:15 AM - 08:15 AM
NOON	NONE
PM	05:00 PM - 06:00 PM

COUNT PERIODS	
AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Lakewood Blvd — SOUTHBOUND

AM	167	874	71	1	1031	AM
NOON	0	0	0	0	0	NOON
PM	307	921	111	0	1033	PM
	1	2	1	0		

Gardendale St — EASTBOUND

AM	NOON	PM	
918	0	847	
0	0	0	0
103	0	115	1
539	0	553	2
269	0	183	0
AM	NOON	PM	

CONTROL

Signalized

	AM	NOON	PM
TEV	3801	0	3782
PHF	0.94		0.99

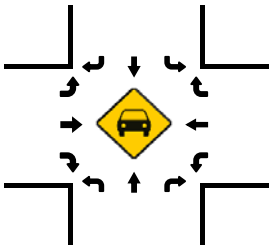
Gardendale St — WESTBOUND

PM	NOON	AM	
105	0	132	0
361	0	536	2
59	0	56	1
0	0	0	0
732	0	648	
PM	NOON	AM	

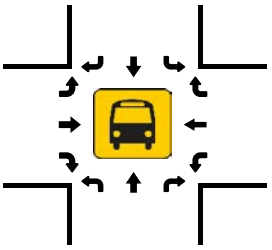
Lakewood Blvd — NORTHBOUND

PM	1170	7	179	813	68	PM
NOON	0	0	0	0	0	NOON
AM	1204	5	215	795	38	AM
		0	1	2	0	

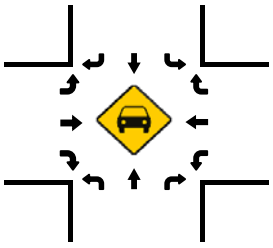
Total Vehicles (AM)



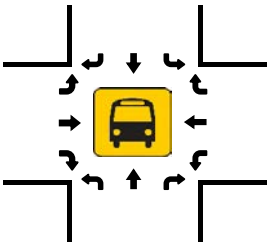
Total Vehicles (AM)



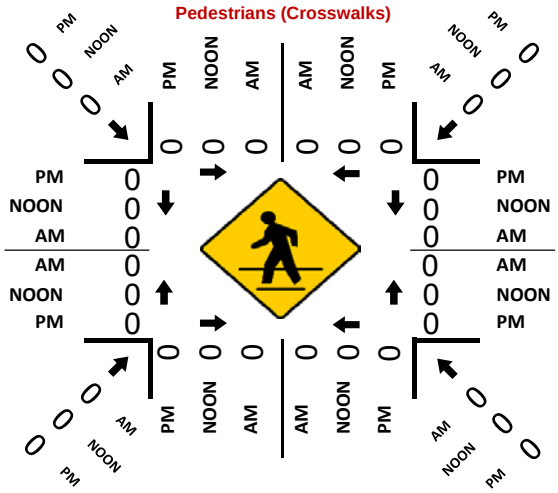
Total Vehicles (NOON)



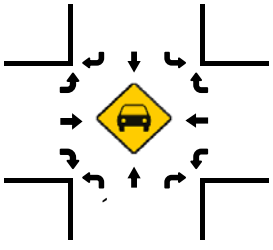
Total Vehicles (NOON)



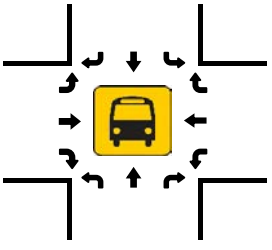
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Lakewood Blvd & Gardendale St
City: Downey
Control: Signalized

Project ID: 17-05668-026
Date: 10/11/2017

Total

NS/EW Streets:	Lakewood Blvd				Lakewood Blvd				Gardendale St				Gardendale St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	31	158	4	2	10	141	34	0	28	98	41	0	9	111	40	0	707
7:15 AM	50	224	8	2	15	187	31	0	23	114	62	0	10	124	40	0	890
7:30 AM	65	189	6	0	16	197	39	1	31	142	74	0	16	126	40	0	942
7:45 AM	63	193	4	1	25	283	54	0	25	130	65	0	9	132	23	0	1007
8:00 AM	37	189	20	2	15	207	43	0	24	153	68	0	21	154	29	0	962
8:15 AM	54	180	10	1	15	183	31	0	32	113	60	0	14	104	27	0	824
8:30 AM	47	176	13	2	9	179	40	0	32	79	48	0	14	65	13	0	717
8:45 AM	31	140	10	2	9	180	21	0	31	52	42	0	15	66	23	0	622
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	378	1449	75	12	114	1557	293	1	226	881	460	0	108	882	235	0	6671
APPROACH %'s :	19.75%	75.71%	3.92%	0.63%	5.80%	79.24%	14.91%	0.05%	14.42%	56.22%	29.36%	0.00%	8.82%	72.00%	19.18%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	215	795	38	5	71	874	167	1	103	539	269	0	56	536	132	0	3801
PEAK HR FACTOR :	0.827	0.887	0.475	0.625	0.710	0.772	0.773	0.250	0.831	0.881	0.909	0.000	0.667	0.870	0.825	0.000	0.944
		0.927				0.769				0.922				0.887			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	1	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	35	211	18	3	29	221	55	0	27	124	36	0	13	82	14	0	868
4:15 PM	47	193	6	2	15	207	61	0	28	124	48	0	9	61	20	0	821
4:30 PM	33	175	11	5	20	211	49	0	27	143	31	0	10	61	25	0	801
4:45 PM	40	212	9	3	25	220	61	0	39	138	37	0	16	81	21	0	902
5:00 PM	43	215	12	1	27	221	69	0	31	146	49	0	12	96	31	0	953
5:15 PM	38	217	17	2	22	235	76	0	28	149	50	0	18	71	22	0	945
5:30 PM	47	179	14	2	34	247	74	0	33	137	49	0	17	96	25	0	954
5:45 PM	51	202	25	2	28	218	88	0	23	121	35	0	12	98	27	0	930
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	334	1604	112	20	200	1780	533	0	236	1082	335	0	107	646	185	0	7174
APPROACH %'s :	16.14%	77.49%	5.41%	0.97%	7.96%	70.83%	21.21%	0.00%	14.28%	65.46%	20.27%	0.00%	11.41%	68.87%	19.72%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	179	813	68	7	111	921	307	0	115	553	183	0	59	361	105	0	3782
PEAK HR FACTOR :	0.877	0.937	0.680	0.875	0.816	0.932	0.872	0.000	0.871	0.928	0.915	0.000	0.819	0.921	0.847	0.000	0.991
		0.953				0.943				0.937				0.944			

Prepared by National Data & Surveying Services

Erickson Ave & Amigos Ave

Peak Hour Turning Movement Count

ID: 18-05531-001
City: Downey

Day: Wednesday
Date: 08/15/2018

PEAK HOURS	
AM	07:00 AM - 08:00 AM
NOON	NONE
PM	04:15 PM - 05:15 PM

COUNT PERIODS	
AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Erickson Ave — SOUTHBOUND

AM	44	79	42	0	53	AM
NOON	0	0	0	0	0	NOON
PM	8	40	15	0	103	PM
	0	2	1	0		

EASTBOUND — Amigos Ave

AM	NOON	PM	
91	0	41	
0	0	0	0
8	0	19	1
13	0	17	2
29	0	47	0
AM	NOON	PM	

CONTROL

4-Way Stop

TEV	309 AM	0 NOON	266 PM
PHF	0.91		0.81

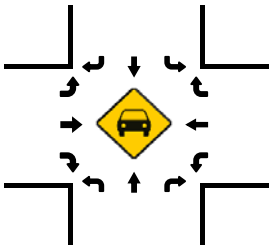
WESTBOUND — Amigos Ave

	PM	NOON	AM
0	12	0	9
2	8	0	7
1	1	0	0
0	0	0	0
	34	0	57
	PM	NOON	AM

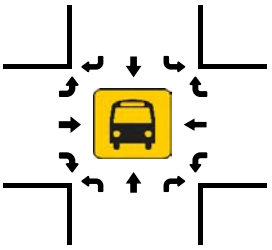
NORTHBOUND — Erickson Ave

PM	88	0	25	72	2	PM
NOON	0	0	0	0	0	NOON
AM	108	0	40	36	2	AM
		0	1	2	0	

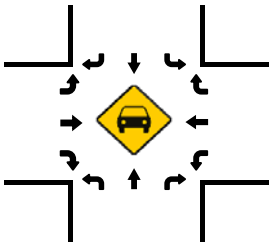
Total Vehicles (AM)



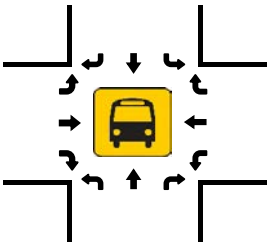
Total Vehicles (AM)



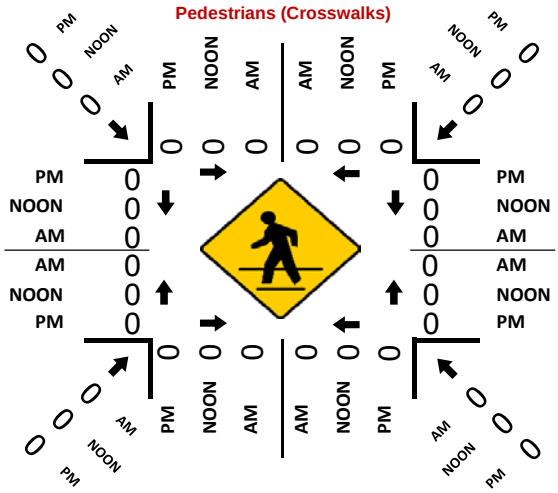
Total Vehicles (NOON)



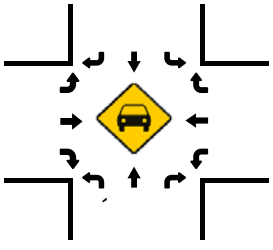
Total Vehicles (NOON)



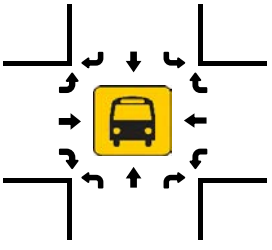
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Erickson Ave & Amigos Ave
City: Downey
Control: 4-Way Stop

Project ID: 18-05531-001
Date: 8/15/2018

Total

NS/EW Streets:	Erickson Ave				Erickson Ave				Amigos Ave				Amigos Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	10	14	0	0	5	15	10	0	2	2	8	0	0	0	1	0	67
7:15 AM	8	7	1	0	11	15	16	0	1	4	8	0	0	0	2	0	73
7:30 AM	10	8	1	0	16	20	10	0	3	1	8	0	0	5	2	0	84
7:45 AM	12	7	0	0	10	29	8	0	2	6	5	0	0	2	4	0	85
8:00 AM	11	11	0	0	9	11	14	0	4	0	5	0	0	1	1	0	67
8:15 AM	8	6	1	0	8	6	11	0	4	2	3	0	0	0	0	0	49
8:30 AM	8	3	1	0	6	16	10	0	2	1	2	0	0	3	0	0	52
8:45 AM	6	8	1	0	6	12	11	1	6	2	3	0	0	2	1	0	59
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	73	64	5	0	71	124	90	1	24	18	42	0	0	13	11	0	536
APPROACH %'s :	51.41%	45.07%	3.52%	0.00%	24.83%	43.36%	31.47%	0.35%	28.57%	21.43%	50.00%	0.00%	0.00%	54.17%	45.83%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	40	36	2	0	42	79	44	0	8	13	29	0	0	7	9	0	309
PEAK HR FACTOR :	0.833	0.643	0.500	0.000	0.656	0.681	0.688	0.000	0.667	0.542	0.906	0.000	0.000	0.350	0.563	0.000	0.909
	0.813				0.878				0.962				0.571				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	6	11	3	0	7	5	1	0	2	2	6	0	0	1	3	0	47
4:15 PM	12	15	0	0	3	8	6	0	1	6	8	0	0	0	3	0	62
4:30 PM	7	31	0	0	4	9	1	0	5	5	15	0	0	2	3	0	82
4:45 PM	5	10	2	0	5	12	0	0	8	5	13	0	0	4	4	0	68
5:00 PM	1	16	0	0	3	11	1	0	5	1	11	0	1	2	2	0	54
5:15 PM	6	10	3	0	5	3	2	0	1	6	6	0	0	2	1	0	45
5:30 PM	2	11	2	0	1	9	0	0	2	3	9	0	0	0	1	0	40
5:45 PM	1	3	0	0	2	5	2	1	5	4	5	0	0	1	1	0	30
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	40	107	10	0	30	62	13	1	29	32	73	0	1	12	18	0	428
APPROACH %'s :	25.48%	68.15%	6.37%	0.00%	28.30%	58.49%	12.26%	0.94%	21.64%	23.88%	54.48%	0.00%	3.23%	38.71%	58.06%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	25	72	2	0	15	40	8	0	19	17	47	0	1	8	12	0	266
PEAK HR FACTOR :	0.521	0.581	0.250	0.000	0.750	0.833	0.333	0.000	0.594	0.708	0.783	0.000	0.250	0.500	0.750	0.000	0.811
	0.651				0.926				0.798				0.656				

APPENDIX B

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

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.

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INTERSECTION CAPACITY UTILIZATION

Garfield Avenue @ Gardendale Street

N-S St: Garfield Avenue
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-6

Peak hr: AM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF DOWNEY

	2017 EXIST. TRAFFIC				2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C		Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio		Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	5	1600	0.003		0	5	1600	0.003	0	5	1600	0.003	0	5	1600	0.003
Nb Thru	921	3200	0.297	*	0	921	3200	0.340	* -40	918	3200	0.297	* 0	918	3200	0.339 *
Nb Right	30	0	-		137	167	0	-	0	31	0	-	137	168	0	-
Sb Left	415	3200	0.130	*	82	497	3200	0.155	* 5	437	3200	0.136	* 82	519	3200	0.162 *
Sb Thru	611	3200	0.201		0	611	3200	0.201	-2	633	3200	0.209	0	633	3200	0.209
Sb Right	33	0	-		0	33	0	-	0	34	0	-	0	34	0	-
Eb Left	73	1600	0.046	*	0	73	1600	0.046	* 0	76	1600	0.047	* 0	76	1600	0.047 *
Eb Thru	59	1600	0.044		0	59	1600	0.044	0	61	1600	0.046	0	61	1600	0.046
Eb Right	11	0	-		0	11	0	-	0	11	0	-	0	11	0	-
Wb Left	121	0	0.076		19	140	0	0.088	0	126	0	0.079	19	145	0	0.091
Wb Thru	34	1600	0.097		0	34	1600	0.109	* 0	35	1600	0.101	0	35	1600	0.113 *
Wb Right [3]	736	3200	0.100	*	11	747	3200	0.078	2	767	3200	0.103	* 11	778	3200	0.081
Yellow Allowance:			0.100	*				0.100	*			0.100	*			0.100 *
ICU			0.673					0.750				0.684				0.762
LOS			B					C				B				C

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*
3 *The westbound right-turn lane has an overlapping phase with southbound left-turn phase.*

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INTERSECTION CAPACITY UTILIZATION

Garfield Avenue @ Gardendale Street

N-S St: Garfield Avenue
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-6

Peak hr: PM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF DOWNEY

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	14	1600	0.009	0	14	1600	0.009	0	15	1600	0.009	0	15	1600	0.009
Nb Thru	641	3200	0.216 *	0	641	3200	0.223 *	-1	666	3200	0.226 *	0	666	3200	0.233 *
Nb Right	51	0	-	23	74	0	-	5	58	0	-	23	81	0	-
Sb Left	484	3200	0.151 *	14	498	3200	0.156 *	6	509	3200	0.159 *	14	523	3200	0.164 *
Sb Thru	699	3200	0.237	0	699	3200	0.237	-36	691	3200	0.235	0	691	3200	0.235
Sb Right	60	0	-	0	60	0	-	0	62	0	-	0	62	0	-
Eb Left	41	1600	0.026 *	0	41	1600	0.026 *	0	43	1600	0.027 *	0	43	1600	0.027 *
Eb Thru	26	1600	0.022	0	26	1600	0.022	0	27	1600	0.023	0	27	1600	0.023
Eb Right	9	0	-	0	9	0	-	0	9	0	-	0	9	0	-
Wb Left	83	0	0.052	110	193	0	0.121	3	89	0	0.056	110	199	0	0.125
Wb Thru	37	1600	0.075 *	0	37	1600	0.144 *	0	38	1600	0.080 *	0	38	1600	0.149 *
Wb Right [3]	347	3200	0.000	66	413	3200	0.000	7	368	3200	0.000	66	434	3200	0.000
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.568				0.648				0.592				0.672
LOS			A				B				A				B

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*
3 *The westbound right-turn lane has an overlapping phase with southbound left-turn phase.*

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INTERSECTION CAPACITY UTILIZATION

Old River School Road @ Imperial Highway

N-S St: Old River School Road
E-W St: Imperial Highway
Project: 5-17-0354-1/ Rancho Los Amigos South Campus
File: ICU-12

Peak hr: AM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF DOWNEY

	2017 EXIST. TRAFFIC				2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C		Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio		Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	12	1600	0.008	*	6	18	1600	0.011	* 0	12	1600	0.008	* 6	18	1600	0.012 *
Nb Thru	91	3200	0.033		6	97	3200	0.034	0	95	3200	0.034	6	101	3200	0.036
Nb Right	13	0	-		0	13	0	-	0	14	0	-	0	14	0	-
Sb Left	317	1600	0.198		0	317	1600	0.198	1	331	1600	0.207	0	331	1600	0.207
Sb Thru	49	1600	0.031		46	95	1600	0.059	0	51	1600	0.032	46	97	1600	0.061
Sb Right	458	1600	0.286	*	0	458	1600	0.286	* 0	476	1600	0.298	* 0	476	1600	0.298 *
Eb Left	267	1600	0.167	*	0	267	1600	0.167	* 0	278	1600	0.174	* 0	278	1600	0.174 *
Eb Thru	1486	4800	0.310		137	1623	4800	0.338	-94	1451	4800	0.302	137	1588	4800	0.331
Eb Right	167	1600	0.104		46	213	1600	0.133	0	174	1600	0.109	46	220	1600	0.137
Wb Left	9	1600	0.006		0	9	1600	0.006	0	9	1600	0.006	0	9	1600	0.006
Wb Thru	1195	4800	0.323	*	19	1214	4800	0.326	* -39	1204	4800	0.327	* 19	1223	4800	0.331 *
Wb Right	353	0	-		0	353	0	-	0	367	0	-	0	367	0	-
Yellow Allowance:			0.100	*				0.100	*			0.100	*			0.100 *
ICU			0.883					0.891				0.906				0.914
LOS			D					D				E				E

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Old River School Road @ Imperial Highway

N-S St: Old River School Road
E-W St: Imperial Highway
Project: 5-17-0354-1/ Rancho Los Amigos South Campus
File: ICU-12

Peak hr: PM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF DOWNEY

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	83	1600	0.052 *	37	120	1600	0.075 *	1	87	1600	0.055 *	37	124	1600	0.078 *
Nb Thru	46	3200	0.021	37	83	3200	0.033	2	50	3200	0.023	37	87	3200	0.034
Nb Right	22	0	-	0	22	0	-	0	23	0	-	0	23	0	-
Sb Left	288	1600	0.180	0	288	1600	0.180	-1	299	1600	0.187	0	299	1600	0.187
Sb Thru	34	1600	0.021	8	42	1600	0.026	1	36	1600	0.023	8	44	1600	0.028
Sb Right	329	1600	0.206 *	0	329	1600	0.206 *	0	342	1600	0.214 *	0	342	1600	0.214 *
Eb Left	250	1600	0.156 *	0	250	1600	0.156 *	0	260	1600	0.163 *	0	260	1600	0.163 *
Eb Thru	1421	4800	0.296	23	1444	4800	0.301	-25	1453	4800	0.303	23	1476	4800	0.307
Eb Right	43	1600	0.027	8	51	1600	0.032	2	47	1600	0.029	8	55	1600	0.034
Wb Left	3	1600	0.002	0	3	1600	0.002	0	3	1600	0.002	0	3	1600	0.002
Wb Thru	1110	4800	0.275 *	110	1220	4800	0.298 *	-93	1061	4800	0.267 *	110	1171	4800	0.290 *
Wb Right	210	0	-	0	210	0	-	0	218	0	-	0	218	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.789				0.835				0.798				0.844
LOS			C				D				C				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Erickson Avenue @ W. Imperial Highway

N-S St: Erickson Avenue
E-W St: W. Imperial Highway
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-13

Peak hr: AM
Annual Growth: 1%

CITY OF DOWNEY

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	31	3200	0.010 *	19	50	3200	0.016 *	0	32	3200	0.010 *	19	51	3200	0.016 *
Nb Thru	40	1600	0.025	0	40	1600	0.025	0	42	1600	0.026	0	42	1600	0.026
Nb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Sb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Thru	25	3200	0.016 *	0	25	3200	0.016 *	0	26	3200	0.017 *	0	26	3200	0.017 *
Sb Right	26	0	-	0	26	0	-	0	27	0	-	0	27	0	-
Eb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Wb Left	229	1600	0.143	183	412	1600	0.258	0	238	1600	0.149	183	421	1600	0.263
Wb Thru	18	1600	0.037	0	18	1600	0.037	0	19	1600	0.038	0	19	1600	0.038
Wb Right	41	0	-	0	41	0	-	0	43	0	-	0	43	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.269				0.389				0.276				0.396
LOS			A				A				A				A

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Erickson Avenue @ W. Imperial Highway

N-S St: Erickson Avenue
E-W St: W. Imperial Highway
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-13

Peak hr: PM
Annual Growth: 1%

CITY OF DOWNEY

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	83	3200	0.026 *	110	193	3200	0.060 *	3	89	3200	0.028 *	110	199	3200	0.062 *
Nb Thru	11	1600	0.007	0	11	1600	0.007	0	11	1600	0.007	0	11	1600	0.007
Nb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Sb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Thru	41	3200	0.023 *	0	41	3200	0.023 *	0	43	3200	0.023 *	0	43	3200	0.023 *
Sb Right	31	0	-	0	31	0	-	0	32	0	-	0	32	0	-
Eb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Wb Left	71	1600	0.044	30	101	1600	0.063	6	80	1600	0.050	30	110	1600	0.069
Wb Thru	8	1600	0.009	0	8	1600	0.009	0	8	1600	0.009	0	8	1600	0.009
Wb Right	6	0	-	0	6	0	-	0	6	0	-	0	6	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.193				0.246				0.201				0.254
LOS			A				A				A				A

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
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INTERSECTION CAPACITY UTILIZATION

Erickson Avenue @ E. Imperial Highway

N-S St: Erickson Avenue
E-W St: E. Imperial Highway
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-14

Peak hr: AM
Annual Growth: 1%

CITY OF DOWNEY

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Nb Thru	42	3200	0.025	19	61	3200	0.039	0	44	3200	0.026	19	63	3200	0.040
Nb Right	39	0	-	25	64	0	-	0	41	0	-	25	66	0	-
Sb Left	47	1600	0.029	0	47	1600	0.029	0	49	1600	0.031	0	49	1600	0.031
Sb Thru	206	3200	0.064 *	183	389	3200	0.122 *	0	214	3200	0.067 *	183	397	3200	0.124 *
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	29	1600	0.018	0	29	1600	0.018	0	30	1600	0.019	0	30	1600	0.019
Eb Thru	3	1600	0.073 *	0	3	1600	0.159 *	0	3	1600	0.076 *	0	3	1600	0.162 *
Eb Right	114	0	-	137	251	0	-	0	119	0	-	137	256	0	-
Wb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Wb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Wb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.238				0.380				0.243				0.386
LOS			A				A				A				A

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Erickson Avenue @ E. Imperial Highway

N-S St: Erickson Avenue
E-W St: E. Imperial Highway
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-14

Peak hr: PM
Annual Growth: 1%

CITY OF DOWNEY

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Thru	87	3200	0.063 *	110	197	3200	0.144 *	3	93	3200	0.068 *	110	203	3200	0.148 *
Nb Right	116	0	-	147	263	0	-	3	124	0	-	147	271	0	-
Sb Left	59	1600	0.037 *	0	59	1600	0.037 *	0	61	1600	0.038 *	0	61	1600	0.038 *
Sb Thru	56	3200	0.018	30	86	3200	0.027	6	64	3200	0.020	30	94	3200	0.029
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	6	1600	0.004	0	6	1600	0.004	0	6	1600	0.004	0	6	1600	0.004
Eb Thru	4	1600	0.031 *	0	4	1600	0.045 *	0	4	1600	0.035 *	0	4	1600	0.049 *
Eb Right	45	0	-	23	68	0	-	5	52	0	-	23	75	0	-
Wb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Wb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Wb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.231				0.326				0.241				0.336
LOS			A				A				A				A

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Industrial Avenue @ Gardendale Street

N-S St: Industrial Avenue
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-15

Peak hr: AM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF DOWNEY

	2017 EXIST. TRAFFIC				2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1		2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume		Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	35		0	0.022	0	35	0	0.022	0	36	0	0.023	0	36	0	0.023
Nb Thru	0		1600	0.025 *	0	0	1600	0.031 *	0	0	1600	0.026 *	0	0	1600	0.032 *
Nb Right	5		0	-	9	14	0	-	0	5	0	-	9	14	0	-
Sb Left	0		0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Sb Thru	0		0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0		0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	0		0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Eb Thru	565		1600	0.364	228	793	1600	0.507	6	594	1600	0.383	228	822	1600	0.525
Eb Right	18		0	-	0	18	0	-	0	19	0	-	0	19	0	-
Wb Left	6		1600	0.004	1	7	1600	0.004	0	6	1600	0.004	1	7	1600	0.005
Wb Thru	895		1600	0.559 *	31	926	1600	0.579 *	2	933	1600	0.583 *	31	964	1600	0.602 *
Wb Right	0		0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:				0.100 *				0.100 *				0.100 *				0.100 *
ICU				0.684				0.709				0.709				0.734
LOS				B				C				C				C

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Industrial Avenue @ Gardendale Street

N-S St: Industrial Avenue
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-15

Peak hr: PM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF DOWNEY

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	25	0	0.016	0	25	0	0.016	0	26	0	0.016	0	26	0	0.016
Nb Thru	0	1600	0.021 *	0	0	1600	0.023 *	0	0	1600	0.022 *	0	0	1600	0.023 *
Nb Right	9	0	-	2	11	0	-	0	9	0	-	2	11	0	-
Sb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Thru	608	1600	0.398 *	38	646	1600	0.422 *	11	643	1600	0.421 *	38	681	1600	0.445 *
Eb Right	29	0	-	0	29	0	-	0	30	0	-	0	30	0	-
Wb Left	10	1600	0.006 *	7	17	1600	0.011 *	0	10	1600	0.007 *	7	17	1600	0.011 *
Wb Thru	461	1600	0.288	184	645	1600	0.403	9	488	1600	0.305	184	672	1600	0.420
Wb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.526				0.555				0.550				0.579
LOS			A				A				A				A

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*

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INTERSECTION CAPACITY UTILIZATION

Erickson Avenue @ Gardendale Street

N-S St: Erickson Avenue
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-16

Peak hr: AM
Annual Growth: 1%

CITY OF DOWNEY

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Sb Left	0	1600	0.000	36	36	1600	0.023	0	0	1600	0.000	36	36	1600	0.023
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	1600	0.000	33	33	1600	0.021	0	0	1600	0.000	33	33	1600	0.021
Eb Left	0	1600	0.000 *	237	237	1600	0.148 *	1	1	1600	0.001 *	237	238	1600	0.149 *
Eb Thru	572	1600	0.358	0	572	1600	0.358	5	600	1600	0.375	0	600	1600	0.375
Eb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Wb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Wb Thru	900	1600	0.563 *	0	900	1600	0.563 *	2	938	1600	0.586 *	0	938	1600	0.586 *
Wb Right	0	1600	0.000	265	265	1600	0.166	1	1	1600	0.001	265	266	1600	0.166
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.663				0.833				0.687				0.858
LOS			B				D				B				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Erickson Avenue @ Gardendale Street

N-S St: Erickson Avenue
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-16

Peak hr: PM
Annual Growth: 1%

CITY OF DOWNEY

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Sb Left	0	1600	0.000	213	213	1600	0.133	5	5	1600	0.003	213	218	1600	0.136
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	1600	0.000	191	191	1600	0.119	4	4	1600	0.003	191	195	1600	0.122
Eb Left	0	1600	0.000	39	39	1600	0.024	8	8	1600	0.005	39	47	1600	0.029
Eb Thru	599	1600	0.374 *	0	599	1600	0.374 *	3	626	1600	0.391 *	0	626	1600	0.391 *
Eb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Wb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Wb Thru	490	1600	0.306	0	490	1600	0.306	5	515	1600	0.322	0	515	1600	0.322
Wb Right	0	1600	0.000	44	44	1600	0.028	9	9	1600	0.006	44	53	1600	0.033
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.474				0.608				0.494				0.627
LOS			A				B				A				B

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Arizona Avenue @ Gardendale Street

N-S St: Arizona Avenue
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-17

Peak hr: AM
Annual Growth: 1%

CITY OF DOWNEY

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	19	0	0.012	9	28	0	0.018	0	20	0	0.012	9	29	0	0.018
Nb Thru	0	1600	0.029 *	0	0	1600	0.034 *	0	0	1600	0.030 *	0	0	1600	0.036 *
Nb Right	27	0	-	0	27	0	-	0	28	0	-	0	28	0	-
Sb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Eb Thru	568	1600	0.360	35	603	1600	0.383	5	596	1600	0.378	35	631	1600	0.400
Eb Right	8	0	-	1	9	0	-	0	8	0	-	1	9	0	-
Wb Left	23	1600	0.014	0	23	1600	0.014	0	24	1600	0.015	0	24	1600	0.015
Wb Thru	881	1600	0.551 *	256	1137	1600	0.711 *	3	919	1600	0.575 *	256	1175	1600	0.735 *
Wb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.679				0.845				0.704				0.870
LOS			B				D				C				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Arizona Avenue @ Gardendale Street

N-S St: Arizona Avenue
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-17

Peak hr: PM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF DOWNEY

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	4	0	0.003	2	6	0	0.004	0	4	0	0.003	2	6	0	0.004
Nb Thru	0	1600	0.023 *	0	0	1600	0.024 *	0	0	1600	0.023 *	0	0	1600	0.025 *
Nb Right	32	0	-	0	32	0	-	0	33	0	-	0	33	0	-
Sb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Thru	596	1600	0.376 *	206	802	1600	0.509 *	8	628	1600	0.396 *	206	834	1600	0.529 *
Eb Right	6	0	-	7	13	0	-	0	6	0	-	7	13	0	-
Wb Left	16	1600	0.010 *	0	16	1600	0.010 *	0	17	1600	0.010 *	0	17	1600	0.010 *
Wb Thru	490	1600	0.306	42	532	1600	0.333	14	524	1600	0.327	42	566	1600	0.354
Wb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.509				0.643				0.530				0.664
LOS			A				B				A				B

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*

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INTERSECTION CAPACITY UTILIZATION

Paramount Boulevard @ Imperial Highway

N-S St: Paramount Boulevard
E-W St: Imperial Highway
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-19

Peak hr: AM
Annual Growth: 1%

CITY OF DOWNEY

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

	2017 EXIST. TRAFFIC				2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C		Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio		Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	277	3200	0.087	*	0	277	3200	0.087 *	-80	208	3200	0.065	0	208	3200	0.065
Nb Thru	799	3200	0.250		0	799	3200	0.250	4	835	3200	0.261 *	0	835	3200	0.261 *
Nb Right	82	1600	0.051		0	82	1600	0.051	0	85	1600	0.053	0	85	1600	0.053
Sb Left	168	1600	0.105		0	168	1600	0.105	7	182	1600	0.114 *	0	182	1600	0.114 *
Sb Thru	898	3200	0.281	*	0	898	3200	0.281 *	5	939	3200	0.293	0	939	3200	0.293
Sb Right	238	1600	0.149		91	329	1600	0.206	3	251	1600	0.157	91	342	1600	0.213
Eb Left	275	3200	0.086	*	13	288	3200	0.090 *	6	292	3200	0.091 *	13	305	3200	0.095 *
Eb Thru	1216	4800	0.272		13	1229	4800	0.274	10	1275	4800	0.278	13	1288	4800	0.281
Eb Right	88	0	-		0	88	0	-	-31	61	0	-	0	61	0	-
Wb Left	109	1600	0.068		0	109	1600	0.068	0	113	1600	0.071	0	113	1600	0.071
Wb Thru	1179	4800	0.266	*	91	1270	4800	0.285 *	-23	1203	4800	0.273 *	91	1294	4800	0.292 *
Wb Right	100	0	-		0	100	0	-	3	107	0	-	0	107	0	-
Yellow Allowance:			0.100	*				0.100 *				0.100 *				0.100 *
ICU			0.820					0.843				0.839				0.862
LOS			D					D				D				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Paramount Boulevard @ Imperial Highway

N-S St: Paramount Boulevard
E-W St: Imperial Highway
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-19

Peak hr: PM
Annual Growth: 1%

CITY OF DOWNEY

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	230	3200	0.072	0	230	3200	0.072	-31	208	3200	0.065	0	208	3200	0.065
Nb Thru	761	3200	0.238 *	0	761	3200	0.238 *	6	797	3200	0.249 *	0	797	3200	0.249 *
Nb Right	80	1600	0.050	0	80	1600	0.050	0	83	1600	0.052	0	83	1600	0.052
Sb Left	206	1600	0.129 *	0	206	1600	0.129 *	6	220	1600	0.138 *	0	220	1600	0.138 *
Sb Thru	769	3200	0.240	0	769	3200	0.240	8	808	3200	0.252	0	808	3200	0.252
Sb Right	189	1600	0.118	15	204	1600	0.128	9	206	1600	0.128	15	221	1600	0.138
Eb Left	284	3200	0.089	73	357	3200	0.112	6	301	3200	0.094	73	374	3200	0.117
Eb Thru	1301	4800	0.298 *	73	1374	4800	0.313 *	-16	1337	4800	0.290 *	73	1410	4800	0.305 *
Eb Right	130	0	-	0	130	0	-	-82	53	0	-	0	53	0	-
Wb Left	126	1600	0.079 *	0	126	1600	0.079 *	0	131	1600	0.082 *	0	131	1600	0.082 *
Wb Thru	958	4800	0.228	15	973	4800	0.231	14	1010	4800	0.242	15	1025	4800	0.246
Wb Right	138	0	-	0	138	0	-	10	154	0	-	0	154	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.843				0.859				0.858				0.874
LOS			D				D				D				D

** Key conflicting movement as a part of ICU*
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2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Paramount Boulevard @ Gardendale Street

N-S St: Paramount Boulevard
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-20

Peak hr: AM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF DOWNEY

	2017 EXIST. TRAFFIC				2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1		2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume		Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	161		1600	0.101 *	137	298	1600	0.186 *	0	167	1600	0.105 *	137	304	1600	0.190 *
Nb Thru	942		3200	0.294	0	942	3200	0.294	-37	943	3200	0.295	0	943	3200	0.295
Nb Right	91		1600	0.057	0	91	1600	0.057	1	96	1600	0.060	0	96	1600	0.060
Sb Left	114		1600	0.071	0	114	1600	0.071	-15	104	1600	0.065	0	104	1600	0.065
Sb Thru	900		3200	0.281 *	0	900	3200	0.281 *	-11	925	3200	0.289 *	0	925	3200	0.289 *
Sb Right	91		1600	0.057	0	91	1600	0.057	0	95	1600	0.059	0	95	1600	0.059
Eb Left	80		1600	0.050	0	80	1600	0.050 *	0	83	1600	0.052	0	83	1600	0.052 *
Eb Thru	434		3200	0.158 *	16	450	3200	0.169	5	456	3200	0.166 *	16	472	3200	0.177
Eb Right	71		0	-	19	90	0	-	0	74	0	-	19	93	0	-
Wb Left	150		1600	0.094 *	0	150	1600	0.094	1	157	1600	0.098 *	0	157	1600	0.098
Wb Thru	638		3200	0.199	119	757	3200	0.237 *	2	666	3200	0.208	119	785	3200	0.245 *
Wb Right	163		1600	0.102	0	163	1600	0.102	-37	133	1600	0.083	0	133	1600	0.083
Yellow Allowance:				0.100 *				0.100 *				0.100 *				0.100 *
ICU				0.733				0.854				0.758				0.877
LOS				C				D				C				D

* *Key conflicting movement as a part of ICU*
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2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Paramount Boulevard @ Gardendale Street

N-S St: Paramount Boulevard
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-20

Peak hr: PM
Annual Growth: 1%

CITY OF DOWNEY

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	79	1600	0.049	23	102	1600	0.064	5	87	1600	0.054	23	110	1600	0.069
Nb Thru	1046	3200	0.327 *	0	1046	3200	0.327 *	-10	1078	3200	0.337 *	0	1078	3200	0.337 *
Nb Right	113	1600	0.071	0	113	1600	0.071	2	120	1600	0.075	0	120	1600	0.075
Sb Left	118	1600	0.074 *	0	118	1600	0.074 *	-38	85	1600	0.053 *	0	85	1600	0.053 *
Sb Thru	946	3200	0.296	0	946	3200	0.296	-35	949	3200	0.297	0	949	3200	0.297
Sb Right	85	1600	0.053	0	85	1600	0.053	0	88	1600	0.055	0	88	1600	0.055
Eb Left	87	1600	0.054	0	87	1600	0.054	0	90	1600	0.057	0	90	1600	0.057
Eb Thru	459	3200	0.169 *	95	554	3200	0.233 *	5	482	3200	0.179 *	95	577	3200	0.243 *
Eb Right	83	0	-	110	193	0	-	3	89	0	-	110	199	0	-
Wb Left	106	1600	0.066 *	0	106	1600	0.066 *	2	112	1600	0.070 *	0	112	1600	0.070 *
Wb Thru	374	3200	0.117	20	394	3200	0.123	9	398	3200	0.124	20	418	3200	0.131
Wb Right	127	1600	0.079	0	127	1600	0.079	-14	118	1600	0.074	0	118	1600	0.074
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.736				0.800				0.739				0.803
LOS			C				C				C				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Downey Avenue @ Gardendale Street

N-S St: Downey Avenue
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-23

Peak hr: AM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF DOWNEY

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	138	1600	0.086	46	184	1600	0.115 *	-14	130	1600	0.081	46	176	1600	0.110 *
Nb Thru	400	3200	0.134 *	0	400	3200	0.134	1	417	3200	0.140 *	0	417	3200	0.140
Nb Right	30	0	-	0	30	0	-	0	31	0	-	0	31	0	-
Sb Left	143	1600	0.089 *	0	143	1600	0.089	0	149	1600	0.093 *	0	149	1600	0.093
Sb Thru	328	3200	0.132	0	328	3200	0.132 *	1	342	3200	0.137	0	342	3200	0.137 *
Sb Right	94	0	-	0	94	0	-	0	98	0	-	0	98	0	-
Eb Left	62	1600	0.039 *	0	62	1600	0.039 *	0	64	1600	0.040 *	0	64	1600	0.040 *
Eb Thru	516	3200	0.189	10	526	3200	0.194	-3	534	3200	0.194	10	544	3200	0.199
Eb Right	89	0	-	6	95	0	-	-6	87	0	-	6	93	0	-
Wb Left	48	1600	0.030	0	48	1600	0.030	0	50	1600	0.031	0	50	1600	0.031
Wb Thru	644	3200	0.229 *	73	717	3200	0.252 *	-20	650	3200	0.232 *	73	723	3200	0.254 *
Wb Right	88	0	-	0	88	0	-	0	92	0	-	0	92	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.591				0.637				0.605				0.642
LOS			A				B				B				B

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Downey Avenue @ Gardendale Street

N-S St: Downey Avenue
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-23

Peak hr: PM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF DOWNEY

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	130	1600	0.081	8	138	1600	0.086	-4	131	1600	0.082	8	139	1600	0.087
Nb Thru	523	3200	0.178 *	0	523	3200	0.178 *	1	545	3200	0.186 *	0	545	3200	0.186 *
Nb Right	47	0	-	0	47	0	-	0	49	0	-	0	49	0	-
Sb Left	100	1600	0.063 *	0	100	1600	0.063 *	0	104	1600	0.065 *	0	104	1600	0.065 *
Sb Thru	349	3200	0.130	0	349	3200	0.130	1	364	3200	0.136	0	364	3200	0.136
Sb Right	67	0	-	0	67	0	-	0	70	0	-	0	70	0	-
Eb Left	75	1600	0.047 *	0	75	1600	0.047	0	78	1600	0.049 *	0	78	1600	0.049
Eb Thru	556	3200	0.197	59	615	3200	0.227 *	-17	561	3200	0.195	59	620	3200	0.225 *
Eb Right	73	0	-	37	110	0	-	-14	62	0	-	37	99	0	-
Wb Left	38	1600	0.024	0	38	1600	0.024 *	0	40	1600	0.025	0	40	1600	0.025 *
Wb Thru	462	3200	0.178 *	12	474	3200	0.181	1	481	3200	0.185 *	12	493	3200	0.189
Wb Right	106	0	-	0	106	0	-	0	110	0	-	0	110	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.565				0.591				0.584				0.600
LOS			A				A				A				A

* *Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Brookshire Avenue-N. Somerset Ranch Road @ Gardendale Street

N-S St: Brookshire Avenue-N. Somerset Ranch Roa
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-24

Peak hr: AM
Annual Growth: 1%

CITY OF DOWNEY

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	1	0	0.001	0	1	0	0.001	0	1	0	0.001	0	1	0	0.001
Nb Thru	131	1600	0.091 *	0	131	1600	0.091 *	0	136	1600	0.095 *	0	136	1600	0.095 *
Nb Right	14	0	-	0	14	0	-	0	15	0	-	0	15	0	-
Sb Left	150	1600	0.094 *	0	150	1600	0.094 *	0	156	1600	0.098 *	0	156	1600	0.098 *
Sb Thru	137	1600	0.086	0	137	1600	0.086	0	142	1600	0.089	0	142	1600	0.089
Sb Right	87	1600	0.054	0	87	1600	0.054	0	90	1600	0.057	0	90	1600	0.057
Eb Left	76	1600	0.048 *	0	76	1600	0.048 *	0	79	1600	0.049 *	0	79	1600	0.049 *
Eb Thru	626	3200	0.196	10	636	3200	0.199	-3	648	3200	0.203	10	658	3200	0.206
Eb Right [3]	14	1000000	0.000	0	14	1000000	0.000	0	15	1000000	0.000	0	15	1000000	0.000
Wb Left	47	1600	0.029	0	47	1600	0.029	0	49	1600	0.031	0	49	1600	0.031
Wb Thru	687	3200	0.262 *	73	760	3200	0.284 *	-20	694	3200	0.266 *	73	767	3200	0.289 *
Wb Right	150	0	-	0	150	0	-	0	156	0	-	0	156	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.594				0.617				0.608				0.630
LOS			A				B				B				B

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*
3 *Free-flow right-turn*

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INTERSECTION CAPACITY UTILIZATION

Brookshire Avenue-N. Somerset Ranch Road @ Gardendale Street

N-S St: Brookshire Avenue-N. Somerset Ranch Roa
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-24

Peak hr: PM
Annual Growth: 1%

CITY OF DOWNEY

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	2	0	0.001	0	2	0	0.001	0	2	0	0.001	0	2	0	0.001
Nb Thru	218	1600	0.152 *	0	218	1600	0.152 *	0	227	1600	0.158 *	0	227	1600	0.158 *
Nb Right	23	0	-	0	23	0	-	0	24	0	-	0	24	0	-
Sb Left	109	1600	0.068 *	0	109	1600	0.068 *	0	113	1600	0.071 *	0	113	1600	0.071 *
Sb Thru	115	1600	0.072	0	115	1600	0.072	0	120	1600	0.075	0	120	1600	0.075
Sb Right	68	1600	0.043	0	68	1600	0.043	0	71	1600	0.044	0	71	1600	0.044
Eb Left	77	1600	0.048 *	0	77	1600	0.048 *	0	80	1600	0.050 *	0	80	1600	0.050 *
Eb Thru	589	3200	0.184	59	648	3200	0.203	-17	596	3200	0.186	59	655	3200	0.205
Eb Right [3]	5	1000000	0.000	0	5	1000000	0.000	0	5	1000000	0.000	0	5	1000000	0.000
Wb Left	60	1600	0.038	0	60	1600	0.038	0	62	1600	0.039	0	62	1600	0.039
Wb Thru	564	3200	0.213 *	12	576	3200	0.217 *	1	588	3200	0.222 *	12	600	3200	0.225 *
Wb Right	117	0	-	0	117	0	-	0	122	0	-	0	122	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.581				0.585				0.600				0.604
LOS			A				A				A				B

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*
3 *Free-flow right-turn*

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INTERSECTION CAPACITY UTILIZATION

Lakewood Boulevard @ Imperial Highway

N-S St: Lakewood Boulevard
E-W St: Imperial Highway
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-25

Peak hr: AM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF DOWNEY

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	385	3200	0.120	0	385	3200	0.120 *	0	400	3200	0.125	0	400	3200	0.125
Nb Thru	1014	4800	0.274 *	0	1014	4800	0.274	0	1055	4800	0.287 *	0	1055	4800	0.287 *
Nb Right	299	0	-	0	299	0	-	14	325	0	-	0	325	0	-
Sb Left	165	3200	0.052 *	0	165	3200	0.052	1	173	3200	0.054 *	0	173	3200	0.054 *
Sb Thru	828	4800	0.201	0	828	4800	0.207 *	0	861	4800	0.208	0	861	4800	0.213
Sb Right	137	0	-	27	164	0	-	-6	136	0	-	27	163	0	-
Eb Left	113	1600	0.071	4	117	1600	0.073	3	121	1600	0.075	4	125	1600	0.078
Eb Thru	1096	4800	0.228 *	9	1105	4800	0.230 *	20	1160	4800	0.242 *	9	1169	4800	0.244 *
Eb Right [3]	365	1000000	0.000	0	365	1000000	0.000	0	380	1000000	0.000	0	380	1000000	0.000
Wb Left	140	1600	0.088 *	0	140	1600	0.088 *	6	152	1600	0.095 *	0	152	1600	0.095 *
Wb Thru	800	4800	0.185	64	864	4800	0.199	-10	822	4800	0.191	64	886	4800	0.204
Wb Right	89	0	-	0	89	0	-	0	93	0	-	0	93	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.741				0.745				0.778				0.780
LOS			C				C				C				C

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*
3 *Free-flow right-turn*

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INTERSECTION CAPACITY UTILIZATION

Lakewood Boulevard @ Imperial Highway

N-S St: Lakewood Boulevard
E-W St: Imperial Highway
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-25

Peak hr: PM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF DOWNEY

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	330	3200	0.103 *	0	330	3200	0.103 *	0	343	3200	0.107 *	0	343	3200	0.107 *
Nb Thru	965	4800	0.232	0	965	4800	0.232	0	1004	4800	0.244	0	1004	4800	0.244
Nb Right	149	0	-	0	149	0	-	13	168	0	-	0	168	0	-
Sb Left	81	3200	0.025	0	81	3200	0.025	-1	83	3200	0.026	0	83	3200	0.026
Sb Thru	834	4800	0.210 *	0	834	4800	0.211 *	0	867	4800	0.220 *	0	867	4800	0.221 *
Sb Right	172	0	-	5	177	0	-	8	187	0	-	5	192	0	-
Eb Left	197	1600	0.123	22	219	1600	0.137	-1	204	1600	0.127	22	226	1600	0.141
Eb Thru	962	4800	0.200 *	51	1013	4800	0.211 *	-2	998	4800	0.208 *	51	1049	4800	0.219 *
Eb Right [3]	360	1000000	0.000	0	360	1000000	0.000	0	374	1000000	0.000	0	374	1000000	0.000
Wb Left	304	1600	0.190 *	0	304	1600	0.190 *	20	336	1600	0.210 *	0	336	1600	0.210 *
Wb Thru	891	4800	0.204	11	902	4800	0.207	26	953	4800	0.218	11	964	4800	0.220
Wb Right	90	0	-	0	90	0	-	0	94	0	-	0	94	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.803				0.815				0.845				0.857
LOS			D				D				D				D

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*
3 *Free-flow right-turn*

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INTERSECTION CAPACITY UTILIZATION

Lakewood Boulevard @ Gardendale Street

N-S St: Lakewood Boulevard
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-26

Peak hr: AM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF DOWNEY

	2017 EXIST. TRAFFIC				2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C		Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio		Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	215	1600	0.134	*	27	242	1600	0.151	* -9	215	1600	0.134	* 27	242	1600	0.151 *
Nb Thru	795	3200	0.260		0	795	3200	0.260	14	841	3200	0.275	0	841	3200	0.275
Nb Right	38	0	-		0	38	0	-	0	40	0	-	0	40	0	-
Sb Left	71	1600	0.044		0	71	1600	0.044	0	74	1600	0.046	0	74	1600	0.046
Sb Thru	874	3200	0.273	*	0	874	3200	0.273	* 6	915	3200	0.286	* 0	915	3200	0.286 *
Sb Right	167	1600	0.104		0	167	1600	0.104	0	174	1600	0.109	0	174	1600	0.109
Eb Left	103	1600	0.064		0	103	1600	0.064	0	107	1600	0.067	0	107	1600	0.067
Eb Thru	539	3200	0.253	*	6	545	3200	0.256	* 0	561	3200	0.262	* 6	567	3200	0.265 *
Eb Right	269	0	-		4	273	0	-	-3	277	0	-	4	281	0	-
Wb Left	56	1600	0.035	*	0	56	1600	0.035	* 0	58	1600	0.036	* 0	58	1600	0.036 *
Wb Thru	536	3200	0.209		46	582	3200	0.223	-11	546	3200	0.214	46	592	3200	0.228
Wb Right	132	0	-		0	132	0	-	0	137	0	-	0	137	0	-
Yellow Allowance:			0.100	*				0.100	*			0.100	*			0.100 *
ICU			0.795					0.815				0.818				0.838
LOS			C					D				D				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Lakewood Boulevard @ Gardendale Street

N-S St: Lakewood Boulevard
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-26

Peak hr: PM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF DOWNEY

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	179	1600	0.112 *	5	184	1600	0.115 *	-2	184	1600	0.115 *	5	189	1600	0.118 *
Nb Thru	813	3200	0.275	0	813	3200	0.275	13	859	3200	0.290	0	859	3200	0.290
Nb Right	68	0	-	0	68	0	-	0	71	0	-	0	71	0	-
Sb Left	111	1600	0.069	0	111	1600	0.069	0	115	1600	0.072	0	115	1600	0.072
Sb Thru	921	3200	0.288 *	0	921	3200	0.288 *	20	978	3200	0.306 *	0	978	3200	0.306 *
Sb Right	307	1600	0.192	0	307	1600	0.192	0	319	1600	0.200	0	319	1600	0.200
Eb Left	115	1600	0.072	0	115	1600	0.072	0	120	1600	0.075	0	120	1600	0.075
Eb Thru	553	3200	0.230 *	37	590	3200	0.248 *	-9	566	3200	0.234 *	37	603	3200	0.252 *
Eb Right	183	0	-	22	205	0	-	-8	182	0	-	22	204	0	-
Wb Left	59	1600	0.037 *	0	59	1600	0.037 *	0	61	1600	0.038 *	0	61	1600	0.038 *
Wb Thru	361	3200	0.146	8	369	3200	0.148	3	378	3200	0.152	8	386	3200	0.155
Wb Right	105	0	-	0	105	0	-	0	109	0	-	0	109	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.767				0.788				0.793				0.814
LOS			C				C				C				D

** Key conflicting movement as a part of ICU*
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2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Erickson Avenue @ Amigos Avenue

N-S St: Erickson Avenue
E-W St: Amigos Avenue
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-27

Peak hr: AM
Annual Growth: 1%

CITY OF DOWNEY

Date: 10/03/2018
Date of Count: 2018
Projection Year: 2021

	2018 EXIST. TRAFFIC			2018 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	40	1600	0.025 *	13	53	1600	0.033 *	0	41	1600	0.026 *	13	54	1600	0.034 *
Nb Thru	36	3200	0.012	44	80	3200	0.026	0	37	3200	0.012	44	81	3200	0.026
Nb Right	2	0	-	0	2	0	-	0	2	0	-	0	2	0	-
Sb Left	42	1600	0.026	0	42	1600	0.026	0	43	1600	0.027	0	43	1600	0.027
Sb Thru	79	3200	0.038 *	320	399	3200	0.138 *	1	82	3200	0.040 *	320	402	3200	0.140 *
Sb Right	44	0	-	0	44	0	-	0	45	0	-	0	45	0	-
Eb Left	8	1600	0.005	0	8	1600	0.005	0	8	1600	0.005	0	8	1600	0.005
Eb Thru	13	3200	0.013 *	0	13	3200	0.042 *	0	13	3200	0.014 *	0	13	3200	0.042 *
Eb Right	29	0	-	91	120	0	-	0	30	0	-	91	121	0	-
Wb Left	0	1600	0.000 *	0	0	1600	0.000 *	0	0	1600	0.000 *	0	0	1600	0.000 *
Wb Thru	7	3200	0.005	0	7	3200	0.005	0	7	3200	0.005	0	7	3200	0.005
Wb Right	9	0	-	0	9	0	-	0	9	0	-	0	9	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.177				0.313				0.179				0.316
LOS			A				A				A				A

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Erickson Avenue @ Amigos Avenue

N-S St: Erickson Avenue
E-W St: Amigos Avenue
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-27

Peak hr: PM
Annual Growth: 1%

CITY OF DOWNEY

Date: 10/03/2018
Date of Count: 2018
Projection Year: 2021

	2018 EXIST. TRAFFIC			2018 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	25	1600	0.016	73	98	1600	0.061	2	28	1600	0.017 *	73	101	1600	0.063
Nb Thru	72	3200	0.023 *	257	329	3200	0.103 *	6	80	3200	0.026	257	337	3200	0.106 *
Nb Right	2	0	-	0	2	0	-	0	2	0	-	0	2	0	-
Sb Left	15	1600	0.009 *	0	15	1600	0.009 *	0	15	1600	0.010	0	15	1600	0.010 *
Sb Thru	40	3200	0.015	53	93	3200	0.032	11	52	3200	0.019 *	53	105	3200	0.035
Sb Right	8	0	-	0	8	0	-	0	8	0	-	0	8	0	-
Eb Left	19	1600	0.012	0	19	1600	0.012	0	20	1600	0.012	0	20	1600	0.012
Eb Thru	17	3200	0.020 *	0	17	3200	0.025 *	0	18	3200	0.022 *	0	18	3200	0.026 *
Eb Right	47	0	-	15	62	0	-	3	51	0	-	15	66	0	-
Wb Left	1	1600	0.001 *	0	1	1600	0.001 *	0	1	1600	0.001 *	0	1	1600	0.001 *
Wb Thru	8	3200	0.006	0	8	3200	0.006	0	8	3200	0.006	0	8	3200	0.006
Wb Right	12	0	-	0	12	0	-	0	12	0	-	0	12	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.153				0.238				0.158				0.243
LOS			A				A				A				A

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*

APPENDIX C

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

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.

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INTERSECTION CAPACITY UTILIZATION

Wright Road @ I-710 Southbound Off-Ramp-Abbott Road

N-S St: Wright Road
E-W St: I-710 Southbound Off-Ramp-Abbott Road
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-2

Peak hr: AM
Annual Growth: 1%

CITY OF SOUTH GATE

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	338	1600	0.211 *	0	338	1600	0.211 *	0	352	1600	0.220 *	0	352	1600	0.220 *
Nb Thru	519	3200	0.162	0	519	3200	0.162	5	545	3200	0.170	0	545	3200	0.170
Nb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Sb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Thru	452	3200	0.146 *	0	452	3200	0.146 *	2	472	3200	0.152 *	0	472	3200	0.152 *
Sb Right	15	0	-	0	15	0	-	0	16	0	-	0	16	0	-
Eb Left	9	1600	0.006	0	9	1600	0.006	0	9	1600	0.006	0	9	1600	0.006
Eb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Right [3]	671	1600	0.208 *	0	671	1600	0.208 *	0	698	1600	0.216 *	0	698	1600	0.216 *
Wb Left	52	0	0.016 *	46	98	0	0.031 *	-14	40	0	0.013 *	46	86	0	0.027 *
Wb Thru	506	3200	0.185	0	506	3200	0.200	0	526	3200	0.188	0	526	3200	0.203
Wb Right	35	0	-	0	35	0	-	0	36	0	-	0	36	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.682				0.696				0.701				0.715
LOS			B				B				C				C

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*
3 *The eastbound right-turn lane has an overlapping phase with northbound left-turn phase.*

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INTERSECTION CAPACITY UTILIZATION

Wright Road @ I-710 Southbound Off-Ramp-Abbott Road

N-S St: Wright Road
E-W St: I-710 Southbound Off-Ramp-Abbott Road
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-2

Peak hr: PM
Annual Growth: 1%

CITY OF SOUTH GATE

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	440	1600	0.275 *	0	440	1600	0.275 *	0	458	1600	0.286 *	0	458	1600	0.286 *
Nb Thru	680	3200	0.213	0	680	3200	0.213	3	710	3200	0.222	0	710	3200	0.222
Nb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Sb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Thru	474	3200	0.151 *	0	474	3200	0.151 *	5	498	3200	0.159 *	0	498	3200	0.159 *
Sb Right	9	0	-	0	9	0	-	0	9	0	-	0	9	0	-
Eb Left	17	1600	0.011 *	0	17	1600	0.011 *	0	18	1600	0.011 *	0	18	1600	0.011 *
Eb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Right [3]	522	1600	0.051	0	522	1600	0.051	0	543	1600	0.053	0	543	1600	0.053
Wb Left	55	0	0.017	8	63	0	0.020	-4	53	0	0.017	8	61	0	0.019
Wb Thru	397	3200	0.158 *	0	397	3200	0.160 *	0	413	3200	0.163 *	0	413	3200	0.165 *
Wb Right	53	0	-	0	53	0	-	0	55	0	-	0	55	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.694				0.697				0.718				0.721
LOS			B				B				C				C

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*
3 *The eastbound right-turn lane has an overlapping phase with northbound left-turn phase.*

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INTERSECTION CAPACITY UTILIZATION

Wright Road @ Imperial Highway

N-S St: Wright Road
E-W St: Imperial Highway
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-3

Peak hr: AM
Annual Growth: 1%

CITY OF SOUTH GATE

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

	2017 EXIST. TRAFFIC				2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT				2021 W/REGIONAL MITIGATION			
	1	2	V/C		Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio		Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	14	0	0.004		0	14	0	0.004	0	15	0	0.005	0	15	0	0.005	0	15	0	0.005
Nb Thru	53	3200	0.175	*	0	53	3200	0.175	* 0	55	3200	0.182	* 0	55	3200	0.182	* 0	55	3200	0.182 *
Nb Right	493	0	-		0	493	0	-	0	513	0	-	0	513	0	-	0	513	0	-
Sb Left	1162	3200	0.363	*	46	1208	3200	0.378	* -12	1196	3200	0.374	* 46	1242	3200	0.388	* 0	1242	3200	0.388 *
Sb Thru	36	0	0.000		0	36	0	0.000	0	37	0	0.000	0	37	0	0.000	0	37	0	0.000
Sb Right	46	1600	0.029		0	46	1600	0.029	0	48	1600	0.030	0	48	1600	0.030	0	48	1600	0.030
Eb Left	7	1600	0.004		0	7	1600	0.004	0	7	1600	0.005	0	7	1600	0.005	0	7	1600	0.005 *
Eb Thru	1302	3200	0.410	*	91	1393	3200	0.439	* -26	1328	3200	0.419	* 91	1419	3200	0.447	* 0	1419	4800	0.298
Eb Right	11	0	-		0	11	0	-	0	11	0	-	0	11	0	-	0	11	0	-
Wb Left	0	0	0.000	*	0	0	0	0.000	* 0	0	0	0.000	* 0	0	0	0.000	* 0	0	0	0.000
Wb Thru	1005	3200	0.314		13	1018	3200	0.318	-6	1039	3200	0.325	13	1052	3200	0.329	0	1052	3200	0.329 *
Wb Right [3]	776	1600	0.122		0	776	1600	0.108	5	812	1600	0.134	0	812	1600	0.119	0	812	1600	0.119
Yellow Allowance:			0.100	*				0.100	*			0.100	*			0.100	*			0.100 *
ICU			1.048					1.091				1.075				1.117				1.004
LOS			F					F				F				F				F

02:54 PM

** Key conflicting movement as a part of ICU*
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3 The westbound right-turn lane has an overlapping phase with southbound left-turn phase.

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INTERSECTION CAPACITY UTILIZATION

Wright Road @ Imperial Highway

N-S St: Wright Road
E-W St: Imperial Highway
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-3

Peak hr: PM
Annual Growth: 1%

CITY OF SOUTH GATE

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT				2021 W/REGIONAL MITIGATION			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	28	0	0.009	0	28	0	0.009	0	29	0	0.009	0	29	0	0.009	0	29	0	0.009
Nb Thru	55	3200	0.118 *	0	55	3200	0.118 *	0	57	3200	0.123 *	0	57	3200	0.123 *	0	57	3200	0.123 *
Nb Right	296	0	-	0	296	0	-	0	308	0	-	0	308	0	-	0	308	0	-
Sb Left	957	3200	0.299 *	8	965	3200	0.302 *	1	996	3200	0.311 *	8	1004	3200	0.314 *	0	1004	3200	0.314 *
Sb Thru	93	0	0.000	0	93	0	0.000	0	97	0	0.000	0	97	0	0.000	0	97	0	0.000
Sb Right	21	1600	0.013	0	21	1600	0.013	0	22	1600	0.014	0	22	1600	0.014	0	22	1600	0.014
Eb Left	10	1600	0.006	0	10	1600	0.006	0	10	1600	0.007	0	10	1600	0.007	0	10	1600	0.007 *
Eb Thru	1226	3200	0.387 *	15	1241	3200	0.392 *	-4	1271	3200	0.401 *	15	1286	3200	0.406 *	0	1286	4800	0.271
Eb Right	12	0	-	0	12	0	-	0	12	0	-	0	12	0	-	0	12	0	-
Wb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000
Wb Thru	998	3200	0.312	73	1071	3200	0.335	-24	1014	3200	0.317	73	1087	3200	0.340	0	1087	3200	0.340
Wb Right [3]	1060	1600	0.363	0	1060	1600	0.361	3	1105	1600	0.380	0	1105	1600	0.377	0	1105	1600	0.377 *
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.904				0.912				0.936				0.943				0.921
LOS			E				E				E				E				E

02:54 PM

** Key conflicting movement as a part of ICU*
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3 The westbound right-turn lane has an overlapping phase with southbound left-turn phase.

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INTERSECTION CAPACITY UTILIZATION

Ruchti Road-Garfield Place @ Imperial Highway

N-S St: Ruchti Road-Garfield Place
E-W St: Imperial Highway
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-4

Peak hr: AM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	600	3200	0.188 *	11	611	3200	0.191 *	0	624	3200	0.195 *	11	635	3200	0.198 *
Nb Thru	31	1600	0.023	0	31	1600	0.023	0	32	1600	0.023	0	32	1600	0.023
Nb Right	5	0	-	0	5	0	-	0	5	0	-	0	5	0	-
Sb Left	16	0	0.010	0	16	0	0.010	0	17	0	0.010	0	17	0	0.010
Sb Thru	14	1600	0.028 *	0	14	1600	0.028 *	0	15	1600	0.029 *	0	15	1600	0.029 *
Sb Right	14	0	-	0	14	0	-	0	15	0	-	0	15	0	-
Eb Left	32	1600	0.020	0	32	1600	0.020	0	33	1600	0.021	0	33	1600	0.021
Eb Thru	1816	4800	0.481 *	183	1999	4800	0.536 *	-48	1841	4800	0.490 *	183	2024	4800	0.545 *
Eb Right	493	0	-	82	575	0	-	0	513	0	-	82	595	0	-
Wb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Wb Thru	1706	4800	0.362	25	1731	4800	0.367	-5	1769	4800	0.375	25	1794	4800	0.381
Wb Right	31	0	-	0	31	0	-	0	32	0	-	0	32	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.796				0.855				0.814				0.873
LOS			C				D				D				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Ruchti Road-Garfield Place @ Imperial Highway

N-S St: Ruchti Road-Garfield Place
E-W St: Imperial Highway
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-4

Peak hr: PM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	421	3200	0.132 *	66	487	3200	0.152 *	2	440	3200	0.137 *	66	506	3200	0.158 *
Nb Thru	11	1600	0.022	0	11	1600	0.022	0	11	1600	0.023	0	11	1600	0.023
Nb Right	24	0	-	0	24	0	-	0	25	0	-	0	25	0	-
Sb Left	35	0	0.022	0	35	0	0.022	0	36	0	0.023	0	36	0	0.023
Sb Thru	23	1600	0.061 *	0	23	1600	0.061 *	0	24	1600	0.064 *	0	24	1600	0.064 *
Sb Right	40	0	-	0	40	0	-	0	42	0	-	0	42	0	-
Eb Left	22	1600	0.014	0	22	1600	0.014	0	23	1600	0.014	0	23	1600	0.014
Eb Thru	1646	4800	0.440 *	30	1676	4800	0.449 *	10	1722	4800	0.460 *	30	1752	4800	0.469 *
Eb Right	464	0	-	14	478	0	-	3	486	0	-	14	500	0	-
Wb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Wb Thru	1591	4800	0.338	147	1738	4800	0.369	-40	1615	4800	0.343	147	1762	4800	0.374
Wb Right	31	0	-	0	31	0	-	0	32	0	-	0	32	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.732				0.762				0.761				0.791
LOS			C				C				C				C

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*

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INTERSECTION CAPACITY UTILIZATION

Garfield Avenue @ Imperial Highway

N-S St: Garfield Avenue
E-W St: Imperial Highway
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-5

Peak hr: AM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	62	1600	0.039	0	62	1600	0.039	7	71	1600	0.045	0	71	1600	0.045
Nb Thru	826	3200	0.310 *	0	826	3200	0.310 *	23	882	3200	0.320 *	0	882	3200	0.320 *
Nb Right	166	0	-	0	166	0	-	-32	141	0	-	0	141	0	-
Sb Left	116	3200	0.036 *	0	116	3200	0.036 *	1	122	3200	0.038 *	0	122	3200	0.038 *
Sb Thru	401	3200	0.125	0	401	3200	0.125	6	423	3200	0.132	0	423	3200	0.132
Sb Right	325	1600	0.203	0	325	1600	0.203	2	340	1600	0.213	0	340	1600	0.213
Eb Left	186	1600	0.116 *	0	186	1600	0.116	5	198	1600	0.124 *	0	198	1600	0.124 *
Eb Thru	1568	4800	0.333	183	1751	4800	0.371 *	-64	1567	4800	0.334	183	1750	4800	0.372
Eb Right	29	0	-	0	29	0	-	7	37	0	-	0	37	0	-
Wb Left	150	1600	0.094	0	150	1600	0.094 *	-14	142	1600	0.089	0	142	1600	0.089
Wb Thru	1433	4800	0.336 *	25	1458	4800	0.341	-25	1465	4800	0.344 *	25	1490	4800	0.350 *
Wb Right	181	0	-	0	181	0	-	0	188	0	-	0	188	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.899				0.911				0.926				0.931
LOS			D				E				E				E

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Garfield Avenue @ Imperial Highway

N-S St: Garfield Avenue
E-W St: Imperial Highway
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-5

Peak hr: PM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	74	1600	0.046	0	74	1600	0.046	9	86	1600	0.054	0	86	1600	0.054
Nb Thru	485	3200	0.215 *	0	485	3200	0.215 *	14	518	3200	0.224 *	0	518	3200	0.224 *
Nb Right	202	0	-	0	202	0	-	-11	199	0	-	0	199	0	-
Sb Left	140	3200	0.044 *	0	140	3200	0.044 *	-1	145	3200	0.045 *	0	145	3200	0.045 *
Sb Thru	487	3200	0.152	0	487	3200	0.152	22	528	3200	0.165	0	528	3200	0.165
Sb Right	299	1600	0.187	0	299	1600	0.187	5	316	1600	0.197	0	316	1600	0.197
Eb Left	199	1600	0.124 *	0	199	1600	0.124 *	3	210	1600	0.131 *	0	210	1600	0.131 *
Eb Thru	1465	4800	0.309	30	1495	4800	0.315	-13	1511	4800	0.321	30	1541	4800	0.327
Eb Right	19	0	-	0	19	0	-	9	29	0	-	0	29	0	-
Wb Left	138	1600	0.086	0	138	1600	0.086	-33	111	1600	0.069	0	111	1600	0.069
Wb Thru	1254	4800	0.284 *	147	1401	4800	0.314 *	-60	1244	4800	0.282 *	147	1391	4800	0.313 *
Wb Right	107	0	-	0	107	0	-	0	111	0	-	0	111	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.766				0.797				0.783				0.814
LOS			C				C				C				D

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*

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INTERSECTION CAPACITY UTILIZATION

Garfield Avenue @ Gardendale Street

N-S St: Garfield Avenue
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-6

Peak hr: AM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC				2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C		Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio		Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	5	1600	0.003		0	5	1600	0.003	0	5	1600	0.003	0	5	1600	0.003
Nb Thru	921	3200	0.297	*	0	921	3200	0.340	* -40	918	3200	0.297	* 0	918	3200	0.339 *
Nb Right	30	0	-		137	167	0	-	0	31	0	-	137	168	0	-
Sb Left	415	3200	0.130	*	82	497	3200	0.155	* 5	437	3200	0.136	* 82	519	3200	0.162 *
Sb Thru	611	3200	0.201		0	611	3200	0.201	-2	633	3200	0.209	0	633	3200	0.209
Sb Right	33	0	-		0	33	0	-	0	34	0	-	0	34	0	-
Eb Left	73	1600	0.046	*	0	73	1600	0.046	* 0	76	1600	0.047	* 0	76	1600	0.047 *
Eb Thru	59	1600	0.044		0	59	1600	0.044	0	61	1600	0.046	0	61	1600	0.046
Eb Right	11	0	-		0	11	0	-	0	11	0	-	0	11	0	-
Wb Left	121	0	0.076		19	140	0	0.088	0	126	0	0.079	19	145	0	0.091
Wb Thru	34	1600	0.097		0	34	1600	0.109	* 0	35	1600	0.101	0	35	1600	0.113 *
Wb Right [3]	736	3200	0.100	*	11	747	3200	0.078	2	767	3200	0.103	* 11	778	3200	0.081
Yellow Allowance:			0.100	*				0.100	*			0.100	*			0.100 *
ICU			0.673					0.750				0.684				0.762
LOS			B					C				B				C

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*
3 *The westbound right-turn lane has an overlapping phase with southbound left-turn phase.*

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INTERSECTION CAPACITY UTILIZATION

Garfield Avenue @ Gardendale Street

N-S St: Garfield Avenue
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-6

Peak hr: PM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC				2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C		Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	
Movement	Volume	Capacity	Ratio		Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	
Nb Left	14	1600	0.009		0	14	1600	0.009	0	15	1600	0.009	0	15	1600	0.009	
Nb Thru	641	3200	0.216	*	0	641	3200	0.223	* -1	666	3200	0.226	* 0	666	3200	0.233	*
Nb Right	51	0	-		23	74	0	-	5	58	0	-	23	81	0	-	
Sb Left	484	3200	0.151	*	14	498	3200	0.156	* 6	509	3200	0.159	* 14	523	3200	0.164	*
Sb Thru	699	3200	0.237		0	699	3200	0.237	-36	691	3200	0.235	0	691	3200	0.235	
Sb Right	60	0	-		0	60	0	-	0	62	0	-	0	62	0	-	
Eb Left	41	1600	0.026	*	0	41	1600	0.026	* 0	43	1600	0.027	* 0	43	1600	0.027	*
Eb Thru	26	1600	0.022		0	26	1600	0.022	0	27	1600	0.023	0	27	1600	0.023	
Eb Right	9	0	-		0	9	0	-	0	9	0	-	0	9	0	-	
Wb Left	83	0	0.052		110	193	0	0.121	3	89	0	0.056	110	199	0	0.125	
Wb Thru	37	1600	0.075	*	0	37	1600	0.144	* 0	38	1600	0.080	* 0	38	1600	0.149	*
Wb Right [3]	347	3200	0.000		66	413	3200	0.000	7	368	3200	0.000	66	434	3200	0.000	
Yellow Allowance:			0.100	*				0.100	*			0.100	*			0.100	*
ICU			0.568					0.648				0.592				0.672	
LOS			A					B				A				B	

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*
3 *The westbound right-turn lane has an overlapping phase with southbound left-turn phase.*

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INTERSECTION CAPACITY UTILIZATION

Garfield Avenue @ Monroe Avenue

N-S St: Garfield Avenue
E-W St: Monroe Avenue
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-7

Peak hr: AM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	15	0	0.005	0	15	0	0.005	0	16	0	0.005	0	16	0	0.005
Nb Thru	947	3200	0.314 *	137	1084	3200	0.359 *	-37	948	3200	0.315 *	137	1085	3200	0.360 *
Nb Right	42	0	-	9	51	0	-	0	44	0	-	9	53	0	-
Sb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Sb Thru	732	3200	0.232	19	751	3200	0.238	-1	760	3200	0.241	19	779	3200	0.247
Sb Right	11	0	-	0	11	0	-	0	11	0	-	0	11	0	-
Eb Left	6	0	0.004	0	6	0	0.004	0	6	0	0.004	0	6	0	0.004
Eb Thru	13	1600	0.026 *	0	13	1600	0.026 *	0	14	1600	0.027 *	0	14	1600	0.027 *
Eb Right	23	0	-	0	23	0	-	0	24	0	-	0	24	0	-
Wb Left	5	0	0.003 *	1	6	0	0.004 *	0	5	0	0.003 *	1	6	0	0.004 *
Wb Thru	3	1600	0.006	0	3	1600	0.007	0	3	1600	0.007	0	3	1600	0.007
Wb Right	2	0	-	0	2	0	-	0	2	0	-	0	2	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.443				0.489				0.445				0.492
LOS			A				A				A				A

* *Key conflicting movement as a part of ICU*
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INTERSECTION CAPACITY UTILIZATION

Garfield Avenue @ Monroe Avenue

N-S St: Garfield Avenue
E-W St: Monroe Avenue
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-7

Peak hr: PM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	41	0	0.013 *	0	41	0	0.013 *	0	43	0	0.013 *	0	43	0	0.013 *
Nb Thru	693	3200	0.242	23	716	3200	0.250	5	726	3200	0.253	23	749	3200	0.261
Nb Right	41	0	-	2	43	0	-	0	43	0	-	2	45	0	-
Sb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Thru	717	3200	0.246 *	110	827	3200	0.281 *	-30	716	3200	0.247 *	110	826	3200	0.281 *
Sb Right	71	0	-	0	71	0	-	0	74	0	-	0	74	0	-
Eb Left	20	0	0.013	0	20	0	0.013	0	21	0	0.013	0	21	0	0.013
Eb Thru	8	1600	0.033 *	0	8	1600	0.033 *	0	8	1600	0.034 *	0	8	1600	0.034 *
Eb Right	24	0	-	0	24	0	-	0	25	0	-	0	25	0	-
Wb Left	6	0	0.004 *	7	13	0	0.008 *	0	6	0	0.004 *	7	13	0	0.008 *
Wb Thru	2	1600	0.006	0	2	1600	0.011	0	2	1600	0.007	0	2	1600	0.011
Wb Right	2	0	-	0	2	0	-	0	2	0	-	0	2	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.395				0.434				0.398				0.437
LOS			A				A				A				A

** Key conflicting movement as a part of ICU*
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INTERSECTION CAPACITY UTILIZATION

Monroe Avenue @ Gardendale Street

N-S St: Monroe Avenue
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-8

Peak hr: AM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	5	0	0.003	0	5	0	0.003	0	5	0	0.003	0	5	0	0.003
Nb Thru	0	1600	0.040 *	0	0	1600	0.046 *	0	0	1600	0.042 *	0	0	1600	0.047 *
Nb Right	59	0	-	9	68	0	-	0	61	0	-	9	70	0	-
Sb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Eb Thru	509	1600	0.319	219	728	1600	0.456	5	534	1600	0.335	219	753	1600	0.472
Eb Right	2	0	-	0	2	0	-	0	2	0	-	0	2	0	-
Wb Left	12	1600	0.008	1	13	1600	0.008	0	12	1600	0.008	1	13	1600	0.008
Wb Thru	923	1600	0.577 *	30	953	1600	0.596 *	2	962	1600	0.601 *	30	992	1600	0.620 *
Wb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.717				0.741				0.743				0.767
LOS			C				C				C				C

* *Key conflicting movement as a part of ICU*
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INTERSECTION CAPACITY UTILIZATION

Monroe Avenue @ Gardendale Street

N-S St: Monroe Avenue
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-8

Peak hr: PM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	1	0	0.001	0	1	0	0.001	0	1	0	0.001	0	1	0	0.001
Nb Thru	0	1600	0.034 *	0	0	1600	0.036 *	0	0	1600	0.036 *	0	0	1600	0.037 *
Nb Right	54	0	-	2	56	0	-	0	56	0	-	2	58	0	-
Sb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	0	0	0.000	0	0	0	0.000 *	0	0	0	0.000	0	0	0	0.000
Eb Thru	575	1600	0.359 *	36	611	1600	0.382	11	609	1600	0.381 *	36	645	1600	0.403 *
Eb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Wb Left	13	1600	0.008 *	7	20	1600	0.013	0	14	1600	0.008 *	7	21	1600	0.013 *
Wb Thru	456	1600	0.285	176	632	1600	0.395 *	9	483	1600	0.302	176	659	1600	0.412
Wb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.502				0.531				0.525				0.553
LOS			A				A				A				A

* *Key conflicting movement as a part of ICU*
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INTERSECTION CAPACITY UTILIZATION

Gafield Avenue @ Main Street

N-S St: Gafield Avenue
E-W St: Main Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-9

Peak hr: AM
Annual Growth: 1%

CITY OF SOUTH GATE

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	50	1600	0.031	0	50	1600	0.031	0	52	1600	0.033	0	52	1600	0.033
Nb Thru	935	3200	0.316 *	146	1081	3200	0.367 *	-37	935	3200	0.317 *	146	1081	3200	0.368 *
Nb Right	75	0	-	18	93	0	-	0	78	0	-	18	96	0	-
Sb Left	62	1600	0.039 *	0	62	1600	0.039 *	0	64	1600	0.040 *	0	64	1600	0.040 *
Sb Thru	653	3200	0.214	20	673	3200	0.220	0	679	3200	0.223	20	699	3200	0.229
Sb Right	32	0	-	0	32	0	-	0	33	0	-	0	33	0	-
Eb Left	25	0	0.016 *	0	25	0	0.016 *	0	26	0	0.016 *	0	26	0	0.016 *
Eb Thru	77	1600	0.079	0	77	1600	0.079	0	80	1600	0.082	0	80	1600	0.082
Eb Right	24	0	-	0	24	0	-	0	25	0	-	0	25	0	-
Wb Left	84	0	0.053	3	87	0	0.054	0	87	0	0.055	3	90	0	0.056
Wb Thru	159	1600	0.186 *	0	159	1600	0.188 *	0	165	1600	0.194 *	0	165	1600	0.196 *
Wb Right	55	0	-	0	55	0	-	0	57	0	-	0	57	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.656				0.709				0.667				0.720
LOS			B				C				B				C

** Key conflicting movement as a part of ICU*
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INTERSECTION CAPACITY UTILIZATION

Gafield Avenue @ Main Street

N-S St: Gafield Avenue
E-W St: Main Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-9

Peak hr: PM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC				2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1		2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume		Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	24		1600	0.015	0	24	1600	0.015	0	25	1600	0.016	0	25	1600	0.016
Nb Thru	724		3200	0.253 *	24	748	3200	0.261 *	5	758	3200	0.265 *	24	782	3200	0.273 *
Nb Right	85		0	-	3	88	0	-	1	89	0	-	3	92	0	-
Sb Left	62		1600	0.039 *	0	62	1600	0.039 *	0	64	1600	0.040 *	0	64	1600	0.040 *
Sb Thru	628		3200	0.205	117	745	3200	0.242	-30	623	3200	0.204	117	740	3200	0.240
Sb Right	28		0	-	0	28	0	-	0	29	0	-	0	29	0	-
Eb Left	18		0	0.011 *	0	18	0	0.011 *	0	19	0	0.012 *	0	19	0	0.012 *
Eb Thru	36		1600	0.041	0	36	1600	0.041	0	37	1600	0.043	0	37	1600	0.043
Eb Right	12		0	-	0	12	0	-	0	12	0	-	0	12	0	-
Wb Left	66		0	0.041	15	81	0	0.051	0	69	0	0.043	15	84	0	0.052
Wb Thru	38		1600	0.109 *	0	38	1600	0.118 *	0	40	1600	0.113 *	0	40	1600	0.122 *
Wb Right	70		0	-	0	70	0	-	0	73	0	-	0	73	0	-
Yellow Allowance:				0.100 *				0.100 *				0.100 *				0.100 *
ICU				0.512				0.529				0.530				0.548
LOS				A				A				A				A

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*

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INTERSECTION CAPACITY UTILIZATION

Old River School Road @ Imperial Highway

N-S St: Old River School Road
E-W St: Imperial Highway
Project: 5-17-0354-1/ Rancho Los Amigos South Campus
File: ICU-12

Peak hr: AM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	12	1600	0.008 *	6	18	1600	0.011 *	0	12	1600	0.008 *	6	18	1600	0.012 *
Nb Thru	91	3200	0.033	6	97	3200	0.034	0	95	3200	0.034	6	101	3200	0.036
Nb Right	13	0	-	0	13	0	-	0	14	0	-	0	14	0	-
Sb Left	317	1600	0.198	0	317	1600	0.198	1	331	1600	0.207	0	331	1600	0.207
Sb Thru	49	1600	0.031	46	95	1600	0.059	0	51	1600	0.032	46	97	1600	0.061
Sb Right	458	1600	0.286 *	0	458	1600	0.286 *	0	476	1600	0.298 *	0	476	1600	0.298 *
Eb Left	267	1600	0.167 *	0	267	1600	0.167 *	0	278	1600	0.174 *	0	278	1600	0.174 *
Eb Thru	1486	4800	0.310	137	1623	4800	0.338	-94	1451	4800	0.302	137	1588	4800	0.331
Eb Right	167	1600	0.104	46	213	1600	0.133	0	174	1600	0.109	46	220	1600	0.137
Wb Left	9	1600	0.006	0	9	1600	0.006	0	9	1600	0.006	0	9	1600	0.006
Wb Thru	1195	4800	0.323 *	19	1214	4800	0.326 *	-39	1204	4800	0.327 *	19	1223	4800	0.331 *
Wb Right	353	0	-	0	353	0	-	0	367	0	-	0	367	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.883				0.891				0.906				0.914
LOS			D				D				E				E

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Old River School Road @ Imperial Highway

N-S St: Old River School Road
E-W St: Imperial Highway
Project: 5-17-0354-1/ Rancho Los Amigos South Campus
File: ICU-12

Peak hr: PM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	83	1600	0.052 *	37	120	1600	0.075 *	1	87	1600	0.055 *	37	124	1600	0.078 *
Nb Thru	46	3200	0.021	37	83	3200	0.033	2	50	3200	0.023	37	87	3200	0.034
Nb Right	22	0	-	0	22	0	-	0	23	0	-	0	23	0	-
Sb Left	288	1600	0.180	0	288	1600	0.180	-1	299	1600	0.187	0	299	1600	0.187
Sb Thru	34	1600	0.021	8	42	1600	0.026	1	36	1600	0.023	8	44	1600	0.028
Sb Right	329	1600	0.206 *	0	329	1600	0.206 *	0	342	1600	0.214 *	0	342	1600	0.214 *
Eb Left	250	1600	0.156 *	0	250	1600	0.156 *	0	260	1600	0.163 *	0	260	1600	0.163 *
Eb Thru	1421	4800	0.296	23	1444	4800	0.301	-25	1453	4800	0.303	23	1476	4800	0.307
Eb Right	43	1600	0.027	8	51	1600	0.032	2	47	1600	0.029	8	55	1600	0.034
Wb Left	3	1600	0.002	0	3	1600	0.002	0	3	1600	0.002	0	3	1600	0.002
Wb Thru	1110	4800	0.275 *	110	1220	4800	0.298 *	-93	1061	4800	0.267 *	110	1171	4800	0.290 *
Wb Right	210	0	-	0	210	0	-	0	218	0	-	0	218	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.789				0.835				0.798				0.844
LOS			C				D				C				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Industrial Avenue @ Gardendale Street

N-S St: Industrial Avenue
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-15

Peak hr: AM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	35	0	0.022	0	35	0	0.022	0	36	0	0.023	0	36	0	0.023
Nb Thru	0	1600	0.025 *	0	0	1600	0.031 *	0	0	1600	0.026 *	0	0	1600	0.032 *
Nb Right	5	0	-	9	14	0	-	0	5	0	-	9	14	0	-
Sb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Eb Thru	565	1600	0.364	228	793	1600	0.507	6	594	1600	0.383	228	822	1600	0.525
Eb Right	18	0	-	0	18	0	-	0	19	0	-	0	19	0	-
Wb Left	6	1600	0.004	1	7	1600	0.004	0	6	1600	0.004	1	7	1600	0.005
Wb Thru	895	1600	0.559 *	31	926	1600	0.579 *	2	933	1600	0.583 *	31	964	1600	0.602 *
Wb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.684				0.709				0.709				0.734
LOS			B				C				C				C

* *Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Industrial Avenue @ Gardendale Street

N-S St: Industrial Avenue
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-15

Peak hr: PM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	25	0	0.016	0	25	0	0.016	0	26	0	0.016	0	26	0	0.016
Nb Thru	0	1600	0.021 *	0	0	1600	0.023 *	0	0	1600	0.022 *	0	0	1600	0.023 *
Nb Right	9	0	-	2	11	0	-	0	9	0	-	2	11	0	-
Sb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Thru	608	1600	0.398 *	38	646	1600	0.422 *	11	643	1600	0.421 *	38	681	1600	0.445 *
Eb Right	29	0	-	0	29	0	-	0	30	0	-	0	30	0	-
Wb Left	10	1600	0.006 *	7	17	1600	0.011 *	0	10	1600	0.007 *	7	17	1600	0.011 *
Wb Thru	461	1600	0.288	184	645	1600	0.403	9	488	1600	0.305	184	672	1600	0.420
Wb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.526				0.555				0.550				0.579
LOS			A				A				A				A

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*

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INTERSECTION CAPACITY UTILIZATION

Erickson Avenue @ Gardendale Street

N-S St: Erickson Avenue
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-16

Peak hr: AM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Sb Left	0	1600	0.000	36	36	1600	0.023	0	0	1600	0.000	36	36	1600	0.023
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	1600	0.000	33	33	1600	0.021	0	0	1600	0.000	33	33	1600	0.021
Eb Left	0	1600	0.000 *	237	237	1600	0.148 *	1	1	1600	0.001 *	237	238	1600	0.149 *
Eb Thru	572	1600	0.358	0	572	1600	0.358	5	600	1600	0.375	0	600	1600	0.375
Eb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Wb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Wb Thru	900	1600	0.563 *	0	900	1600	0.563 *	2	938	1600	0.586 *	0	938	1600	0.586 *
Wb Right	0	1600	0.000	265	265	1600	0.166	1	1	1600	0.001	265	266	1600	0.166
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.663				0.833				0.687				0.858
LOS			B				D				B				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Erickson Avenue @ Gardendale Street

N-S St: Erickson Avenue
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-16

Peak hr: PM
Annual Growth: 1%

CITY OF SOUTH GATE

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Sb Left	0	1600	0.000	213	213	1600	0.133	5	5	1600	0.003	213	218	1600	0.136
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	1600	0.000	191	191	1600	0.119	4	4	1600	0.003	191	195	1600	0.122
Eb Left	0	1600	0.000	39	39	1600	0.024	8	8	1600	0.005	39	47	1600	0.029
Eb Thru	599	1600	0.374 *	0	599	1600	0.374 *	3	626	1600	0.391 *	0	626	1600	0.391 *
Eb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Wb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Wb Thru	490	1600	0.306	0	490	1600	0.306	5	515	1600	0.322	0	515	1600	0.322
Wb Right	0	1600	0.000	44	44	1600	0.028	9	9	1600	0.006	44	53	1600	0.033
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.474				0.608				0.494				0.627
LOS			A				B				A				B

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*

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INTERSECTION CAPACITY UTILIZATION

Arizona Avenue @ Gardendale Street

N-S St: Arizona Avenue
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-17

Peak hr: AM
Annual Growth: 1%

CITY OF SOUTH GATE

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	19	0	0.012	9	28	0	0.018	0	20	0	0.012	9	29	0	0.018
Nb Thru	0	1600	0.029 *	0	0	1600	0.034 *	0	0	1600	0.030 *	0	0	1600	0.036 *
Nb Right	27	0	-	0	27	0	-	0	28	0	-	0	28	0	-
Sb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Eb Thru	568	1600	0.360	35	603	1600	0.383	5	596	1600	0.378	35	631	1600	0.400
Eb Right	8	0	-	1	9	0	-	0	8	0	-	1	9	0	-
Wb Left	23	1600	0.014	0	23	1600	0.014	0	24	1600	0.015	0	24	1600	0.015
Wb Thru	881	1600	0.551 *	256	1137	1600	0.711 *	3	919	1600	0.575 *	256	1175	1600	0.735 *
Wb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.679				0.845				0.704				0.870
LOS			B				D				C				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Arizona Avenue @ Gardendale Street

N-S St: Arizona Avenue
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-17

Peak hr: PM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	4	0	0.003	2	6	0	0.004	0	4	0	0.003	2	6	0	0.004
Nb Thru	0	1600	0.023 *	0	0	1600	0.024 *	0	0	1600	0.023 *	0	0	1600	0.025 *
Nb Right	32	0	-	0	32	0	-	0	33	0	-	0	33	0	-
Sb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Thru	596	1600	0.376 *	206	802	1600	0.509 *	8	628	1600	0.396 *	206	834	1600	0.529 *
Eb Right	6	0	-	7	13	0	-	0	6	0	-	7	13	0	-
Wb Left	16	1600	0.010 *	0	16	1600	0.010 *	0	17	1600	0.010 *	0	17	1600	0.010 *
Wb Thru	490	1600	0.306	42	532	1600	0.333	14	524	1600	0.327	42	566	1600	0.354
Wb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.509				0.643				0.530				0.664
LOS			A				B				A				B

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*

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INTERSECTION CAPACITY UTILIZATION

Industrial Avenue-Arizona Avenue @ Main Street

N-S St: Industrial Avenue-Arizona Avenue
E-W St: Main Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-18

Peak hr: AM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	30	0	0.009 *	0	30	0	0.009 *	0	31	0	0.010 *	0	31	0	0.010 *
Nb Thru	13	3200	0.023	0	13	3200	0.023	0	14	3200	0.023	0	14	3200	0.023
Nb Right	29	0	-	0	29	0	-	0	30	0	-	0	30	0	-
Sb Left	4	0	0.003	0	4	0	0.003	0	4	0	0.003	0	4	0	0.003
Sb Thru	14	1600	0.019 *	0	14	1600	0.021 *	0	15	1600	0.020 *	0	15	1600	0.022 *
Sb Right	13	0	-	3	16	0	-	0	14	0	-	3	17	0	-
Eb Left	16	0	0.010 *	18	34	0	0.021 *	0	17	0	0.010 *	18	35	0	0.022 *
Eb Thru	177	1600	0.135	0	177	1600	0.146	0	184	1600	0.140	0	184	1600	0.152
Eb Right	23	0	-	0	23	0	-	0	24	0	-	0	24	0	-
Wb Left	8	0	0.005	0	8	0	0.005	0	8	0	0.005	0	8	0	0.005
Wb Thru	243	1600	0.159 *	0	243	1600	0.159 *	0	253	1600	0.166 *	0	253	1600	0.166 *
Wb Right	4	0	-	0	4	0	-	0	4	0	-	0	4	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.298				0.311				0.306				0.319
LOS			A				A				A				A

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Industrial Avenue-Arizona Avenue @ Main Street

N-S St: Industrial Avenue-Arizona Avenue
E-W St: Main Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-18

Peak hr: PM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	22	0	0.007 *	0	22	0	0.007 *	0	23	0	0.007 *	0	23	0	0.007 *
Nb Thru	9	3200	0.018	0	9	3200	0.018	0	9	3200	0.019	0	9	3200	0.019
Nb Right	26	0	-	0	26	0	-	0	27	0	-	0	27	0	-
Sb Left	9	0	0.006	0	9	0	0.006	0	9	0	0.006	0	9	0	0.006
Sb Thru	8	1600	0.019 *	0	8	1600	0.028 *	0	8	1600	0.020 *	0	8	1600	0.029 *
Sb Right	13	0	-	15	28	0	-	0	14	0	-	15	29	0	-
Eb Left	10	0	0.006	3	13	0	0.008	1	11	0	0.007	3	14	0	0.009
Eb Thru	165	1600	0.123 *	0	165	1600	0.124 *	0	172	1600	0.128 *	0	172	1600	0.130 *
Eb Right	21	0	-	0	21	0	-	0	22	0	-	0	22	0	-
Wb Left	10	0	0.006 *	0	10	0	0.006 *	0	10	0	0.007 *	0	10	0	0.007 *
Wb Thru	140	1600	0.098	0	140	1600	0.098	0	146	1600	0.102	0	146	1600	0.102
Wb Right	7	0	-	0	7	0	-	0	7	0	-	0	7	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.254				0.266				0.261				0.272
LOS			A				A				A				A

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*

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INTERSECTION CAPACITY UTILIZATION

Paramount Boulevard @ Gardendale Street

N-S St: Paramount Boulevard
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-20

Peak hr: AM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC				2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C		Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio		Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	161	1600	0.101	*	137	298	1600	0.186	* 0	167	1600	0.105	* 137	304	1600	0.190 *
Nb Thru	942	3200	0.294		0	942	3200	0.294	-37	943	3200	0.295	0	943	3200	0.295
Nb Right	91	1600	0.057		0	91	1600	0.057	1	96	1600	0.060	0	96	1600	0.060
Sb Left	114	1600	0.071		0	114	1600	0.071	-15	104	1600	0.065	0	104	1600	0.065
Sb Thru	900	3200	0.281	*	0	900	3200	0.281	* -11	925	3200	0.289	* 0	925	3200	0.289 *
Sb Right	91	1600	0.057		0	91	1600	0.057	0	95	1600	0.059	0	95	1600	0.059
Eb Left	80	1600	0.050		0	80	1600	0.050	* 0	83	1600	0.052	0	83	1600	0.052 *
Eb Thru	434	3200	0.158	*	16	450	3200	0.169	5	456	3200	0.166	* 16	472	3200	0.177
Eb Right	71	0	-		19	90	0	-	0	74	0	-	19	93	0	-
Wb Left	150	1600	0.094	*	0	150	1600	0.094	1	157	1600	0.098	* 0	157	1600	0.098
Wb Thru	638	3200	0.199		119	757	3200	0.237	* 2	666	3200	0.208	119	785	3200	0.245 *
Wb Right	163	1600	0.102		0	163	1600	0.102	-37	133	1600	0.083	0	133	1600	0.083
Yellow Allowance:			0.100	*				0.100	*			0.100	*			0.100 *
ICU			0.733					0.854				0.758				0.877
LOS			C					D				C				D

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Paramount Boulevard @ Gardendale Street

N-S St: Paramount Boulevard
E-W St: Gardendale Street
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-20

Peak hr: PM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC				2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C		Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio		Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	79	1600	0.049		23	102	1600	0.064	5	87	1600	0.054	23	110	1600	0.069
Nb Thru	1046	3200	0.327	*	0	1046	3200	0.327	* -10	1078	3200	0.337	* 0	1078	3200	0.337 *
Nb Right	113	1600	0.071		0	113	1600	0.071	2	120	1600	0.075	0	120	1600	0.075
Sb Left	118	1600	0.074	*	0	118	1600	0.074	* -38	85	1600	0.053	* 0	85	1600	0.053 *
Sb Thru	946	3200	0.296		0	946	3200	0.296	-35	949	3200	0.297	0	949	3200	0.297
Sb Right	85	1600	0.053		0	85	1600	0.053	0	88	1600	0.055	0	88	1600	0.055
Eb Left	87	1600	0.054		0	87	1600	0.054	0	90	1600	0.057	0	90	1600	0.057
Eb Thru	459	3200	0.169	*	95	554	3200	0.233	* 5	482	3200	0.179	* 95	577	3200	0.243 *
Eb Right	83	0	-		110	193	0	-	3	89	0	-	110	199	0	-
Wb Left	106	1600	0.066	*	0	106	1600	0.066	* 2	112	1600	0.070	* 0	112	1600	0.070 *
Wb Thru	374	3200	0.117		20	394	3200	0.123	9	398	3200	0.124	20	418	3200	0.131
Wb Right	127	1600	0.079		0	127	1600	0.079	-14	118	1600	0.074	0	118	1600	0.074
Yellow Allowance:			0.100	*				0.100	*			0.100	*			0.100 *
ICU			0.736					0.800				0.739				0.803
LOS			C					C				C				D

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*

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INTERSECTION CAPACITY UTILIZATION

Paramount Boulevard @ N. Somerset Ranch Road

N-S St: Paramount Boulevard
E-W St: N. Somerset Ranch Road
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-21

Peak hr: AM
Annual Growth: 1%

Date: 10/04/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	213	3200	0.067 *	0	213	3200	0.067 *	0	222	3200	0.069 *	0	222	3200	0.069 *
Nb Thru	1001	3200	0.313	46	1047	3200	0.327	-6	1035	3200	0.323	46	1081	3200	0.338
Nb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Sb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Thru	801	3200	0.250	19	820	3200	0.256	-9	824	3200	0.258	19	843	3200	0.263
Sb Right	526	1600	0.329 *	0	526	1600	0.329 *	0	547	1600	0.342 *	0	547	1600	0.342 *
Eb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Eb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Wb Left	216	1600	0.135	0	216	1600	0.135	0	225	1600	0.140	0	225	1600	0.140
Wb Thru	504	1600	0.315 *	0	504	1600	0.315 *	0	524	1600	0.328 *	0	524	1600	0.328 *
Wb Right	354	1600	0.221	91	445	1600	0.278	-29	339	1600	0.212	91	430	1600	0.269
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.810				0.810				0.839				0.839
LOS			D				D				D				D

** Key conflicting movement as a part of ICU*
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INTERSECTION CAPACITY UTILIZATION

Paramount Boulevard @ N. Somerset Ranch Road

N-S St: Paramount Boulevard
E-W St: N. Somerset Ranch Road
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-21

Peak hr: PM
Annual Growth: 1%

Date: 10/04/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	175	3200	0.055	0	175	3200	0.055 *	0	182	3200	0.057	0	182	3200	0.057
Nb Thru	1047	3200	0.327 *	8	1055	3200	0.330	6	1095	3200	0.342 *	8	1103	3200	0.345 *
Nb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Sb Left	0	0	0.000 *	0	0	0	0.000	0	0	0	0.000 *	0	0	0	0.000 *
Sb Thru	781	3200	0.244	110	891	3200	0.278 *	-32	780	3200	0.244	110	890	3200	0.278
Sb Right	367	1600	0.229	0	367	1600	0.229	0	382	1600	0.239	0	382	1600	0.239
Eb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Eb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Wb Left	214	1600	0.134	0	214	1600	0.134	0	223	1600	0.139	0	223	1600	0.139
Wb Thru	363	1600	0.227 *	0	363	1600	0.227 *	0	378	1600	0.236 *	0	378	1600	0.236 *
Wb Right	317	1600	0.198	15	332	1600	0.208	-8	322	1600	0.201	15	337	1600	0.210
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.654				0.660				0.678				0.681
LOS			B				B				B				B

** Key conflicting movement as a part of ICU*
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2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Paramount Boulevard @ S. Somerset Ranch Road

N-S St: Paramount Boulevard
E-W St: S. Somerset Ranch Road
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-22

Peak hr: AM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Thru	804	3200	0.251 *	46	850	3200	0.266 *	-6	830	3200	0.259 *	46	876	3200	0.274 *
Nb Right	344	1600	0.215	0	344	1600	0.215	0	358	1600	0.224	0	358	1600	0.224
Sb Left	292	3200	0.091 *	13	305	3200	0.095 *	-11	293	3200	0.091 *	13	306	3200	0.096 *
Sb Thru	708	3200	0.221	6	714	3200	0.223	2	738	3200	0.231	6	744	3200	0.233
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	394	1600	0.246	0	394	1600	0.246	0	410	1600	0.256	0	410	1600	0.256
Eb Thru	644	3200	0.239	0	644	3200	0.239	0	670	3200	0.249	0	670	3200	0.249
Eb Right	121	0	-	0	121	0	-	0	126	0	-	0	126	0	-
Wb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Wb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Wb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.689				0.707				0.707				0.725
LOS			B				C				C				C

** Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Paramount Boulevard @ S. Somerset Ranch Road

N-S St: Paramount Boulevard
E-W St: S. Somerset Ranch Road
Project: 5-17-0354-1 / Rancho Los Amigos South Campus
File: ICU-22

Peak hr: PM
Annual Growth: 1%

Date: 10/03/2018
Date of Count: 2017
Projection Year: 2021

CITY OF SOUTH GATE

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 WITHOUT PROJECT				2021 W/PROJECT			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Thru	804	3200	0.251 *	8	812	3200	0.254 *	6	842	3200	0.263 *	8	850	3200	0.266 *
Nb Right	189	1600	0.118	0	189	1600	0.118	0	197	1600	0.123	0	197	1600	0.123
Sb Left	195	3200	0.061 *	73	268	3200	0.084 *	-27	176	3200	0.055 *	73	249	3200	0.078 *
Sb Thru	795	3200	0.248	37	832	3200	0.260	-3	824	3200	0.257	37	861	3200	0.269
Sb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	407	1600	0.254	0	407	1600	0.254	0	423	1600	0.265	0	423	1600	0.265
Eb Thru	724	3200	0.279 *	0	724	3200	0.279 *	0	753	3200	0.290 *	0	753	3200	0.290 *
Eb Right	169	0	-	0	169	0	-	0	176	0	-	0	176	0	-
Wb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Wb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Wb Right	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *				0.100 *
ICU			0.691				0.717				0.708				0.734
LOS			B				C				C				C

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*

APPENDIX D

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

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.

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INTERSECTION CAPACITY UTILIZATION

Garfield Avenue @ N. Somerset Ranch Road

N-S St:	Garfield Avenue	Peak hr:	AM	Date:	10/03/2018
E-W St:	N. Somerset Ranch Road	Annual Growth:	1%	Date of Count:	2017
Project:	5-17-0354-1 / Rancho Los Amigos South Campus			Projection Year:	2021
File:	ICU-10				

CITY OF PARAMOUNT

	2017 EXIST. TRAFFIC				2017 W/PROJECT SITE TRAFFIC				2021 W/RELATED PROJECTS			
	1	2	V/C		Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio		Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	157	2880	0.055		0	157	2880	0.055	0	163	2880	0.057
Nb Thru	1042	3200	0.326	*	164	1206	3200	0.377	* -48	1200	3200	0.375 *
Nb Right	0	0	-		0	0	0	-	0	0	0	-
Sb Left	0	0	0.000	*	0	0	0	0.000	* 0	0	0	0.000 *
Sb Thru	832	3200	0.260		6	838	3200	0.262	6	877	3200	0.274
Sb Right	290	1600	0.181		16	306	1600	0.191	-15	303	1600	0.189
Eb Left	0	0	0.000	*	0	0	0	0.000	* 0	0	0	0.000 *
Eb Thru	0	0	0.000		0	0	0	0.000	0	0	0	0.000
Eb Right	0	0	-		0	0	0	-	0	0	0	-
Wb Left	355	1600	0.222		0	355	1600	0.222	0	369	1600	0.231
Wb Thru	734	3200	0.263	*	0	734	3200	0.263	* 0	763	3200	0.273 *
Wb Right	107	0	-		0	107	0	-	0	111	0	-
Yellow Allowance:			0.100	*				0.100	*			0.100 *
ICU			0.688					0.740				0.748
LOS			B					C				C

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*

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INTERSECTION CAPACITY UTILIZATION

Garfield Avenue @ N. Somerset Ranch Road

N-S St:	Garfield Avenue	Peak hr:	PM	Date:	10/03/2018
E-W St:	N. Somerset Ranch Road	Annual Growth:	1%	Date of Count:	2017
Project:	5-17-0354-1 / Rancho Los Amigos South Campus			Projection Year:	2021
File:	ICU-10				

CITY OF PARAMOUNT

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 W/RELATED PROJECTS			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	291	2880	0.101	0	291	2880	0.101 *	0	303	2880	0.105
Nb Thru	900	3200	0.281 *	27	927	3200	0.290	-2	961	3200	0.300 *
Nb Right	0	0	-	0	0	0	-	0	0	0	-
Sb Left	0	0	0.000 *	0	0	0	0.000	0	0	0	0.000 *
Sb Thru	506	3200	0.158	37	543	3200	0.170	-7	556	3200	0.174
Sb Right	243	1600	0.152	95	338	1600	0.211 *	-36	312	1600	0.195
Eb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Eb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Right	0	0	-	0	0	0	-	0	0	0	-
Wb Left	221	1600	0.138	0	221	1600	0.138	0	230	1600	0.144
Wb Thru	593	3200	0.228 *	0	593	3200	0.228 *	0	617	3200	0.237 *
Wb Right	135	0	-	0	135	0	-	0	140	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *
ICU			0.609				0.640				0.637
LOS			B				B				B

* *Key conflicting movement as a part of ICU*

1 *Counts conducted by.* National Data & Surveying Services

2 *Capacity expressed in veh/hour of green*

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INTERSECTION CAPACITY UTILIZATION

Garfield Avenue @ S. Somerset Ranch Road

N-S St:	Garfield Avenue	Peak hr:	AM	Date:	10/03/2018
E-W St:	S. Somerset Ranch Road	Annual Growth:	1%	Date of Count:	2017
Project:	5-17-0354-1 / Rancho Los Amigos South Campus			Projection Year:	2021
File:	ICU-11				

CITY OF PARAMOUNT

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 W/RELATED PROJECTS			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Thru	845	3200	0.264 *	46	891	3200	0.278 *	-10	915	3200	0.286 *
Nb Right	322	1600	0.201	0	322	1600	0.201	0	335	1600	0.209
Sb Left	175	3200	0.055 *	0	175	3200	0.055 *	0	182	3200	0.057 *
Sb Thru	992	3200	0.310	6	998	3200	0.312	6	1044	3200	0.326
Sb Right	0	0	-	0	0	0	-	0	0	0	-
Eb Left	356	0	0.111	119	475	0	0.148	-37	452	0	0.141
Eb Thru	699	3200	0.330	0	699	3200	0.367 *	0	727	3200	0.369
Eb Right	567	1600	0.354 *	0	567	1600	0.354	0	590	1600	0.369 *
Wb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Wb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Wb Right	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *
ICU			0.773				0.800				0.811
LOS			C				C				D

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*

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INTERSECTION CAPACITY UTILIZATION

Garfield Avenue @ S. Somerset Ranch Road

N-S St:	Garfield Avenue	Peak hr:	PM	Date:	10/03/2018
E-W St:	S. Somerset Ranch Road	Annual Growth:	1%	Date of Count:	2017
Project:	5-17-0354-1 / Rancho Los Amigos South Campus			Projection Year:	2021
File:	ICU-11				

CITY OF PARAMOUNT

	2017 EXIST. TRAFFIC				2017 W/PROJECT SITE TRAFFIC				2021 W/RELATED PROJECTS			
	1		2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume		Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0		0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Thru	989		3200	0.309 *	8	997	3200	0.312 *	8	1045	3200	0.326 *
Nb Right	467		1600	0.292	0	467	1600	0.292	0	486	1600	0.304
Sb Left	81		3200	0.025 *	0	81	3200	0.025 *	0	84	3200	0.026 *
Sb Thru	651		3200	0.203	37	688	3200	0.215	-7	707	3200	0.221
Sb Right	0		0	-	0	0	0	-	0	0	0	-
Eb Left	217		0	0.068	20	237	0	0.074	-10	236	0	0.074
Eb Thru	777		3200	0.311	0	777	3200	0.317	0	808	3200	0.326
Eb Right	512		1600	0.320 *	0	512	1600	0.320 *	0	532	1600	0.333 *
Wb Left	0		0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Wb Thru	0		0	0.000	0	0	0	0.000	0	0	0	0.000
Wb Right	0		0	-	0	0	0	-	0	0	0	-
Yellow Allowance:				0.100 *				0.100 *				0.100 *
ICU				0.754				0.757				0.786
LOS				C				C				C

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*

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INTERSECTION CAPACITY UTILIZATION

Paramount Boulevard @ Gardendale Street

N-S St:	Paramount Boulevard	Peak hr:	AM	Date:	10/03/2018
E-W St:	Gardendale Street	Annual Growth:	1%	Date of Count:	2017
Project:	5-17-0354-1 / Rancho Los Amigos South Campus			Projection Year:	2021
File:	ICU-20				

CITY OF PARAMOUNT

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 W/RELATED PROJECTS			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	161	1600	0.101 *	137	298	1600	0.186 *	0	304	1600	0.190 *
Nb Thru	942	3200	0.294	0	942	3200	0.294	-37	943	3200	0.295
Nb Right	91	1600	0.057	0	91	1600	0.057	1	96	1600	0.060
Sb Left	114	1600	0.071	0	114	1600	0.071	-15	104	1600	0.065
Sb Thru	900	3200	0.281 *	0	900	3200	0.281 *	-11	925	3200	0.289 *
Sb Right	91	1600	0.057	0	91	1600	0.057	0	95	1600	0.059
Eb Left	80	1600	0.050	0	80	1600	0.050 *	0	83	1600	0.052 *
Eb Thru	434	3200	0.158 *	16	450	3200	0.169	5	472	3200	0.177
Eb Right	71	0	-	19	90	0	-	0	93	0	-
Wb Left	150	1600	0.094 *	0	150	1600	0.094	1	157	1600	0.098
Wb Thru	638	3200	0.199	119	757	3200	0.237 *	2	785	3200	0.245 *
Wb Right	163	1600	0.102	0	163	1600	0.102	-37	133	1600	0.083
Yellow Allowance:			0.100 *				0.100 *				0.100 *
ICU			0.733				0.854				0.877
LOS			C				D				D

* *Key conflicting movement as a part of ICU*

1 Counts conducted by. National Data & Surveying Services

2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Paramount Boulevard @ Gardendale Street

N-S St:	Paramount Boulevard	Peak hr:	PM	Date:	10/03/2018
E-W St:	Gardendale Street	Annual Growth:	1%	Date of Count:	2017
Project:	5-17-0354-1 / Rancho Los Amigos South Campus			Projection Year:	2021
File:	ICU-20				

CITY OF PARAMOUNT

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 W/RELATED PROJECTS			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	79	1600	0.049	23	102	1600	0.064	5	110	1600	0.069
Nb Thru	1046	3200	0.327 *	0	1046	3200	0.327 *	-10	1078	3200	0.337 *
Nb Right	113	1600	0.071	0	113	1600	0.071	2	120	1600	0.075
Sb Left	118	1600	0.074 *	0	118	1600	0.074 *	-38	85	1600	0.053 *
Sb Thru	946	3200	0.296	0	946	3200	0.296	-35	949	3200	0.297
Sb Right	85	1600	0.053	0	85	1600	0.053	0	88	1600	0.055
Eb Left	87	1600	0.054	0	87	1600	0.054	0	90	1600	0.057
Eb Thru	459	3200	0.169 *	95	554	3200	0.233 *	5	577	3200	0.243 *
Eb Right	83	0	-	110	193	0	-	3	199	0	-
Wb Left	106	1600	0.066 *	0	106	1600	0.066 *	2	112	1600	0.070 *
Wb Thru	374	3200	0.117	20	394	3200	0.123	9	418	3200	0.131
Wb Right	127	1600	0.079	0	127	1600	0.079	-14	118	1600	0.074
Yellow Allowance:			0.100 *				0.100 *				0.100 *
ICU			0.736				0.800				0.803
LOS			C				C				D

* *Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Downey Avenue @ Gardendale Street

N-S St:	Downey Avenue	Peak hr:	AM	Date:	10/03/2018
E-W St:	Gardendale Street	Annual Growth:	1%	Date of Count:	2017
Project:	5-17-0354-1 / Rancho Los Amigos South Campus			Projection Year:	2021
File:	ICU-23				

CITY OF PARAMOUNT

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 W/RELATED PROJECTS			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	138	1600	0.086	46	184	1600	0.115 *	-14	176	1600	0.110 *
Nb Thru	400	3200	0.134 *	0	400	3200	0.134	1	417	3200	0.140
Nb Right	30	0	-	0	30	0	-	0	31	0	-
Sb Left	143	1600	0.089 *	0	143	1600	0.089	0	149	1600	0.093
Sb Thru	328	3200	0.132	0	328	3200	0.132 *	1	342	3200	0.137 *
Sb Right	94	0	-	0	94	0	-	0	98	0	-
Eb Left	62	1600	0.039 *	0	62	1600	0.039 *	0	64	1600	0.040 *
Eb Thru	516	3200	0.189	10	526	3200	0.194	-3	544	3200	0.199
Eb Right	89	0	-	6	95	0	-	-6	93	0	-
Wb Left	48	1600	0.030	0	48	1600	0.030	0	50	1600	0.031
Wb Thru	644	3200	0.229 *	73	717	3200	0.252 *	-20	723	3200	0.254 *
Wb Right	88	0	-	0	88	0	-	0	92	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *
ICU			0.591				0.637				0.642
LOS			A				B				B

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*

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INTERSECTION CAPACITY UTILIZATION

Downey Avenue @ Gardendale Street

N-S St:	Downey Avenue	Peak hr:	PM	Date:	10/03/2018
E-W St:	Gardendale Street	Annual Growth:	1%	Date of Count:	2017
Project:	5-17-0354-1 / Rancho Los Amigos South Campus			Projection Year:	2021
File:	ICU-23				

CITY OF PARAMOUNT

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 W/RELATED PROJECTS			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	130	1600	0.081	8	138	1600	0.086	-4	139	1600	0.087
Nb Thru	523	3200	0.178 *	0	523	3200	0.178 *	1	545	3200	0.186 *
Nb Right	47	0	-	0	47	0	-	0	49	0	-
Sb Left	100	1600	0.063 *	0	100	1600	0.063 *	0	104	1600	0.065 *
Sb Thru	349	3200	0.130	0	349	3200	0.130	1	364	3200	0.136
Sb Right	67	0	-	0	67	0	-	0	70	0	-
Eb Left	75	1600	0.047 *	0	75	1600	0.047	0	78	1600	0.049
Eb Thru	556	3200	0.197	59	615	3200	0.227 *	-17	620	3200	0.225 *
Eb Right	73	0	-	37	110	0	-	-14	99	0	-
Wb Left	38	1600	0.024	0	38	1600	0.024 *	0	40	1600	0.025 *
Wb Thru	462	3200	0.178 *	12	474	3200	0.181	1	493	3200	0.189
Wb Right	106	0	-	0	106	0	-	0	110	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *
ICU			0.565				0.591				0.600
LOS			A				A				A

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*

APPENDIX E

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

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.

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INTERSECTION CAPACITY UTILIZATION

Erickson Avenue @ W. Imperial Highway

N-S St:	Erickson Avenue	Peak hr:	AM	Date:	10/03/2018
E-W St:	W. Imperial Highway	Annual Growth:	1%	Date of Count:	2017
Project:	5-17-0354-1 / Rancho Los Amigos South Campus			Projection Year:	2021
File:	ICU-13				

COUNTY OF LOS ANGELES

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 W/RELATED PROJECTS			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	31	2880	0.011 *	19	50	2880	0.017 *	0	51	2880	0.018 *
Nb Thru	40	1600	0.025	0	40	1600	0.025	0	42	1600	0.026
Nb Right	0	0	-	0	0	0	-	0	0	0	-
Sb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Thru	25	3200	0.016 *	0	25	3200	0.016 *	0	26	3200	0.017 *
Sb Right	26	0	-	0	26	0	-	0	27	0	-
Eb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Right	0	0	-	0	0	0	-	0	0	0	-
Wb Left	229	1600	0.143	183	412	1600	0.258	0	421	1600	0.263
Wb Thru	18	1600	0.037	0	18	1600	0.037	0	19	1600	0.038
Wb Right	41	0	-	0	41	0	-	0	43	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *
ICU			0.270				0.391				0.398
LOS			A				A				A

* *Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Erickson Avenue @ W. Imperial Highway

N-S St:	Erickson Avenue	Peak hr:	PM	Date:	10/03/2018
E-W St:	W. Imperial Highway	Annual Growth:	1%	Date of Count:	2017
Project:	5-17-0354-1 / Rancho Los Amigos South Campus			Projection Year:	2021
File:	ICU-13				

COUNTY OF LOS ANGELES

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 W/RELATED PROJECTS			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	83	2880	0.029 *	110	193	2880	0.067 *	3	199	2880	0.069 *
Nb Thru	11	1600	0.007	0	11	1600	0.007	0	11	1600	0.007
Nb Right	0	0	-	0	0	0	-	0	0	0	-
Sb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Thru	41	3200	0.023 *	0	41	3200	0.023 *	0	43	3200	0.023 *
Sb Right	31	0	-	0	31	0	-	0	32	0	-
Eb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Eb Right	0	0	-	0	0	0	-	0	0	0	-
Wb Left	71	1600	0.044	30	101	1600	0.063	6	110	1600	0.069
Wb Thru	8	1600	0.009	0	8	1600	0.009	0	8	1600	0.009
Wb Right	6	0	-	0	6	0	-	0	6	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *
ICU			0.196				0.253				0.261
LOS			A				A				A

* *Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Erickson Avenue @ E. Imperial Highway

N-S St:	Erickson Avenue	Peak hr:	AM	Date:	10/03/2018
E-W St:	E. Imperial Highway	Annual Growth:	1%	Date of Count:	2017
Project:	5-17-0354-1 / Rancho Los Amigos South Campus			Projection Year:	2021
File:	ICU-14				

COUNTY OF LOS ANGELES

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 W/RELATED PROJECTS			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Nb Thru	42	3200	0.025	19	61	3200	0.039	0	63	3200	0.040
Nb Right	39	0	-	25	64	0	-	0	66	0	-
Sb Left	47	1600	0.029	0	47	1600	0.029	0	49	1600	0.031
Sb Thru	206	3200	0.064 *	183	389	3200	0.122 *	0	397	3200	0.124 *
Sb Right	0	0	-	0	0	0	-	0	0	0	-
Eb Left	29	1600	0.018	0	29	1600	0.018	0	30	1600	0.019
Eb Thru	3	1600	0.073 *	0	3	1600	0.159 *	0	3	1600	0.162 *
Eb Right	114	0	-	137	251	0	-	0	256	0	-
Wb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Wb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Wb Right	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *
ICU			0.238				0.380				0.386
LOS			A				A				A

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*

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INTERSECTION CAPACITY UTILIZATION

Erickson Avenue @ E. Imperial Highway

N-S St:	Erickson Avenue	Peak hr:	PM	Date:	10/03/2018
E-W St:	E. Imperial Highway	Annual Growth:	1%	Date of Count:	2017
Project:	5-17-0354-1 / Rancho Los Amigos South Campus			Projection Year:	2021
File:	ICU-14				

COUNTY OF LOS ANGELES

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 W/RELATED PROJECTS			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Thru	87	3200	0.063 *	110	197	3200	0.144 *	3	203	3200	0.148 *
Nb Right	116	0	-	147	263	0	-	3	271	0	-
Sb Left	59	1600	0.037 *	0	59	1600	0.037 *	0	61	1600	0.038 *
Sb Thru	56	3200	0.018	30	86	3200	0.027	6	94	3200	0.029
Sb Right	0	0	-	0	0	0	-	0	0	0	-
Eb Left	6	1600	0.004	0	6	1600	0.004	0	6	1600	0.004
Eb Thru	4	1600	0.031 *	0	4	1600	0.045 *	0	4	1600	0.049 *
Eb Right	45	0	-	23	68	0	-	5	75	0	-
Wb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Wb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Wb Right	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *
ICU			0.231				0.326				0.336
LOS			A				A				A

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*

LINSCOTT, LAW & GREENSPAN, ENGINEERS
20931 Burbank Boulevard, Suite C, Woodland Hills, CA
(818) 835-8648 Fax (818) 835-8649

INTERSECTION CAPACITY UTILIZATION

Erickson Avenue @ Gardendale Street

N-S St:	Erickson Avenue	Peak hr:	AM	Date:	10/03/2018
E-W St:	Gardendale Street	Annual Growth:	1%	Date of Count:	2017
Project:	5-17-0354-1 Rancho Los Amigos South Campus			Projection Year:	2021
File:	ICU-16				

COUNTY OF LOS ANGELES

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 W/RELATED PROJECTS			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Right	0	0	-	0	0	0	-	0	0	0	-
Sb Left	0	1600	0.000	36	36	1600	0.023	0	36	1600	0.023
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	1600	0.000	33	33	1600	0.021	0	33	1600	0.021
Eb Left	0	1600	0.000 *	237	237	1600	0.148 *	1	238	1600	0.149 *
Eb Thru	572	1600	0.358	0	572	1600	0.358	5	600	1600	0.375
Eb Right	0	0	-	0	0	0	-	0	0	0	-
Wb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Wb Thru	900	1600	0.563 *	0	900	1600	0.563 *	2	938	1600	0.586 *
Wb Right	0	1600	0.000	265	265	1600	0.166	1	266	1600	0.166
Yellow Allowance:			0.100 *				0.100 *				0.100 *
ICU			0.663				0.833				0.858
LOS			B				D				D

* *Key conflicting movement as a part of ICU*
1 *Counts conducted by.* National Data & Surveying Services
2 *Capacity expressed in veh/hour of green*

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INTERSECTION CAPACITY UTILIZATION

Erickson Avenue @ Gardendale Street

N-S St:	Erickson Avenue	Peak hr:	PM	Date:	10/03/2018
E-W St:	Gardendale Street	Annual Growth:	1%	Date of Count:	2017
Project:	5-17-0354-1 Rancho Los Amigos South Campus			Projection Year:	2021
File:	ICU-16				

COUNTY OF LOS ANGELES

	2017 EXIST. TRAFFIC			2017 W/PROJECT SITE TRAFFIC				2021 W/RELATED PROJECTS			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Right	0	0	-	0	0	0	-	0	0	0	-
Sb Left	0	1600	0.000	213	213	1600	0.133	5	218	1600	0.136
Sb Thru	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	0	1600	0.000	191	191	1600	0.119	4	195	1600	0.122
Eb Left	0	1600	0.000	39	39	1600	0.024	8	47	1600	0.029
Eb Thru	599	1600	0.374 *	0	599	1600	0.374 *	3	626	1600	0.391 *
Eb Right	0	0	-	0	0	0	-	0	0	0	-
Wb Left	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
Wb Thru	490	1600	0.306	0	490	1600	0.306	5	515	1600	0.322
Wb Right	0	1600	0.000	44	44	1600	0.028	9	53	1600	0.033
Yellow Allowance:			0.100 *				0.100 *				0.100 *
ICU			0.474				0.608				0.627
LOS			A				B				B

* *Key conflicting movement as a part of ICU*
1 Counts conducted by. National Data & Surveying Services
2 Capacity expressed in veh/hour of green

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INTERSECTION CAPACITY UTILIZATION

Erickson Avenue @ Amigos Avenue

N-S St:	Erickson Avenue	Peak hr:	AM	Date:	10/03/2018
E-W St:	Amigos Avenue	Annual Growth:	1%	Date of Count:	2018
Project:	5-17-0354-1 / Rancho Los Amigos South Campus			Projection Year:	2021
File:	ICU-27				

COUNTY OF LOS ANGELES

	2018 EXIST. TRAFFIC				2018 W/PROJECT SITE TRAFFIC				2021 W/RELATED PROJECTS			
	1		2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume		Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	40		1600	0.025 *	13	53	1600	0.033 *	0	54	1600	0.034 *
Nb Thru	36		3200	0.012	44	80	3200	0.026	0	81	3200	0.026
Nb Right	2		0	-	0	2	0	-	0	2	0	-
Sb Left	42		1600	0.026	0	42	1600	0.026	0	43	1600	0.027
Sb Thru	79		3200	0.038 *	320	399	3200	0.138 *	1	402	3200	0.140 *
Sb Right	44		0	-	0	44	0	-	0	45	0	-
Eb Left	8		1600	0.005	0	8	1600	0.005	0	8	1600	0.005
Eb Thru	13		3200	0.013 *	0	13	3200	0.042 *	0	13	3200	0.042 *
Eb Right	29		0	-	91	120	0	-	0	121	0	-
Wb Left	0		1600	0.000 *	0	0	1600	0.000 *	0	0	1600	0.000 *
Wb Thru	7		3200	0.005	0	7	3200	0.005	0	7	3200	0.005
Wb Right	9		0	-	0	9	0	-	0	9	0	-
Yellow Allowance:				0.100 *				0.100 *				0.100 *
ICU				0.177				0.313				0.316
LOS				A				A				A

* *Key conflicting movement as a part of ICU*

1 *Counts conducted by.* National Data & Surveying Services

2 *Capacity expressed in veh/hour of green*

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INTERSECTION CAPACITY UTILIZATION

Erickson Avenue @ Amigos Avenue

N-S St:	Erickson Avenue	Peak hr:	PM	Date:	10/03/2018
E-W St:	Amigos Avenue	Annual Growth:	1%	Date of Count:	2018
Project:	5-17-0354-1 / Rancho Los Amigos South Campus			Projection Year:	2021
File:	ICU-27				

COUNTY OF LOS ANGELES

	2018 EXIST. TRAFFIC			2018 W/PROJECT SITE TRAFFIC				2021 W/RELATED PROJECTS			
	1	2	V/C	Added	Total	2	V/C	Added	Total	2	V/C
Movement	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio	Volume	Volume	Capacity	Ratio
Nb Left	25	1600	0.016	73	98	1600	0.061	2	101	1600	0.063
Nb Thru	72	3200	0.023 *	257	329	3200	0.103 *	6	337	3200	0.106 *
Nb Right	2	0	-	0	2	0	-	0	2	0	-
Sb Left	15	1600	0.009 *	0	15	1600	0.009 *	0	15	1600	0.010 *
Sb Thru	40	3200	0.015	53	93	3200	0.032	11	105	3200	0.035
Sb Right	8	0	-	0	8	0	-	0	8	0	-
Eb Left	19	1600	0.012	0	19	1600	0.012	0	20	1600	0.012
Eb Thru	17	3200	0.020 *	0	17	3200	0.025 *	0	18	3200	0.026 *
Eb Right	47	0	-	15	62	0	-	3	66	0	-
Wb Left	1	1600	0.001 *	0	1	1600	0.001 *	0	1	1600	0.001 *
Wb Thru	8	3200	0.006	0	8	3200	0.006	0	8	3200	0.006
Wb Right	12	0	-	0	12	0	-	0	12	0	-
Yellow Allowance:			0.100 *				0.100 *				0.100 *
ICU			0.153				0.238				0.243
LOS			A				A				A

* *Key conflicting movement as a part of ICU*

1 Counts conducted by. National Data & Surveying Services

2 Capacity expressed in veh/hour of green

APPENDIX F

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

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.

LEVEL OF SERVICE FOR SIGNALIZED INTERSECTIONS

In the *Highway Capacity Manual (HCM)*, published by the Transportation Research Board, 2000, level of service for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions: in the absence of traffic control, in the absence of geometric delay, in the absence of incidents, and when there are no other vehicles on the road. Only the portion of total delay attributed to the control facility is quantified. This delay is called *control delay*. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

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

Level of Service Criteria for Signalized Intersections

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

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

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

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

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

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

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

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

HCS7 Two-Way Stop-Control Report

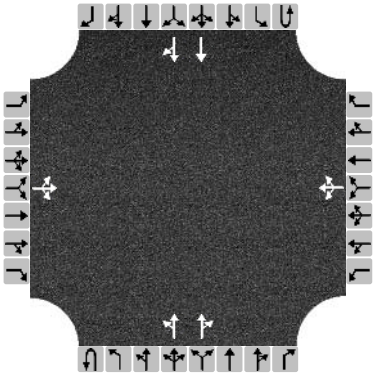
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing - AM
Intersection Orientation	North-South
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 7
Jurisdiction	City of South Gate
East/West Street	Monroe Avenue
North/South Street	Garfield Street
Peak Hour Factor	1.00
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	1	0		0	1	0	0	0	2	0	0	0	2	0
Configuration			LTR				LTR			LT		TR			T	TR
Volume, V (veh/h)		6	13	23		5	3	2		15	947	42			732	11
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3						
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1						
Critical Headway (sec)		7.56	6.56	6.96		7.56	6.56	6.96		4.16						
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2						
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			42				10			15						
Capacity, c (veh/h)			169				101			854						
v/c Ratio			0.25				0.10			0.02						
95% Queue Length, Q_{95} (veh)			0.9				0.3			0.1						
Control Delay (s/veh)			33.2				44.6			9.3						
Level of Service, LOS			D				E			A						
Approach Delay (s/veh)		33.2				44.6				0.3						
Approach LOS		D				E										

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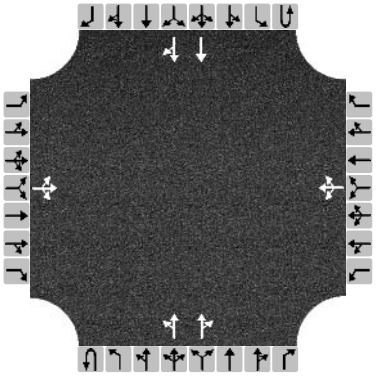
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing - PM
Intersection Orientation	North-South
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 7
Jurisdiction	City of South Gate
East/West Street	Monroe Avenue
North/South Street	Garfield Street
Peak Hour Factor	1.00
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	1	0		0	1	0	0	0	2	0	0	0	2	0
Configuration			LTR				LTR			LT		TR			T	TR
Volume, V (veh/h)		20	8	24		6	2	2		41	693	41			717	71
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3						
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1						
Critical Headway (sec)		7.56	6.56	6.96		7.56	6.56	6.96		4.16						
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2						
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			52				10			41						
Capacity, c (veh/h)			192				141			821						
v/c Ratio			0.27				0.07			0.05						
95% Queue Length, Q_{95} (veh)			1.1				0.2			0.2						
Control Delay (s/veh)			30.7				32.6			9.6						
Level of Service, LOS			D				D			A						
Approach Delay (s/veh)		30.7				32.6				0.8						
Approach LOS		D				D										

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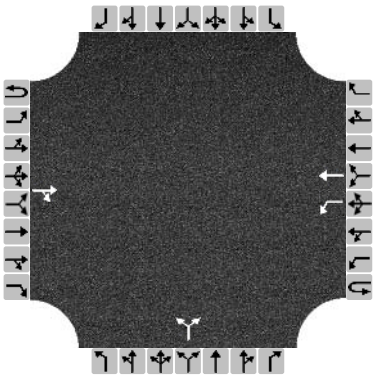
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing - AM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 8
Jurisdiction	City of South Gate
East/West Street	Gardendale Street
North/South Street	Monroe Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			509	2		12	923			5		59				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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					64					
Capacity, c (veh/h)						1048					455					
v/c Ratio						0.01					0.14					
95% Queue Length, Q_{95} (veh)						0.0					0.5					
Control Delay (s/veh)						8.5					14.2					
Level of Service, LOS						A					B					
Approach Delay (s/veh)						0.1					14.2					
Approach LOS											B					

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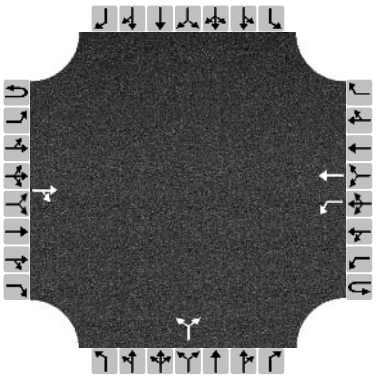
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing - PM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 8
Jurisdiction	City of South Gate
East/West Street	Gardendale Street
North/South Street	Monroe Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			575	0		13	456			1		54				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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

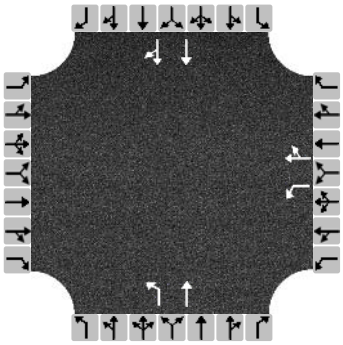
Flow Rate, v (veh/h)						13					55					
Capacity, c (veh/h)						992					505					
v/c Ratio						0.01					0.11					
95% Queue Length, Q_{95} (veh)						0.0					0.4					
Control Delay (s/veh)						8.7					13.0					
Level of Service, LOS						A					B					
Approach Delay (s/veh)						0.2					13.0					
Approach LOS											B					

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 13
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/3/2018	East/West Street	W. Imperial Highway
Analysis Year	2017	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Existing - AM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume				229	18	41	31	40			25	26
% Thrus in Shared Lane												50
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				L	TR		L	T		T	TR	
Flow Rate, v (veh/h)				229	59		31	40		13	39	
Percent Heavy Vehicles				2	2		2	2		2	2	

Departure Headway and Service Time

Initial Departure Headway, hd (s)				3.20	3.20		3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x				0.204	0.052		0.028	0.036		0.011	0.034	
Final Departure Headway, hd (s)				5.35	4.36		5.87	5.36		5.39	4.92	
Final Degree of Utilization, x				0.340	0.072		0.051	0.060		0.019	0.053	
Move-Up Time, m (s)				2.3	2.3		2.3	2.3		2.3	2.3	
Service Time, ts (s)				3.05	2.06		3.57	3.06		3.09	2.62	

Capacity, Delay and Level of Service

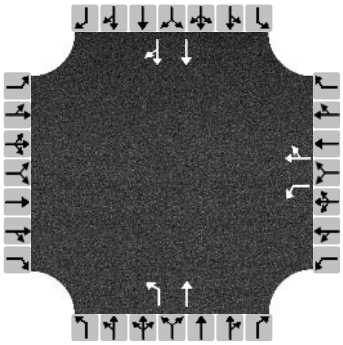
Flow Rate, v (veh/h)				229	59		31	40		13	39	
Capacity				673	825		614	671		668	732	
95% Queue Length, Q_{95} (veh)				1.5	0.2		0.2	0.2		0.1	0.2	
Control Delay (s/veh)				10.8	7.4		8.9	8.4		8.2	7.9	
Level of Service, LOS				B	A		A	A		A	A	
Approach Delay (s/veh)				10.1			8.6			8.0		
Approach LOS				B			A			A		
Intersection Delay, s/veh | LOS	9.6						A					

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 13
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/3/2018	East/West Street	W. Imperial Highway
Analysis Year	2017	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Existing - PM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume				71	8	6	83	11			41	31
% Thrus in Shared Lane												50
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				L	TR		L	T		T	TR	
Flow Rate, v (veh/h)				71	14		83	11		21	52	
Percent Heavy Vehicles				2	2		2	2		2	2	

Departure Headway and Service Time

Initial Departure Headway, hd (s)				3.20	3.20		3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x				0.063	0.012		0.074	0.010		0.018	0.046	
Final Departure Headway, hd (s)				5.43	4.63		5.33	4.83		4.86	4.43	
Final Degree of Utilization, x				0.107	0.018		0.123	0.015		0.028	0.063	
Move-Up Time, m (s)				2.3	2.3		2.3	2.3		2.3	2.3	
Service Time, ts (s)				3.13	2.33		3.03	2.53		2.56	2.13	

Capacity, Delay and Level of Service

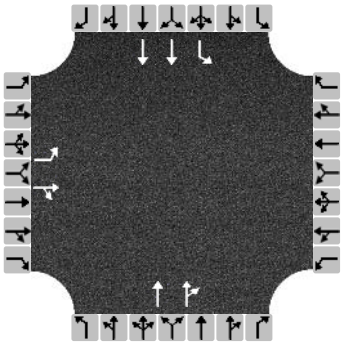
Flow Rate, v (veh/h)				71	14		83	11		21	52	
Capacity				663	777		675	746		741	812	
95% Queue Length, Q_{95} (veh)				0.4	0.1		0.4	0.0		0.1	0.2	
Control Delay (s/veh)				8.8	7.4		8.8	7.6		7.7	7.4	
Level of Service, LOS				A	A		A	A		A	A	
Approach Delay (s/veh)				8.6			8.6			7.5		
Approach LOS				A			A			A		
Intersection Delay, s/veh | LOS	8.3						A					

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 14
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/3/2018	East/West Street	E. Imperial Highway
Analysis Year	2017	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Existing - AM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	29	3	114					42	39	47	206	
% Thrus in Shared Lane									50			
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	TR					T	TR		L	T	T
Flow Rate, v (veh/h)	29	117					21	60		47	103	103
Percent Heavy Vehicles	2	2					2	2		2	2	2

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20					3.20	3.20		3.20	3.20	3.20
Initial Degree of Utilization, x	0.026	0.104					0.019	0.053		0.042	0.092	0.092
Final Departure Headway, hd (s)	5.94	4.76					5.49	5.03		5.64	5.13	5.13
Final Degree of Utilization, x	0.048	0.155					0.032	0.084		0.074	0.147	0.147
Move-Up Time, m (s)	2.3	2.3					2.3	2.3		2.3	2.3	2.3
Service Time, ts (s)	3.64	2.46					3.19	2.73		3.34	2.83	2.83

Capacity, Delay and Level of Service

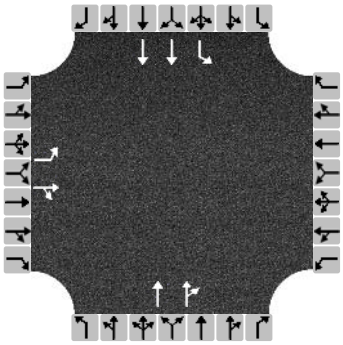
Flow Rate, v (veh/h)	29	117					21	60		47	103	103
Capacity	606	757					656	716		639	701	701
95% Queue Length, Q_{95} (veh)	0.2	0.5					0.1	0.3		0.2	0.5	0.5
Control Delay (s/veh)	8.9	8.3					8.4	8.2		8.8	8.7	8.7
Level of Service, LOS	A	A					A	A		A	A	A
Approach Delay (s/veh)	8.4						8.2			8.7		
Approach LOS	A						A			A		
Intersection Delay, s/veh | LOS	8.6						A					

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 14
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/3/2018	East/West Street	E. Imperial Highway
Analysis Year	2017	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Existing - PM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	6	4	45					87	116	59	56	
% Thrus in Shared Lane									50			
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	TR					T	TR		L	T	T
Flow Rate, v (veh/h)	6	49					44	160		59	28	28
Percent Heavy Vehicles	2	2					2	2		2	2	2

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20					3.20	3.20		3.20	3.20	3.20
Initial Degree of Utilization, x	0.005	0.044					0.039	0.142		0.052	0.025	0.025
Final Departure Headway, hd (s)	5.86	4.72					4.94	4.43		5.57	5.07	5.07
Final Degree of Utilization, x	0.010	0.064					0.060	0.196		0.091	0.039	0.039
Move-Up Time, m (s)	2.3	2.3					2.3	2.3		2.3	2.3	2.3
Service Time, ts (s)	3.56	2.42					2.64	2.13		3.27	2.77	2.77

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	6	49					44	160		59	28	28
Capacity	614	763					728	812		646	710	710
95% Queue Length, Q_{95} (veh)	0.0	0.2					0.2	0.7		0.3	0.1	0.1
Control Delay (s/veh)	8.6	7.7					8.0	8.2		8.8	8.0	8.0
Level of Service, LOS	A	A					A	A		A	A	A
Approach Delay (s/veh)	7.8						8.2			8.4		
Approach LOS	A						A			A		
Intersection Delay, s/veh | LOS	8.2						A					

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HCS7 Two-Way Stop-Control Report

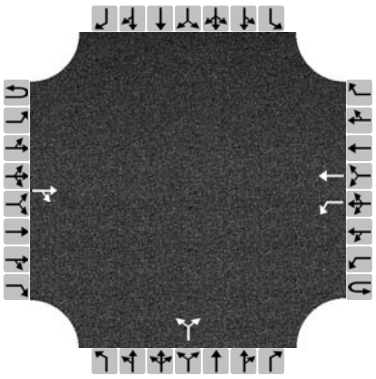
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing - AM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 15
Jurisdiction	Downey / South Gate
East/West Street	Gardendale Street
North/South Street	Industrial Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			565	18		6	895			35		5				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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)						6					40					
Capacity, c (veh/h)						986					150					
v/c Ratio						0.01					0.27					
95% Queue Length, Q_{95} (veh)						0.0					1.0					
Control Delay (s/veh)						8.7					37.4					
Level of Service, LOS						A					E					
Approach Delay (s/veh)						0.1					37.4					
Approach LOS											E					

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HCS7 Two-Way Stop-Control Report

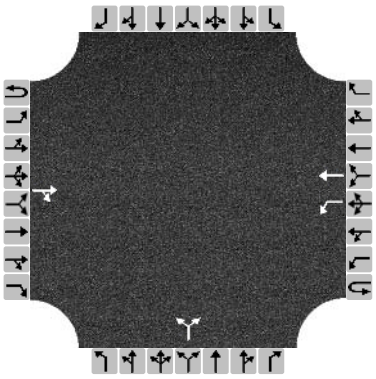
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing - PM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 15
Jurisdiction	Downey / South Gate
East/West Street	Gardendale Street
North/South Street	Industrial Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			608	29		10	461			25		9				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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)						10					34					
Capacity, c (veh/h)						941					267					
v/c Ratio						0.01					0.13					
95% Queue Length, Q_{95} (veh)						0.0					0.4					
Control Delay (s/veh)						8.9					20.4					
Level of Service, LOS						A					C					
Approach Delay (s/veh)						0.2					20.4					
Approach LOS											C					

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HCS7 Two-Way Stop-Control Report

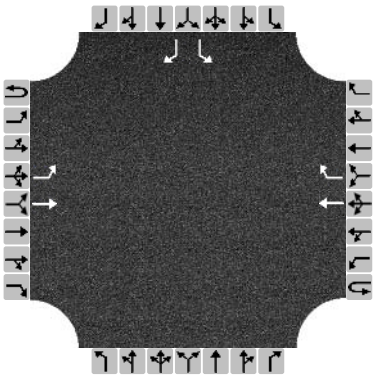
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing - AM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 16
Jurisdiction	Downey/South Gate/LAC
East/West Street	Gardendale Street
North/South Street	Erickson Avenue
Peak Hour Factor	1.00
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	1	1	0	0	0	1	1		0	0	0		1	0	1
Configuration		L	T				T	R						L		R
Volume, V (veh/h)		0	572				900	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized	No				No				No				No			
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)		0												0		0
Capacity, c (veh/h)		750												139		336
v/c Ratio		0.00												0.00		0.00
95% Queue Length, Q_{95} (veh)		0.0												0.0		0.0
Control Delay (s/veh)		9.8												30.9		15.7
Level of Service, LOS		A												D		C
Approach Delay (s/veh)	0.0															
Approach LOS																

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HCS7 Two-Way Stop-Control Report

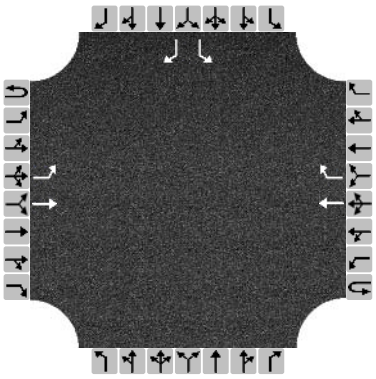
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing - PM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 16
Jurisdiction	Downey/South Gate/LAC
East/West Street	Gardendale Street
North/South Street	Erickson Avenue
Peak Hour Factor	1.00
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	1	1	0	0	0	1	1		0	0	0		1	0	1
Configuration		L	T				T	R						L		R
Volume, V (veh/h)		0	599				490	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized	No				No				No				No			
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)		0												0		0
Capacity, c (veh/h)		1067												237		576
v/c Ratio		0.00												0.00		0.00
95% Queue Length, Q_{95} (veh)		0.0												0.0		0.0
Control Delay (s/veh)		8.4												20.2		11.3
Level of Service, LOS		A												C		B
Approach Delay (s/veh)	0.0															
Approach LOS																

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HCS7 Two-Way Stop-Control Report

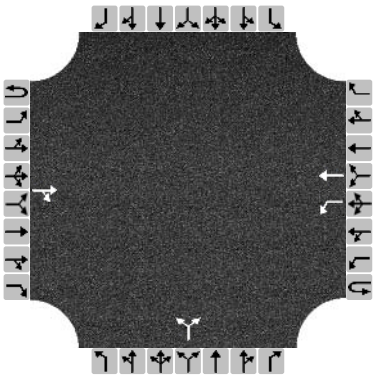
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing - AM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 17
Jurisdiction	Downey / South Gate
East/West Street	Gardendale Street
North/South Street	Arizona Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			568	8		23	881			19		27				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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)						23					46					
Capacity, c (veh/h)						991					233					
v/c Ratio						0.02					0.20					
95% Queue Length, Q_{95} (veh)						0.1					0.7					
Control Delay (s/veh)						8.7					24.2					
Level of Service, LOS						A					C					
Approach Delay (s/veh)						0.2					24.2					
Approach LOS											C					

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HCS7 Two-Way Stop-Control Report

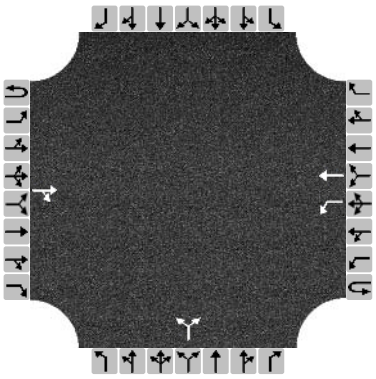
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing - PM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 17
Jurisdiction	Downey / South Gate
East/West Street	Gardendale Street
North/South Street	Arizona Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			596	6		16	490			4		32				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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)						16					36					
Capacity, c (veh/h)						970					439					
v/c Ratio						0.02					0.08					
95% Queue Length, Q_{95} (veh)						0.1					0.3					
Control Delay (s/veh)						8.8					13.9					
Level of Service, LOS						A					B					
Approach Delay (s/veh)						0.3					13.9					
Approach LOS											B					

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HCS7 Two-Way Stop-Control Report

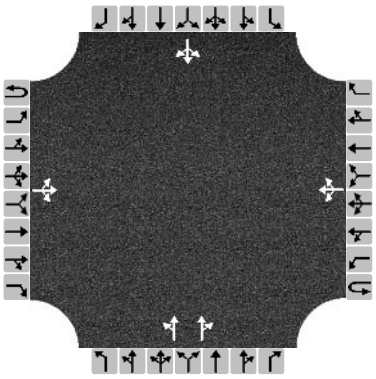
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing - AM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 18
Jurisdiction	City of South Gate
East/West Street	Main Street
North/South Street	Industrial-Arizona
Peak Hour Factor	1.00
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	2	0		0	1	0
Configuration			LTR				LTR			LT		TR			LTR	
Volume, V (veh/h)		16	177	23		8	243	4		30	13	29		4	14	13
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		16				8				37		36			31	
Capacity, c (veh/h)		1312				1365				459		741			559	
v/c Ratio		0.01				0.01				0.08		0.05			0.06	
95% Queue Length, Q_{95} (veh)		0.0				0.0				0.3		0.2			0.2	
Control Delay (s/veh)		7.8				7.7				13.5		10.1			11.8	
Level of Service, LOS		A				A				B		B			B	
Approach Delay (s/veh)	0.7				0.3				12.0				11.8			
Approach LOS									B				B			

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HCS7 Two-Way Stop-Control Report

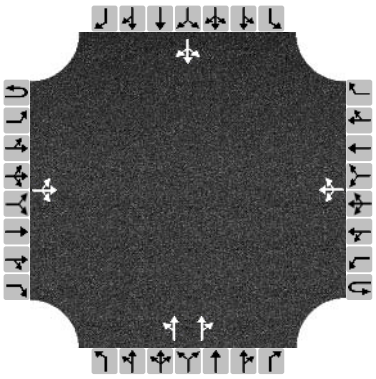
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing - PM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 18
Jurisdiction	City of South Gate
East/West Street	Main Street
North/South Street	Industrial-Arizona
Peak Hour Factor	1.00
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	2	0		0	1	0
Configuration			LTR				LTR			LT		TR			LTR	
Volume, V (veh/h)		10	165	21		10	140	7		22	9	26		9	8	13
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

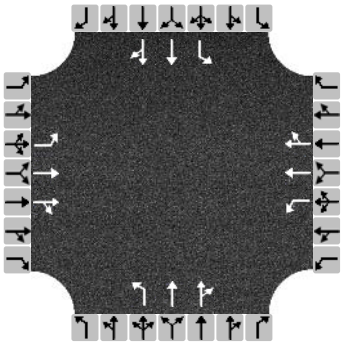
Flow Rate, v (veh/h)		10				10				27		31			30	
Capacity, c (veh/h)		1427				1381				561		798			660	
v/c Ratio		0.01				0.01				0.05		0.04			0.05	
95% Queue Length, Q_{95} (veh)		0.0				0.0				0.1		0.1			0.1	
Control Delay (s/veh)		7.5				7.6				11.7		9.7			10.7	
Level of Service, LOS		A				A				B		A			B	
Approach Delay (s/veh)	0.4				0.5				10.8				10.7			
Approach LOS									B				B			

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 27
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/3/2018	East/West Street	Amigos Avenue
Analysis Year	2018	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Existing - AM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	8	13	29	0	7	9	40	36	2	42	79	44
% Thrus in Shared Lane			50			50			50			50
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Flow Rate, v (veh/h)	8	7	36	0	4	13	40	18	20	42	40	84
Percent Heavy Vehicles	2	2	2	2	2	2	2	2	2	2	2	2

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
Initial Degree of Utilization, x	0.007	0.006	0.032	0.000	0.003	0.011	0.036	0.016	0.018	0.037	0.035	0.074
Final Departure Headway, hd (s)	5.70	5.20	4.63	5.77	5.27	4.77	5.54	5.03	4.96	5.39	4.88	4.52
Final Degree of Utilization, x	0.013	0.009	0.046	0.000	0.005	0.017	0.062	0.025	0.028	0.063	0.054	0.105
Move-Up Time, m (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Service Time, ts (s)	3.40	2.90	2.33	3.47	2.97	2.47	3.24	2.73	2.66	3.09	2.58	2.22

Capacity, Delay and Level of Service

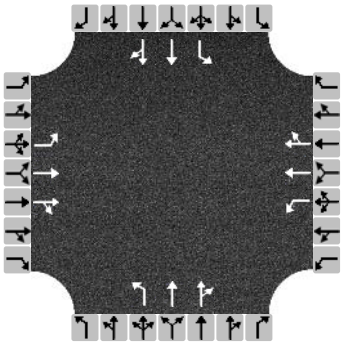
Flow Rate, v (veh/h)	8	7	36	0	4	13	40	18	20	42	40	84
Capacity	631	692	778	0	683	755	650	715	725	668	737	797
95% Queue Length, Q_{95} (veh)	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.2	0.2	0.3
Control Delay (s/veh)	8.5	8.0	7.6	8.5	8.0	7.5	8.6	7.9	7.8	8.4	7.9	7.7
Level of Service, LOS	A	A	A		A	A	A	A	A	A	A	A
Approach Delay (s/veh)	7.8			7.6			8.2			8.0		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh | LOS	8.0						A					

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 27
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/3/2018	East/West Street	Amigos Avenue
Analysis Year	2018	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Existing - PM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	19	17	47	1	8	12	25	72	2	15	40	8
% Thrus in Shared Lane			50			50			50			50
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Flow Rate, v (veh/h)	19	9	56	1	4	16	25	36	38	15	20	28
Percent Heavy Vehicles	2	2	2	2	2	2	2	2	2	2	2	2

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
Initial Degree of Utilization, x	0.017	0.008	0.049	0.001	0.004	0.014	0.022	0.032	0.034	0.013	0.018	0.025
Final Departure Headway, hd (s)	5.52	5.02	4.42	5.63	5.13	4.61	5.43	4.93	4.90	5.50	5.00	4.80
Final Degree of Utilization, x	0.029	0.012	0.068	0.002	0.006	0.020	0.038	0.049	0.052	0.023	0.028	0.037
Move-Up Time, m (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Service Time, ts (s)	3.22	2.72	2.12	3.33	2.83	2.31	3.13	2.63	2.60	3.20	2.70	2.50

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	19	9	56	1	4	16	25	36	38	15	20	28
Capacity	653	718	814	639	701	781	663	730	735	654	719	749
95% Queue Length, Q_{95} (veh)	0.1	0.0	0.2	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.1
Control Delay (s/veh)	8.4	7.8	7.4	8.3	7.9	7.4	8.3	7.9	7.9	8.3	7.8	7.7
Level of Service, LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s/veh)	7.7			7.5			8.0			7.9		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh | LOS	7.8						A					

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HCS7 Two-Way Stop-Control Report

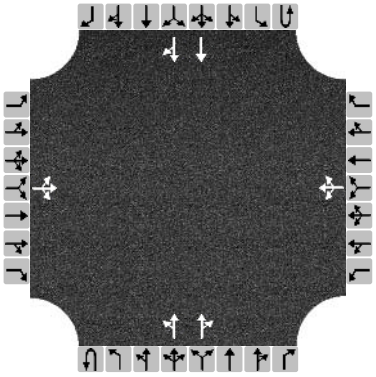
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing + Project - AM
Intersection Orientation	North-South
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 7
Jurisdiction	City of South Gate
East/West Street	Monroe Avenue
North/South Street	Garfield Street
Peak Hour Factor	1.00
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	1	0		0	1	0	0	0	2	0	0	0	2	0
Configuration			LTR				LTR			LT		TR			T	TR
Volume, V (veh/h)		6	13	23		6	3	2		15	1084	51			751	11
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3						
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1						
Critical Headway (sec)		7.56	6.56	6.96		7.56	6.56	6.96		4.16						
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2						
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			42				11			15						
Capacity, c (veh/h)			138				75			840						
v/c Ratio			0.30				0.15			0.02						
95% Queue Length, Q_{95} (veh)			1.2				0.5			0.1						
Control Delay (s/veh)			42.1				61.2			9.4						
Level of Service, LOS			E				F			A						
Approach Delay (s/veh)		42.1				61.2				0.3						
Approach LOS		E				F										

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HCS7 Two-Way Stop-Control Report

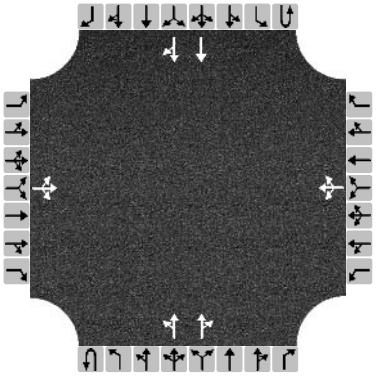
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing + Project - PM
Intersection Orientation	North-South
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 7
Jurisdiction	City of South Gate
East/West Street	Monroe Avenue
North/South Street	Garfield Street
Peak Hour Factor	1.00
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	1	0		0	1	0	0	0	2	0	0	0	2	0
Configuration			LTR				LTR			LT		TR			T	TR
Volume, V (veh/h)		20	8	24		13	2	2		41	716	43			827	71
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3						
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1						
Critical Headway (sec)		7.56	6.56	6.96		7.56	6.56	6.96		4.16						
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2						
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			52				17			41						
Capacity, c (veh/h)			157				114			746						
v/c Ratio			0.33				0.15			0.05						
95% Queue Length, Q_{95} (veh)			1.3				0.5			0.2						
Control Delay (s/veh)			38.8				42.1			10.1						
Level of Service, LOS			E				E			B						
Approach Delay (s/veh)		38.8				42.1				0.9						
Approach LOS		E				E										

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HCS7 Two-Way Stop-Control Report

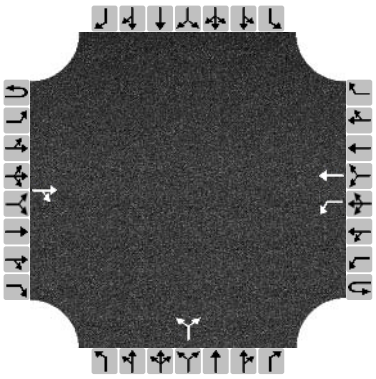
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing + Project - AM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 8
Jurisdiction	City of South Gate
East/West Street	Gardendale Street
North/South Street	Monroe Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			728	2		13	953			5		68				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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)						13					73					
Capacity, c (veh/h)						869					343					
v/c Ratio						0.01					0.21					
95% Queue Length, Q_{95} (veh)						0.0					0.8					
Control Delay (s/veh)						9.2					18.3					
Level of Service, LOS						A					C					
Approach Delay (s/veh)						0.1					18.3					
Approach LOS											C					

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HCS7 Two-Way Stop-Control Report

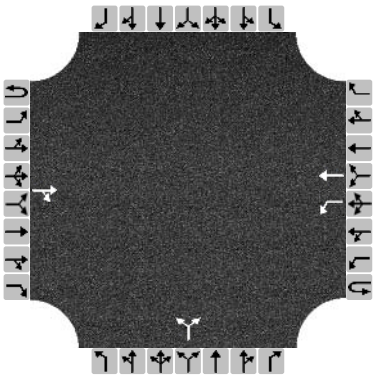
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing + Project - PM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 8
Jurisdiction	City of South Gate
East/West Street	Gardendale Street
North/South Street	Monroe Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			611	0		20	632			1		56				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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

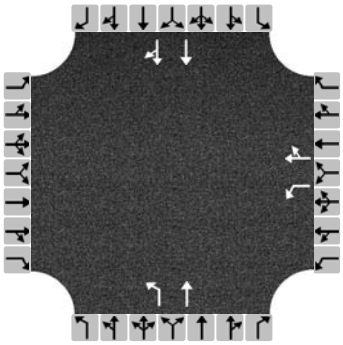
Flow Rate, v (veh/h)						20					57					
Capacity, c (veh/h)						962					477					
v/c Ratio						0.02					0.12					
95% Queue Length, Q_{95} (veh)						0.1					0.4					
Control Delay (s/veh)						8.8					13.6					
Level of Service, LOS						A					B					
Approach Delay (s/veh)						0.3					13.6					
Approach LOS											B					

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 13
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/3/2018	East/West Street	W. Imperial Highway
Analysis Year	2017	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Existing + Project - AM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume				412	18	41	50	40			25	26
% Thrus in Shared Lane												50
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				L	TR		L	T		T	TR	
Flow Rate, v (veh/h)				412	59		50	40		13	39	
Percent Heavy Vehicles				2	2		2	2		2	2	

Departure Headway and Service Time

Initial Departure Headway, hd (s)				3.20	3.20		3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x				0.366	0.052		0.044	0.036		0.011	0.034	
Final Departure Headway, hd (s)				5.44	4.45		6.41	5.90		5.97	5.49	
Final Degree of Utilization, x				0.622	0.073		0.089	0.066		0.021	0.059	
Move-Up Time, m (s)				2.3	2.3		2.3	2.3		2.3	2.3	
Service Time, ts (s)				3.14	2.15		4.11	3.60		3.67	3.19	

Capacity, Delay and Level of Service

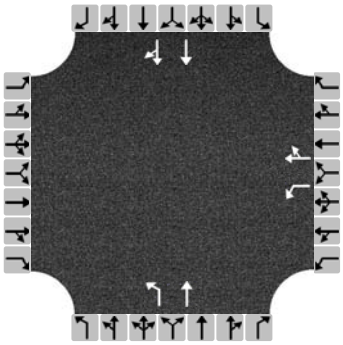
Flow Rate, v (veh/h)				412	59		50	40		13	39	
Capacity				662	809		562	610		603	655	
95% Queue Length, Q_{95} (veh)				4.3	0.2		0.3	0.2		0.1	0.2	
Control Delay (s/veh)				16.7	7.5		9.7	9.0		8.8	8.5	
Level of Service, LOS				C	A		A	A		A	A	
Approach Delay (s/veh)				15.5			9.4			8.6		
Approach LOS				C			A			A		
Intersection Delay, s/veh | LOS	14.0						B					

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 13
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/3/2018	East/West Street	W. Imperial Highway
Analysis Year	2017	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Existing + Project - PM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume				101	8	6	193	11			41	31
% Thrus in Shared Lane												50
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				L	TR		L	T		T	TR	
Flow Rate, v (veh/h)				101	14		193	11		21	52	
Percent Heavy Vehicles				2	2		2	2		2	2	

Departure Headway and Service Time

Initial Departure Headway, hd (s)				3.20	3.20		3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x				0.090	0.012		0.172	0.010		0.018	0.046	
Final Departure Headway, hd (s)				5.73	4.93		5.44	4.94		5.07	4.65	
Final Degree of Utilization, x				0.161	0.019		0.292	0.015		0.029	0.067	
Move-Up Time, m (s)				2.3	2.3		2.3	2.3		2.3	2.3	
Service Time, ts (s)				3.43	2.63		3.14	2.64		2.77	2.35	

Capacity, Delay and Level of Service

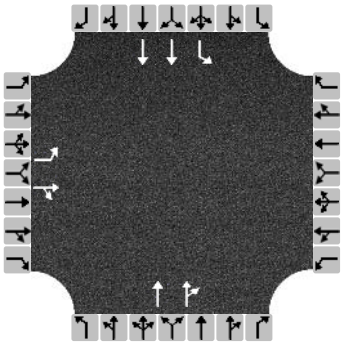
Flow Rate, v (veh/h)				101	14		193	11		21	52	
Capacity				628	730		662	729		710	774	
95% Queue Length, Q_{95} (veh)				0.6	0.1		1.2	0.0		0.1	0.2	
Control Delay (s/veh)				9.5	7.7		10.4	7.7		7.9	7.7	
Level of Service, LOS				A	A		B	A		A	A	
Approach Delay (s/veh)				9.3			10.2			7.7		
Approach LOS				A			B			A		
Intersection Delay, s/veh | LOS	9.5						A					

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 14
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/3/2018	East/West Street	E. Imperial Highway
Analysis Year	2017	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Existing + Project - AM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	29	3	251					61	69	47	389	
% Thrus in Shared Lane									50			
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	TR					T	TR		L	T	T
Flow Rate, v (veh/h)	29	254					31	100		47	195	195
Percent Heavy Vehicles	2	2					2	2		2	2	2

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20					3.20	3.20		3.20	3.20	3.20
Initial Degree of Utilization, x	0.026	0.226					0.027	0.088		0.042	0.173	0.173
Final Departure Headway, hd (s)	6.67	5.47					6.44	5.95		6.29	5.79	5.79
Final Degree of Utilization, x	0.054	0.386					0.055	0.164		0.082	0.313	0.313
Move-Up Time, m (s)	2.3	2.3					2.3	2.3		2.3	2.3	2.3
Service Time, ts (s)	4.37	3.17					4.14	3.65		3.99	3.49	3.49

Capacity, Delay and Level of Service

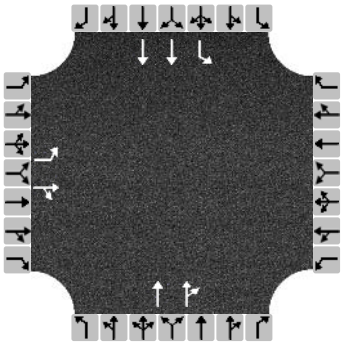
Flow Rate, v (veh/h)	29	254					31	100		47	195	195
Capacity	540	658					559	606		572	622	622
95% Queue Length, Q_{95} (veh)	0.2	1.8					0.2	0.6		0.3	1.3	1.3
Control Delay (s/veh)	9.7	11.6					9.5	9.8		9.6	11.1	11.1
Level of Service, LOS	A	B					A	A		A	B	B
Approach Delay (s/veh)	11.4						9.7			10.9		
Approach LOS	B						A			B		
Intersection Delay, s/veh | LOS	10.9						B					

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 14
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/3/2018	East/West Street	E. Imperial Highway
Analysis Year	2017	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Existing + Project - PM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	6	4	68					197	263	59	86	
% Thrus in Shared Lane									50			
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	TR					T	TR		L	T	T
Flow Rate, v (veh/h)	6	72					99	362		59	43	43
Percent Heavy Vehicles	2	2					2	2		2	2	2

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20					3.20	3.20		3.20	3.20	3.20
Initial Degree of Utilization, x	0.005	0.064					0.088	0.321		0.052	0.038	0.038
Final Departure Headway, hd (s)	6.58	5.42					5.13	4.62		6.16	5.66	5.66
Final Degree of Utilization, x	0.011	0.108					0.140	0.464		0.101	0.068	0.068
Move-Up Time, m (s)	2.3	2.3					2.3	2.3		2.3	2.3	2.3
Service Time, ts (s)	4.28	3.12					2.83	2.32		3.86	3.36	3.36

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	6	72					99	362		59	43	43
Capacity	547	665					702	780		585	637	637
95% Queue Length, Q_{95} (veh)	0.0	0.4					0.5	2.5		0.3	0.2	0.2
Control Delay (s/veh)	9.4	8.8					8.7	11.2		9.5	8.8	8.8
Level of Service, LOS	A	A					A	B		A	A	A
Approach Delay (s/veh)	8.8						10.7			9.1		
Approach LOS	A						B			A		
Intersection Delay, s/veh | LOS	10.1						B					

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HCS7 Two-Way Stop-Control Report

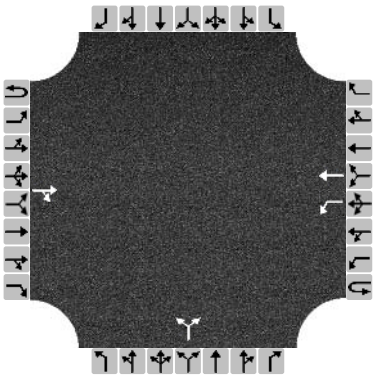
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing + Project - AM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 15
Jurisdiction	Downey / South Gate
East/West Street	Gardendale Street
North/South Street	Industrial Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			793	18		7	926			35		14				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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)						7					49					
Capacity, c (veh/h)						810					120					
v/c Ratio						0.01					0.41					
95% Queue Length, Q_{95} (veh)						0.0					1.7					
Control Delay (s/veh)						9.5					54.4					
Level of Service, LOS						A					F					
Approach Delay (s/veh)						0.1					54.4					
Approach LOS											F					

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HCS7 Two-Way Stop-Control Report

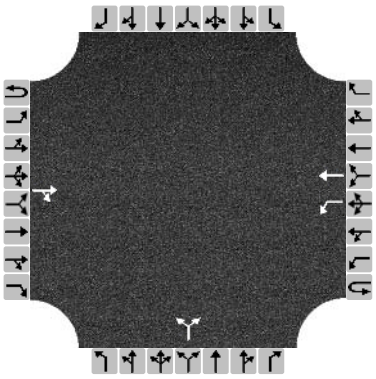
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing + Project - PM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 15
Jurisdiction	Downey / South Gate
East/West Street	Gardendale Street
North/South Street	Industrial Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			646	29		17	645			25		11				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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)						17					36					
Capacity, c (veh/h)						911					204					
v/c Ratio						0.02					0.18					
95% Queue Length, Q_{95} (veh)						0.1					0.6					
Control Delay (s/veh)						9.0					26.3					
Level of Service, LOS						A					D					
Approach Delay (s/veh)						0.2					26.3					
Approach LOS											D					

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HCS7 Two-Way Stop-Control Report

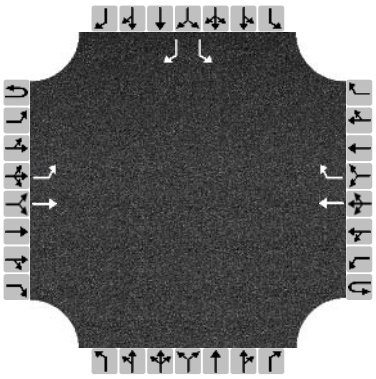
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing + Project - AM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 16
Jurisdiction	Downey/South Gate/LAC
East/West Street	Gardendale Street
North/South Street	Erickson Avenue
Peak Hour Factor	1.00
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	1	1	0	0	0	1	1		0	0	0		1	0	1
Configuration		L	T				T	R						L		R
Volume, V (veh/h)		237	572				900	265						36		33
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized	No				No				No				No			
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)		237												36		33
Capacity, c (veh/h)		596												43		336
v/c Ratio		0.40												0.85		0.10
95% Queue Length, Q_{95} (veh)		1.9												3.3		0.3
Control Delay (s/veh)		15.0												237.5		16.9
Level of Service, LOS		B												F		C
Approach Delay (s/veh)	4.4												132.0			
Approach LOS													F			

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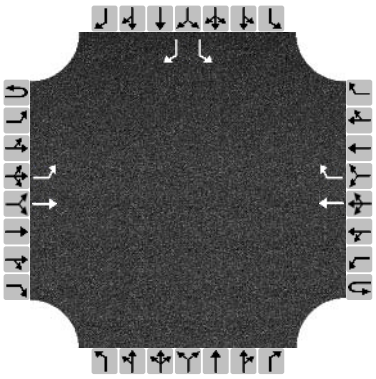
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing + Project - PM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 16
Jurisdiction	Downey/South Gate/LAC
East/West Street	Gardendale Street
North/South Street	Erickson Avenue
Peak Hour Factor	1.00
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	1	1	0	0	0	1	1		0	0	0		1	0	1
Configuration		L	T				T	R						L		R
Volume, V (veh/h)		39	599				490	44						213		191
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
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)		39												213		191
Capacity, c (veh/h)		1028												205		576
v/c Ratio		0.04												1.04		0.33
95% Queue Length, Q_{95} (veh)		0.1												9.5		1.4
Control Delay (s/veh)		8.6												122.5		14.3
Level of Service, LOS		A												F		B
Approach Delay (s/veh)		0.5												71.3		
Approach LOS														F		

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HCS7 Two-Way Stop-Control Report

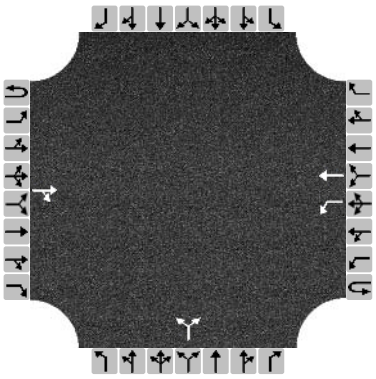
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing + Project - AM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 17
Jurisdiction	Downey / South Gate
East/West Street	Gardendale Street
North/South Street	Arizona Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			603	9		23	1137			28		27				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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)						23					55					
Capacity, c (veh/h)						961					145					
v/c Ratio						0.02					0.38					
95% Queue Length, Q_{95} (veh)						0.1					1.6					
Control Delay (s/veh)						8.8					44.2					
Level of Service, LOS						A					E					
Approach Delay (s/veh)						0.2					44.2					
Approach LOS											E					

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HCS7 Two-Way Stop-Control Report

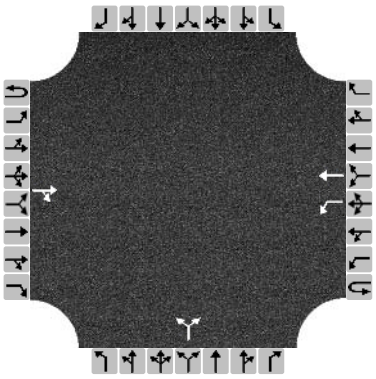
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing + Project - PM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 17
Jurisdiction	Downey / South Gate
East/West Street	Gardendale Street
North/South Street	Arizona Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			802	13		16	532			6		32				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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)						16					38					
Capacity, c (veh/h)						807					310					
v/c Ratio						0.02					0.12					
95% Queue Length, Q_{95} (veh)						0.1					0.4					
Control Delay (s/veh)						9.5					18.2					
Level of Service, LOS						A					C					
Approach Delay (s/veh)						0.3					18.2					
Approach LOS											C					

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HCS7 Two-Way Stop-Control Report

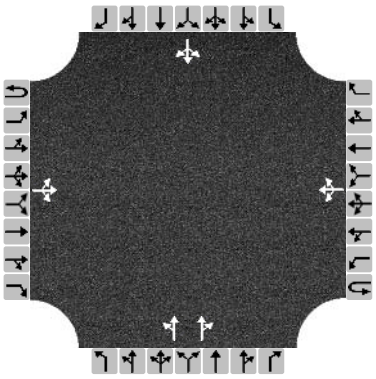
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing + Project - AM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 18
Jurisdiction	City of South Gate
East/West Street	Main Street
North/South Street	Industrial-Arizona
Peak Hour Factor	1.00
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	2	0		0	1	0
Configuration			LTR				LTR			LT		TR			LTR	
Volume, V (veh/h)		34	177	23		8	243	4		30	13	29		4	14	16
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		34				8				37		36			34	
Capacity, c (veh/h)		1312				1365				427		728			549	
v/c Ratio		0.03				0.01				0.09		0.05			0.06	
95% Queue Length, Q_{95} (veh)		0.1				0.0				0.3		0.2			0.2	
Control Delay (s/veh)		7.8				7.7				14.2		10.2			12.0	
Level of Service, LOS		A				A				B		B			B	
Approach Delay (s/veh)		1.3				0.3				12.4				12.0		
Approach LOS										B				B		

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HCS7 Two-Way Stop-Control Report

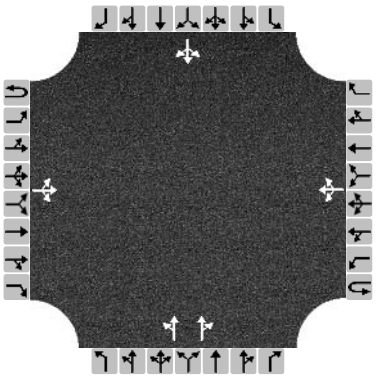
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/3/2018
Analysis Year	2017
Time Analyzed	Existing + Project - PM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 18
Jurisdiction	City of South Gate
East/West Street	Main Street
North/South Street	Industrial-Arizona
Peak Hour Factor	1.00
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	2	0		0	1	0
Configuration			LTR				LTR			LT		TR			LTR	
Volume, V (veh/h)		13	165	21		10	140	7		22	9	26		9	8	28
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

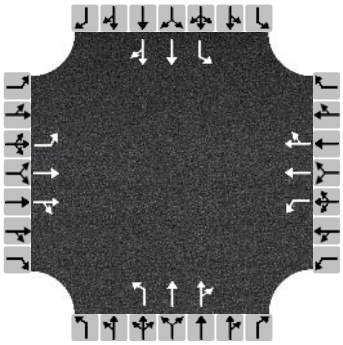
Flow Rate, v (veh/h)		13				10				27		31			45	
Capacity, c (veh/h)		1427				1381				543		797			721	
v/c Ratio		0.01				0.01				0.05		0.04			0.06	
95% Queue Length, Q_{95} (veh)		0.0				0.0				0.2		0.1			0.2	
Control Delay (s/veh)		7.5				7.6				12.0		9.7			10.3	
Level of Service, LOS		A				A				B		A			B	
Approach Delay (s/veh)		0.6				0.5				11.0				10.3		
Approach LOS										B				B		

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 27
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/3/2018	East/West Street	Amigos Avenue
Analysis Year	2018	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Existing + Project - AM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	8	13	120	0	7	9	53	36	2	42	399	44
% Thrus in Shared Lane			50			50			50			50
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Flow Rate, v (veh/h)	8	7	127	0	4	13	53	18	20	42	200	244
Percent Heavy Vehicles	2	2	2	2	2	2	2	2	2	2	2	2

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
Initial Degree of Utilization, x	0.007	0.006	0.112	0.000	0.003	0.011	0.047	0.016	0.018	0.037	0.177	0.216
Final Departure Headway, hd (s)	6.55	6.05	5.39	6.82	6.32	5.81	6.46	5.96	5.89	5.75	5.25	5.12
Final Degree of Utilization, x	0.015	0.011	0.189	0.000	0.006	0.020	0.095	0.030	0.033	0.067	0.291	0.347
Move-Up Time, m (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Service Time, ts (s)	4.25	3.75	3.09	4.52	4.02	3.51	4.16	3.66	3.59	3.45	2.95	2.82

Capacity, Delay and Level of Service

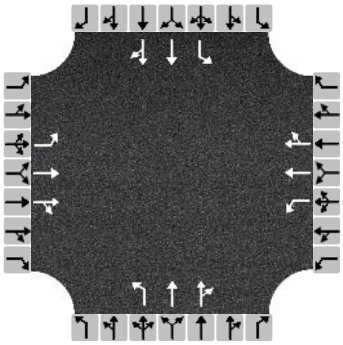
Flow Rate, v (veh/h)	8	7	127	0	4	13	53	18	20	42	200	244
Capacity	549	595	668	0	570	619	557	604	611	626	686	703
95% Queue Length, Q_{95} (veh)	0.0	0.0	0.7	0.0	0.0	0.1	0.3	0.1	0.1	0.2	1.2	1.5
Control Delay (s/veh)	9.4	8.8	9.3	9.5	9.1	8.6	9.8	8.8	8.8	8.9	10.1	10.5
Level of Service, LOS	A	A	A		A	A	A	A	A	A	B	B
Approach Delay (s/veh)	9.3			8.7			9.4			10.2		
Approach LOS	A			A			A			B		
Intersection Delay, s/veh | LOS	9.9						A					

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 27
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/3/2018	East/West Street	Amigos Avenue
Analysis Year	2018	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Existing + Project - PM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	19	17	62	1	8	12	98	329	2	15	93	8
% Thrus in Shared Lane			50			50			50			50
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Flow Rate, v (veh/h)	19	9	71	1	4	16	98	165	167	15	47	55
Percent Heavy Vehicles	2	2	2	2	2	2	2	2	2	2	2	2

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
Initial Degree of Utilization, x	0.017	0.008	0.063	0.001	0.004	0.014	0.087	0.146	0.148	0.013	0.041	0.048
Final Departure Headway, hd (s)	6.49	5.99	5.37	6.65	6.15	5.63	5.66	5.16	5.15	6.22	5.72	5.62
Final Degree of Utilization, x	0.034	0.014	0.105	0.002	0.007	0.025	0.154	0.236	0.238	0.026	0.074	0.085
Move-Up Time, m (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Service Time, ts (s)	4.19	3.69	3.07	4.35	3.85	3.33	3.36	2.86	2.85	3.92	3.42	3.32

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	19	9	71	1	4	16	98	165	167	15	47	55
Capacity	555	601	670	541	585	640	636	698	699	578	629	640
95% Queue Length, Q_{95} (veh)	0.1	0.0	0.4	0.0	0.0	0.1	0.5	0.9	0.9	0.1	0.2	0.3
Control Delay (s/veh)	9.4	8.8	8.7	9.4	8.9	8.5	9.4	9.4	9.5	9.1	8.9	8.8
Level of Service, LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s/veh)	8.8			8.6			9.4			8.9		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh | LOS	9.2						A					

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HCS7 Two-Way Stop-Control Report

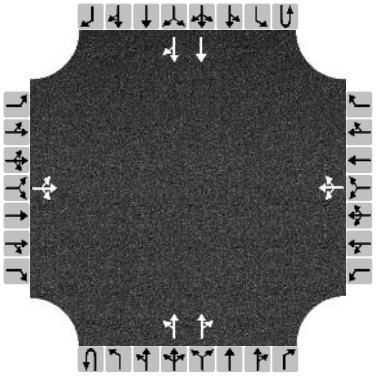
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future - AM
Intersection Orientation	North-South
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 7
Jurisdiction	City of South Gate
East/West Street	Monroe Avenue
North/South Street	Garfield Street
Peak Hour Factor	1.00
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	1	0		0	1	0	0	0	2	0	0	0	2	0
Configuration			LTR				LTR			LT		TR			T	TR
Volume, V (veh/h)		6	14	24		5	3	2		16	948	44			760	11
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3						
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1						
Critical Headway (sec)		7.56	6.56	6.96		7.56	6.56	6.96		4.16						
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2						
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23						

Delay, Queue Length, and Level of Service

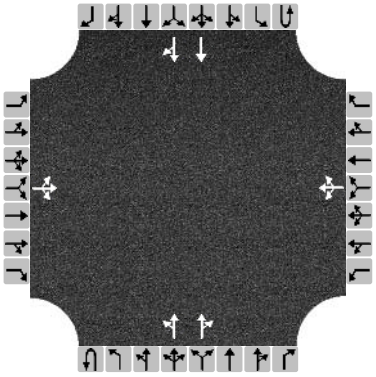
Flow Rate, v (veh/h)			44				10			16						
Capacity, c (veh/h)			159				96			833						
v/c Ratio			0.28				0.10			0.02						
95% Queue Length, Q_{95} (veh)			1.1				0.3			0.1						
Control Delay (s/veh)			36.0				46.9			9.4						
Level of Service, LOS			E				E			A						
Approach Delay (s/veh)		36.0				46.9				0.3						
Approach LOS		E				E										

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HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 7
Agency/Co.	LLG Engineers	Jurisdiction	City of South Gate
Date Performed	10/4/2018	East/West Street	Monroe Avenue
Analysis Year	2021	North/South Street	Garfield Street
Time Analyzed	Future - PM	Peak Hour Factor	1.00
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Rancho Los Amigos South Campus		

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	1	0		0	1	0	0	0	2	0	0	0	2	0
Configuration			LTR				LTR			LT		TR			T	TR
Volume, V (veh/h)		21	8	25		6	2	2		43	726	43			716	74
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3						
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1						
Critical Headway (sec)		7.56	6.56	6.96		7.56	6.56	6.96		4.16						
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2						
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			54				10			43						
Capacity, c (veh/h)			184				131			820						
v/c Ratio			0.29				0.08			0.05						
95% Queue Length, Q_{95} (veh)			1.2				0.2			0.2						
Control Delay (s/veh)			32.5				34.8			9.6						
Level of Service, LOS			D				D			A						
Approach Delay (s/veh)		32.5				34.8				0.9						
Approach LOS		D				D										

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HCS7 Two-Way Stop-Control Report

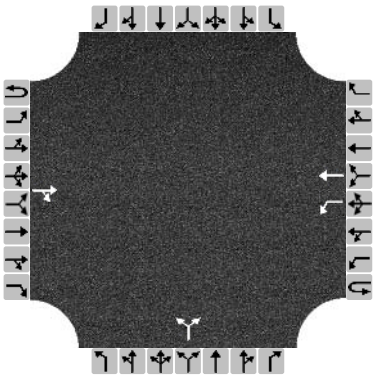
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future - AM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 8
Jurisdiction	City of South Gate
East/West Street	Gardendale Street
North/South Street	Monroe Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			534	2		12	962			5		61				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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					66					
Capacity, c (veh/h)						1026					436					
v/c Ratio						0.01					0.15					
95% Queue Length, Q_{95} (veh)						0.0					0.5					
Control Delay (s/veh)						8.6					14.7					
Level of Service, LOS						A					B					
Approach Delay (s/veh)						0.1					14.7					
Approach LOS											B					

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HCS7 Two-Way Stop-Control Report

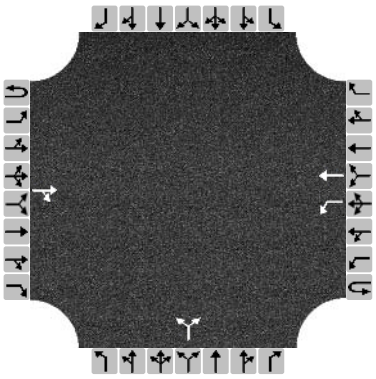
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future - PM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 8
Jurisdiction	City of South Gate
East/West Street	Gardendale Street
North/South Street	Monroe Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			609	0		14	483			1		56				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

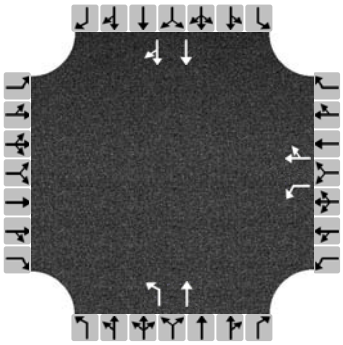
Flow Rate, v (veh/h)						14					57					
Capacity, c (veh/h)						964					483					
v/c Ratio						0.01					0.12					
95% Queue Length, Q_{95} (veh)						0.0					0.4					
Control Delay (s/veh)						8.8					13.5					
Level of Service, LOS						A					B					
Approach Delay (s/veh)						0.2					13.5					
Approach LOS											B					

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 13
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/4/2018	East/West Street	W. Imperial Highway
Analysis Year	2021	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Future - AM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume				238	19	43	32	42			26	27
% Thrus in Shared Lane												50
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				L	TR		L	T		T	TR	
Flow Rate, v (veh/h)				238	62		32	42		13	40	
Percent Heavy Vehicles				2	2		2	2		2	2	

Departure Headway and Service Time

Initial Departure Headway, hd (s)				3.20	3.20		3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x				0.212	0.055		0.028	0.037		0.012	0.036	
Final Departure Headway, hd (s)				5.36	4.38		5.90	5.40		5.43	4.95	
Final Degree of Utilization, x				0.355	0.075		0.052	0.063		0.020	0.055	
Move-Up Time, m (s)				2.3	2.3		2.3	2.3		2.3	2.3	
Service Time, ts (s)				3.06	2.08		3.60	3.10		3.13	2.65	

Capacity, Delay and Level of Service

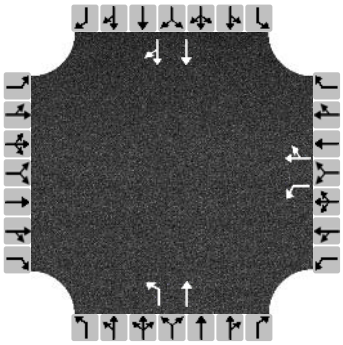
Flow Rate, v (veh/h)				238	62		32	42		13	40	
Capacity				671	822		610	667		663	727	
95% Queue Length, Q_{95} (veh)				1.6	0.2		0.2	0.2		0.1	0.2	
Control Delay (s/veh)				11.0	7.4		8.9	8.5		8.2	7.9	
Level of Service, LOS				B	A		A	A		A	A	
Approach Delay (s/veh)				10.2			8.7			8.0		
Approach LOS				B			A			A		
Intersection Delay, s/veh | LOS	9.7						A					

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 13
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/4/2018	East/West Street	W. Imperial Highway
Analysis Year	2021	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Future - PM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume				80	8	6	89	11			43	32
% Thrus in Shared Lane												50
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				L	TR		L	T		T	TR	
Flow Rate, v (veh/h)				80	14		89	11		22	54	
Percent Heavy Vehicles				2	2		2	2		2	2	

Departure Headway and Service Time

Initial Departure Headway, hd (s)				3.20	3.20		3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x				0.071	0.012		0.079	0.010		0.019	0.048	
Final Departure Headway, hd (s)				5.46	4.66		5.36	4.86		4.89	4.47	
Final Degree of Utilization, x				0.121	0.018		0.133	0.015		0.029	0.066	
Move-Up Time, m (s)				2.3	2.3		2.3	2.3		2.3	2.3	
Service Time, ts (s)				3.16	2.36		3.06	2.56		2.59	2.17	

Capacity, Delay and Level of Service

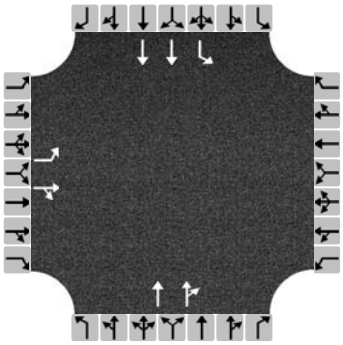
Flow Rate, v (veh/h)				80	14		89	11		22	54	
Capacity				660	773		672	741		736	805	
95% Queue Length, Q_{95} (veh)				0.4	0.1		0.5	0.0		0.1	0.2	
Control Delay (s/veh)				8.9	7.4		8.9	7.6		7.7	7.5	
Level of Service, LOS				A	A		A	A		A	A	
Approach Delay (s/veh)				8.7			8.7			7.6		
Approach LOS				A			A			A		
Intersection Delay, s/veh | LOS	8.4						A					

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 14
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/4/2018	East/West Street	E. Imperial Highway
Analysis Year	2021	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Future - AM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	30	3	119					44	41	49	214	
% Thrus in Shared Lane									50			
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	TR					T	TR		L	T	T
Flow Rate, v (veh/h)	30	122					22	63		49	107	107
Percent Heavy Vehicles	2	2					2	2		2	2	2

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20					3.20	3.20		3.20	3.20	3.20
Initial Degree of Utilization, x	0.027	0.108					0.020	0.056		0.044	0.095	0.095
Final Departure Headway, hd (s)	5.98	4.80					5.53	5.07		5.67	5.16	5.16
Final Degree of Utilization, x	0.050	0.163					0.034	0.089		0.077	0.153	0.153
Move-Up Time, m (s)	2.3	2.3					2.3	2.3		2.3	2.3	2.3
Service Time, ts (s)	3.68	2.50					3.23	2.77		3.37	2.86	2.86

Capacity, Delay and Level of Service

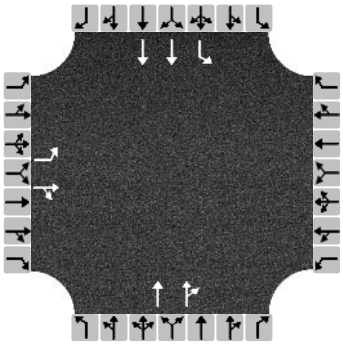
Flow Rate, v (veh/h)	30	122					22	63		49	107	107
Capacity	602	750					651	710		635	697	697
95% Queue Length, Q_{95} (veh)	0.2	0.6					0.1	0.3		0.2	0.5	0.5
Control Delay (s/veh)	9.0	8.4					8.4	8.3		8.8	8.8	8.8
Level of Service, LOS	A	A					A	A		A	A	A
Approach Delay (s/veh)	8.5						8.3			8.8		
Approach LOS	A						A			A		
Intersection Delay, s/veh | LOS	8.6						A					

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 14
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	1/24/2018	East/West Street	E. Imperial Highway
Analysis Year	2021	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Future - PM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	6	4	52					93	124	61	64	
% Thrus in Shared Lane									50			
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	TR					T	TR		L	T	T
Flow Rate, v (veh/h)	6	56					47	171		61	32	32
Percent Heavy Vehicles	2	2					2	2		2	2	2

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20					3.20	3.20		3.20	3.20	3.20
Initial Degree of Utilization, x	0.005	0.050					0.041	0.152		0.054	0.028	0.028
Final Departure Headway, hd (s)	5.93	4.77					4.99	4.48		5.63	5.12	5.12
Final Degree of Utilization, x	0.010	0.074					0.064	0.212		0.095	0.046	0.046
Move-Up Time, m (s)	2.3	2.3					2.3	2.3		2.3	2.3	2.3
Service Time, ts (s)	3.63	2.47					2.69	2.18		3.33	2.82	2.82

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	6	56					47	171		61	32	32
Capacity	608	754					722	804		640	702	702
95% Queue Length, Q_{95} (veh)	0.0	0.2					0.2	0.8		0.3	0.1	0.1
Control Delay (s/veh)	8.7	7.9					8.0	8.4		8.9	8.1	8.1
Level of Service, LOS	A	A					A	A		A	A	A
Approach Delay (s/veh)	7.9						8.3			8.5		
Approach LOS	A						A			A		
Intersection Delay, s/veh | LOS	8.3						A					

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HCS7 Two-Way Stop-Control Report

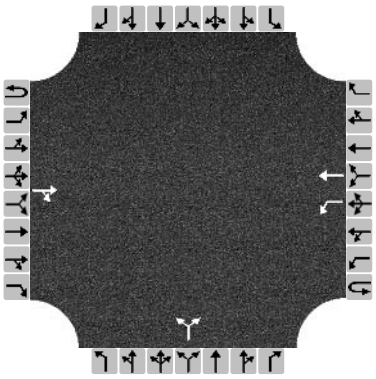
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future - AM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 15
Jurisdiction	Downey / South Gate
East/West Street	Gardendale Street
North/South Street	Industrial Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			594	19		6	933			36		5				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						6					41					
Capacity, c (veh/h)						961					137					
v/c Ratio						0.01					0.30					
95% Queue Length, Q_{95} (veh)						0.0					1.2					
Control Delay (s/veh)						8.8					42.3					
Level of Service, LOS						A					E					
Approach Delay (s/veh)						0.1					42.3					
Approach LOS											E					

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HCS7 Two-Way Stop-Control Report

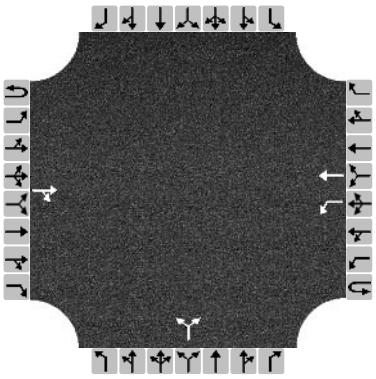
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future - PM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 15
Jurisdiction	Downey / South Gate
East/West Street	Gardendale Street
North/South Street	Industrial Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			643	30		10	488			26		9				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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)						10					35					
Capacity, c (veh/h)						912					245					
v/c Ratio						0.01					0.14					
95% Queue Length, Q_{95} (veh)						0.0					0.5					
Control Delay (s/veh)						9.0					22.1					
Level of Service, LOS						A					C					
Approach Delay (s/veh)						0.2					22.1					
Approach LOS											C					

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HCS7 Two-Way Stop-Control Report

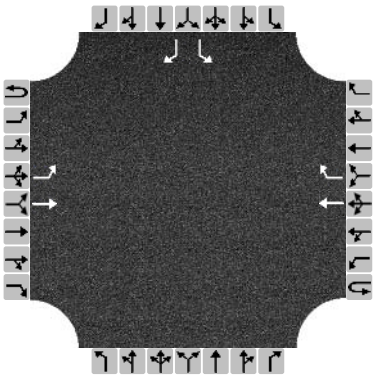
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future - AM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 16
Jurisdiction	Downey/South Gate/LAC
East/West Street	Gardendale Street
North/South Street	Erickson Avenue
Peak Hour Factor	1.00
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	1	1	0	0	0	1	1		0	0	0		1	0	1
Configuration		L	T				T	R						L		R
Volume, V (veh/h)		1	600				938	1						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
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)		1												0		0
Capacity, c (veh/h)		725												126		319
v/c Ratio		0.00												0.00		0.00
95% Queue Length, Q_{95} (veh)		0.0												0.0		0.0
Control Delay (s/veh)		10.0												33.5		16.3
Level of Service, LOS		A												D		C
Approach Delay (s/veh)		0.0														
Approach LOS																

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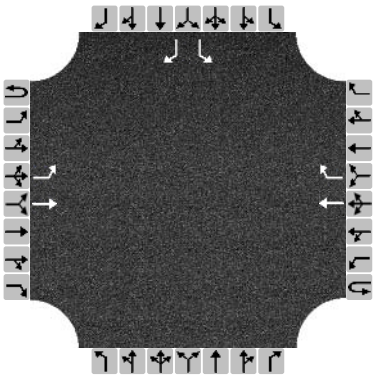
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future - PM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 16
Jurisdiction	Downey/South Gate/LAC
East/West Street	Gardendale Street
North/South Street	Erickson Avenue
Peak Hour Factor	1.00
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	1	1	0	0	0	1	1		0	0	0		1	0	1
Configuration		L	T				T	R						L		R
Volume, V (veh/h)		8	626				515	9						5		4
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No				No				No		
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)		8												5		4
Capacity, c (veh/h)		1036												214		557
v/c Ratio		0.01												0.02		0.01
95% Queue Length, Q_{95} (veh)		0.0												0.1		0.0
Control Delay (s/veh)		8.5												22.2		11.5
Level of Service, LOS		A												C		B
Approach Delay (s/veh)		0.1												17.4		
Approach LOS														C		

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HCS7 Two-Way Stop-Control Report

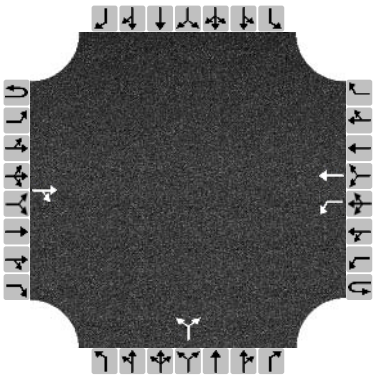
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future - AM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 17
Jurisdiction	Downey / South Gate
East/West Street	Gardendale Street
North/South Street	Arizona Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			596	8		24	919			20		28				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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)						24					48					
Capacity, c (veh/h)						968					214					
v/c Ratio						0.02					0.22					
95% Queue Length, Q_{95} (veh)						0.1					0.8					
Control Delay (s/veh)						8.8					26.7					
Level of Service, LOS						A					D					
Approach Delay (s/veh)						0.2					26.7					
Approach LOS											D					

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HCS7 Two-Way Stop-Control Report

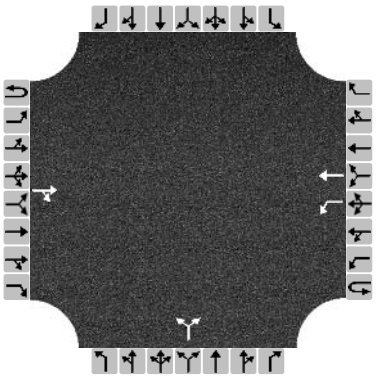
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future - PM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 17
Jurisdiction	Downey / South Gate
East/West Street	Gardendale Street
North/South Street	Arizona Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			628	6		17	524			4		33				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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)						17					37					
Capacity, c (veh/h)						943					418					
v/c Ratio						0.02					0.09					
95% Queue Length, Q_{95} (veh)						0.1					0.3					
Control Delay (s/veh)						8.9					14.5					
Level of Service, LOS						A					B					
Approach Delay (s/veh)						0.3					14.5					
Approach LOS											B					

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HCS7 Two-Way Stop-Control Report

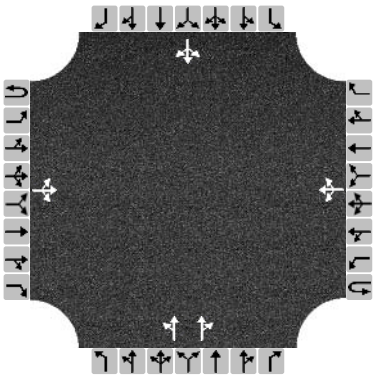
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future - AM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 18
Jurisdiction	City of South Gate
East/West Street	Main Street
North/South Street	Industrial-Arizona
Peak Hour Factor	1.00
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	2	0		0	1	0
Configuration			LTR				LTR			LT		TR			LTR	
Volume, V (veh/h)		17	184	24		8	253	4		31	14	30		4	15	14
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		17				8				38		37			33	
Capacity, c (veh/h)		1301				1355				444		727			547	
v/c Ratio		0.01				0.01				0.09		0.05			0.06	
95% Queue Length, Q_{95} (veh)		0.0				0.0				0.3		0.2			0.2	
Control Delay (s/veh)		7.8				7.7				13.9		10.2			12.0	
Level of Service, LOS		A				A				B		B			B	
Approach Delay (s/veh)		0.7				0.3				12.2				12.0		
Approach LOS										B				B		

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HCS7 Two-Way Stop-Control Report

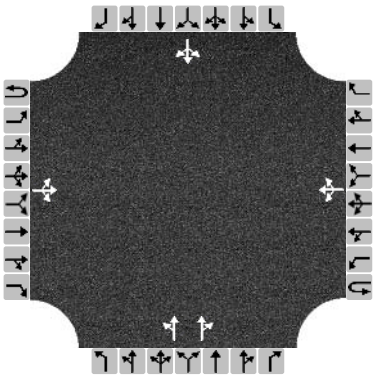
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future - PM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 18
Jurisdiction	City of South Gate
East/West Street	Main Street
North/South Street	Industrial-Arizona
Peak Hour Factor	1.00
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	2	0		0	1	0
Configuration			LTR				LTR			LT		TR			LTR	
Volume, V (veh/h)		11	172	22		10	146	7		23	9	27		9	8	14
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

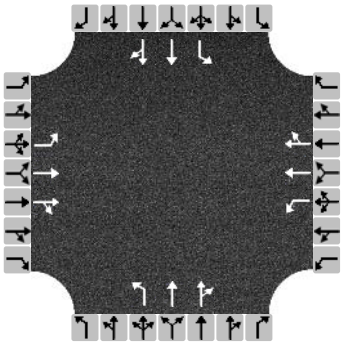
Flow Rate, v (veh/h)		11				10				28		32			31	
Capacity, c (veh/h)		1420				1372				547		791			654	
v/c Ratio		0.01				0.01				0.05		0.04			0.05	
95% Queue Length, Q_{95} (veh)		0.0				0.0				0.2		0.1			0.1	
Control Delay (s/veh)		7.6				7.6				11.9		9.7			10.8	
Level of Service, LOS		A				A				B		A			B	
Approach Delay (s/veh)		0.5				0.5				11.0				10.8		
Approach LOS										B				B		

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 27
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/3/2018	East/West Street	Amigos Avenue
Analysis Year	2021	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Future - AM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	8	13	30	0	7	9	41	37	2	43	82	45
% Thrus in Shared Lane			50			50			50			50
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Flow Rate, v (veh/h)	8	7	37	0	4	13	41	19	21	43	41	86
Percent Heavy Vehicles	2	2	2	2	2	2	2	2	2	2	2	2

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
Initial Degree of Utilization, x	0.007	0.006	0.032	0.000	0.003	0.011	0.036	0.016	0.018	0.038	0.036	0.076
Final Departure Headway, hd (s)	5.72	5.22	4.65	5.79	5.29	4.79	5.55	5.05	4.98	5.39	4.89	4.53
Final Degree of Utilization, x	0.013	0.009	0.047	0.000	0.005	0.017	0.063	0.026	0.028	0.064	0.056	0.108
Move-Up Time, m (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Service Time, ts (s)	3.42	2.92	2.35	3.49	2.99	2.49	3.25	2.75	2.68	3.09	2.59	2.23

Capacity, Delay and Level of Service

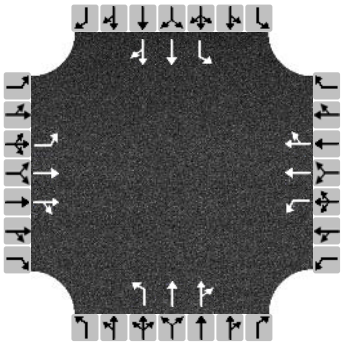
Flow Rate, v (veh/h)	8	7	37	0	4	13	41	19	21	43	41	86
Capacity	629	690	775	0	680	752	649	713	723	668	736	795
95% Queue Length, Q_{95} (veh)	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.2	0.2	0.4
Control Delay (s/veh)	8.5	8.0	7.6	8.5	8.0	7.6	8.6	7.9	7.8	8.5	7.9	7.8
Level of Service, LOS	A	A	A		A	A	A	A	A	A	A	A
Approach Delay (s/veh)	7.8			7.7			8.2			8.0		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh | LOS	8.0						A					

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 27
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/4/2018	East/West Street	Amigos Avenue
Analysis Year	2021	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Future - PM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	20	18	51	1	8	12	28	80	2	15	52	8
% Thrus in Shared Lane			50			50			50			50
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Flow Rate, v (veh/h)	20	9	60	1	4	16	28	40	42	15	26	34
Percent Heavy Vehicles	2	2	2	2	2	2	2	2	2	2	2	2

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
Initial Degree of Utilization, x	0.018	0.008	0.053	0.001	0.004	0.014	0.025	0.036	0.037	0.013	0.023	0.030
Final Departure Headway, hd (s)	5.58	5.08	4.49	5.71	5.21	4.68	5.48	4.98	4.94	5.55	5.05	4.88
Final Degree of Utilization, x	0.031	0.013	0.075	0.002	0.006	0.021	0.043	0.055	0.058	0.023	0.036	0.046
Move-Up Time, m (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Service Time, ts (s)	3.28	2.78	2.19	3.41	2.91	2.38	3.18	2.68	2.64	3.25	2.75	2.58

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	20	9	60	1	4	16	28	40	42	15	26	34
Capacity	645	709	803	631	691	769	657	723	728	649	713	737
95% Queue Length, Q_{95} (veh)	0.1	0.0	0.2	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.1
Control Delay (s/veh)	8.5	7.8	7.5	8.4	7.9	7.5	8.4	8.0	7.9	8.4	7.9	7.8
Level of Service, LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s/veh)	7.8			7.6			8.1			8.0		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh | LOS	7.9						A					

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HCS7 Two-Way Stop-Control Report

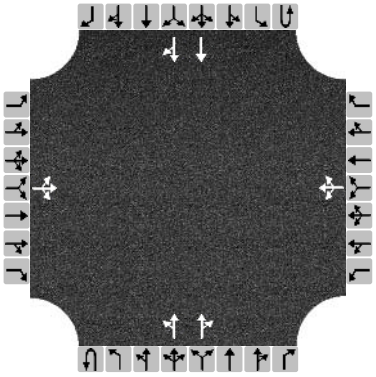
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future + Project - AM
Intersection Orientation	North-South
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 7
Jurisdiction	City of South Gate
East/West Street	Monroe Avenue
North/South Street	Garfield Street
Peak Hour Factor	1.00
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	1	0		0	1	0	0	0	2	0	0	0	2	0
Configuration			LTR				LTR			LT		TR			T	TR
Volume, V (veh/h)		6	14	24		6	3	2		16	1085	53			779	11
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3						
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1						
Critical Headway (sec)		7.56	6.56	6.96		7.56	6.56	6.96		4.16						
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2						
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			44				11			16						
Capacity, c (veh/h)			130				71			820						
v/c Ratio			0.34				0.16			0.02						
95% Queue Length, Q_{95} (veh)			1.4				0.5			0.1						
Control Delay (s/veh)			46.1				65.1			9.5						
Level of Service, LOS			E				F			A						
Approach Delay (s/veh)		46.1				65.1				0.4						
Approach LOS		E				F										

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HCS7 Two-Way Stop-Control Report

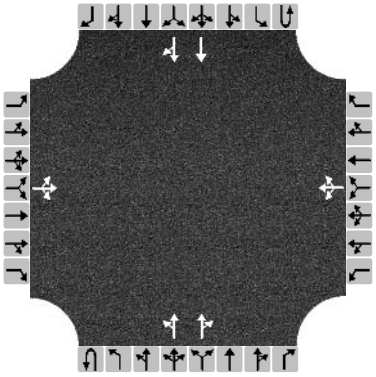
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future + Project - PM
Intersection Orientation	North-South
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 7
Jurisdiction	City of South Gate
East/West Street	Monroe Avenue
North/South Street	Garfield Street
Peak Hour Factor	1.00
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	1	0		0	1	0	0	0	2	0	0	0	2	0
Configuration			LTR				LTR			LT		TR			T	TR
Volume, V (veh/h)		21	8	25		13	2	2		43	749	45			826	74
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3						
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5	6.5	6.9		7.5	6.5	6.9		4.1						
Critical Headway (sec)		7.56	6.56	6.96		7.56	6.56	6.96		4.16						
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2						
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			54				17			43						
Capacity, c (veh/h)			151				106			744						
v/c Ratio			0.36				0.16			0.06						
95% Queue Length, Q_{95} (veh)			1.5				0.5			0.2						
Control Delay (s/veh)			41.5				45.5			10.1						
Level of Service, LOS			E				E			B						
Approach Delay (s/veh)		41.5				45.5				0.9						
Approach LOS		E				E										

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HCS7 Two-Way Stop-Control Report

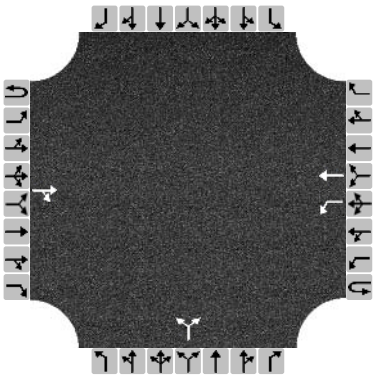
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future + Project - AM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 8
Jurisdiction	City of South Gate
East/West Street	Gardendale Street
North/South Street	Monroe Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			753	2		13	992			5		70				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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)						13					75					
Capacity, c (veh/h)						850					329					
v/c Ratio						0.02					0.23					
95% Queue Length, Q_{95} (veh)						0.0					0.9					
Control Delay (s/veh)						9.3					19.1					
Level of Service, LOS						A					C					
Approach Delay (s/veh)						0.1					19.1					
Approach LOS											C					

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HCS7 Two-Way Stop-Control Report

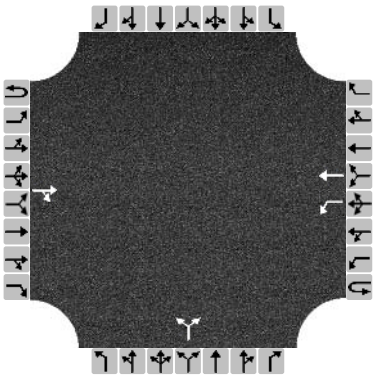
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future + Project - PM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 8
Jurisdiction	City of South Gate
East/West Street	Gardendale Street
North/South Street	Monroe Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			645	0		21	659			1		58				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

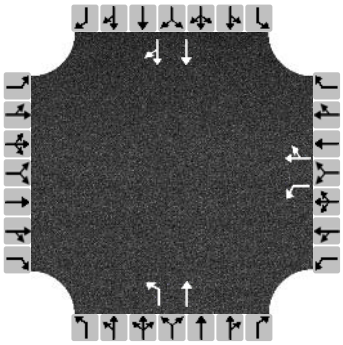
Flow Rate, v (veh/h)						21					59					
Capacity, c (veh/h)						935					456					
v/c Ratio						0.02					0.13					
95% Queue Length, Q_{95} (veh)						0.1					0.4					
Control Delay (s/veh)						8.9					14.1					
Level of Service, LOS						A					B					
Approach Delay (s/veh)						0.3					14.1					
Approach LOS											B					

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 13
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/4/2018	East/West Street	W. Imperial Highway
Analysis Year	2021	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Future + Project - AM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume				421	19	43	51	42			26	27
% Thrus in Shared Lane												50
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				L	TR		L	T		T	TR	
Flow Rate, v (veh/h)				421	62		51	42		13	40	
Percent Heavy Vehicles				2	2		2	2		2	2	

Departure Headway and Service Time

Initial Departure Headway, hd (s)				3.20	3.20		3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x				0.374	0.055		0.045	0.037		0.012	0.036	
Final Departure Headway, hd (s)				5.45	4.47		6.44	5.94		6.01	5.53	
Final Degree of Utilization, x				0.638	0.077		0.091	0.069		0.022	0.061	
Move-Up Time, m (s)				2.3	2.3		2.3	2.3		2.3	2.3	
Service Time, ts (s)				3.15	2.17		4.14	3.64		3.71	3.23	

Capacity, Delay and Level of Service

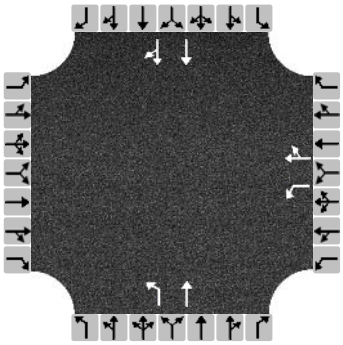
Flow Rate, v (veh/h)				421	62		51	42		13	40	
Capacity				660	806		559	606		599	650	
95% Queue Length, Q_{95} (veh)				4.6	0.2		0.3	0.2		0.1	0.2	
Control Delay (s/veh)				17.2	7.5		9.8	9.1		8.8	8.6	
Level of Service, LOS				C	A		A	A		A	A	
Approach Delay (s/veh)				16.0			9.5			8.7		
Approach LOS				C			A			A		
Intersection Delay, s/veh | LOS	14.4						B					

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 13
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/4/2018	East/West Street	W. Imperial Highway
Analysis Year	2021	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Future + Project - PM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume				110	8	6	199	11			43	32
% Thrus in Shared Lane												50
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration				L	TR		L	T		T	TR	
Flow Rate, v (veh/h)				110	14		199	11		22	54	
Percent Heavy Vehicles				2	2		2	2		2	2	

Departure Headway and Service Time

Initial Departure Headway, hd (s)				3.20	3.20		3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x				0.098	0.012		0.177	0.010		0.019	0.048	
Final Departure Headway, hd (s)				5.76	4.96		5.47	4.97		5.11	4.69	
Final Degree of Utilization, x				0.176	0.019		0.303	0.015		0.031	0.070	
Move-Up Time, m (s)				2.3	2.3		2.3	2.3		2.3	2.3	
Service Time, ts (s)				3.46	2.66		3.17	2.67		2.81	2.39	

Capacity, Delay and Level of Service

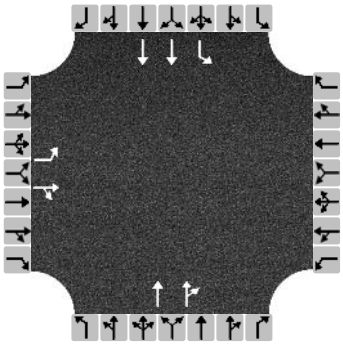
Flow Rate, v (veh/h)				110	14		199	11		22	54	
Capacity				625	726		658	724		704	767	
95% Queue Length, Q_{95} (veh)				0.6	0.1		1.3	0.0		0.1	0.2	
Control Delay (s/veh)				9.7	7.8		10.5	7.7		8.0	7.7	
Level of Service, LOS				A	A		B	A		A	A	
Approach Delay (s/veh)				9.5			10.4			7.8		
Approach LOS				A			B			A		
Intersection Delay, s/veh | LOS	9.6						A					

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 14
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/4/2018	East/West Street	E. Imperial Highway
Analysis Year	2021	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Future + Project - AM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	30	3	256					63	71	49	397	
% Thrus in Shared Lane									50			
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	TR					T	TR		L	T	T
Flow Rate, v (veh/h)	30	259					32	103		49	199	199
Percent Heavy Vehicles	2	2					2	2		2	2	2

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20					3.20	3.20		3.20	3.20	3.20
Initial Degree of Utilization, x	0.027	0.230					0.028	0.091		0.044	0.176	0.176
Final Departure Headway, hd (s)	6.71	5.52					6.48	5.99		6.33	5.82	5.82
Final Degree of Utilization, x	0.056	0.397					0.057	0.171		0.086	0.321	0.321
Move-Up Time, m (s)	2.3	2.3					2.3	2.3		2.3	2.3	2.3
Service Time, ts (s)	4.41	3.22					4.18	3.69		4.03	3.52	3.52

Capacity, Delay and Level of Service

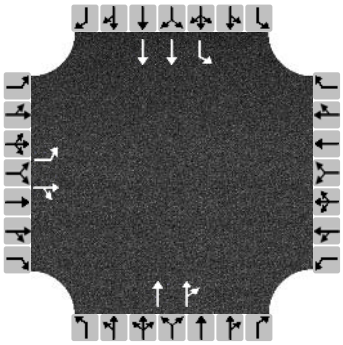
Flow Rate, v (veh/h)	30	259					32	103		49	199	199
Capacity	536	652					555	601		569	618	618
95% Queue Length, Q_{95} (veh)	0.2	1.9					0.2	0.6		0.3	1.4	1.4
Control Delay (s/veh)	9.8	11.8					9.6	9.9		9.6	11.3	11.3
Level of Service, LOS	A	B					A	A		A	B	B
Approach Delay (s/veh)	11.6						9.8			11.1		
Approach LOS	B						A			B		
Intersection Delay, s/veh | LOS	11.1						B					

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 14
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/4/2018	East/West Street	E. Imperial Highway
Analysis Year	2021	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Future + Project - PM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	6	4	75					203	271	61	94	
% Thrus in Shared Lane									50			
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	TR					T	TR		L	T	T
Flow Rate, v (veh/h)	6	79					102	373		61	47	47
Percent Heavy Vehicles	2	2					2	2		2	2	2

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20					3.20	3.20		3.20	3.20	3.20
Initial Degree of Utilization, x	0.005	0.070					0.090	0.331		0.054	0.042	0.042
Final Departure Headway, hd (s)	6.65	5.48					5.18	4.67		6.22	5.71	5.71
Final Degree of Utilization, x	0.011	0.120					0.146	0.483		0.105	0.075	0.075
Move-Up Time, m (s)	2.3	2.3					2.3	2.3		2.3	2.3	2.3
Service Time, ts (s)	4.35	3.18					2.88	2.37		3.92	3.41	3.41

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	6	79					102	373		61	47	47
Capacity	541	657					695	771		579	630	630
95% Queue Length, Q_{95} (veh)	0.0	0.4					0.5	2.7		0.4	0.2	0.2
Control Delay (s/veh)	9.4	8.9					8.8	11.7		9.6	8.9	8.9
Level of Service, LOS	A	A					A	B		A	A	A
Approach Delay (s/veh)	9.0						11.0			9.2		
Approach LOS	A						B			A		
Intersection Delay, s/veh | LOS	10.4						B					

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HCS7 Two-Way Stop-Control Report

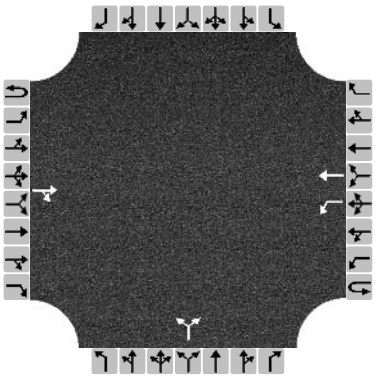
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future + Project - AM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 15
Jurisdiction	Downey / South Gate
East/West Street	Gardendale Street
North/South Street	Industrial Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			822	19		7	964			36		14				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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)						7					50					
Capacity, c (veh/h)						789					109					
v/c Ratio						0.01					0.46					
95% Queue Length, Q_{95} (veh)						0.0					2.0					
Control Delay (s/veh)						9.6					63.7					
Level of Service, LOS						A					F					
Approach Delay (s/veh)						0.1					63.7					
Approach LOS											F					

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HCS7 Two-Way Stop-Control Report

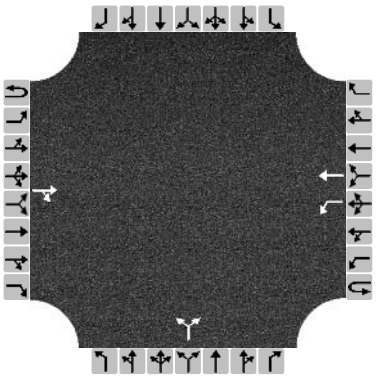
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future + Project - PM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 15
Jurisdiction	Downey / South Gate
East/West Street	Gardendale Street
North/South Street	Industrial Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			681	30		17	672			26		11				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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)						17					37					
Capacity, c (veh/h)						883					187					
v/c Ratio						0.02					0.20					
95% Queue Length, Q_{95} (veh)						0.1					0.7					
Control Delay (s/veh)						9.2					28.9					
Level of Service, LOS						A					D					
Approach Delay (s/veh)						0.2					28.9					
Approach LOS											D					

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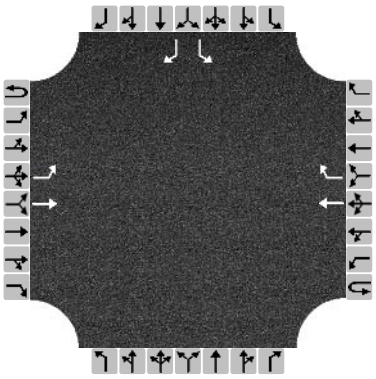
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future + Project - AM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 16
Jurisdiction	Downey/South Gate/LAC
East/West Street	Gardendale Street
North/South Street	Erickson Avenue
Peak Hour Factor	1.00
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	1	1	0	0	0	1	1		0	0	0		1	0	1
Configuration		L	T				T	R						L		R
Volume, V (veh/h)		238	600				938	266						36		33
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized	No				No				No				No			
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)		238												36		33
Capacity, c (veh/h)		576												38		319
v/c Ratio		0.41												0.96		0.10
95% Queue Length, Q_{95} (veh)		2.0												3.6		0.3
Control Delay (s/veh)		15.6												294.5		17.6
Level of Service, LOS		C												F		C
Approach Delay (s/veh)	4.4												162.1			
Approach LOS													F			

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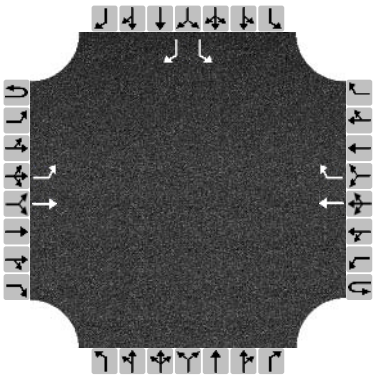
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future + Project - PM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 16
Jurisdiction	Downey/South Gate/LAC
East/West Street	Gardendale Street
North/South Street	Erickson Avenue
Peak Hour Factor	1.00
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	1	1	0	0	0	1	1		0	0	0		1	0	1
Configuration		L	T				T	R						L		R
Volume, V (veh/h)		47	626				515	53						218		195
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized	No				No				No				No			
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)		47												218		195
Capacity, c (veh/h)		998												185		557
v/c Ratio		0.05												1.18		0.35
95% Queue Length, Q_{95} (veh)		0.1												11.4		1.6
Control Delay (s/veh)		8.8												174.6		14.9
Level of Service, LOS		A												F		B
Approach Delay (s/veh)	0.6												99.2			
Approach LOS													F			

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HCS7 Two-Way Stop-Control Report

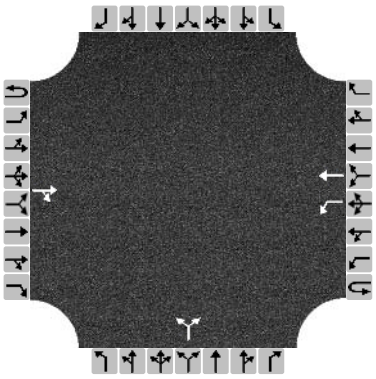
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future + Project - AM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 17
Jurisdiction	Downey / South Gate
East/West Street	Gardendale Street
North/South Street	Arizona Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			631	9		24	1175			29		28				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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)						24					57					
Capacity, c (veh/h)						939					133					
v/c Ratio						0.03					0.43					
95% Queue Length, Q_{95} (veh)						0.1					1.9					
Control Delay (s/veh)						8.9					51.2					
Level of Service, LOS						A					F					
Approach Delay (s/veh)						0.2					51.2					
Approach LOS											F					

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HCS7 Two-Way Stop-Control Report

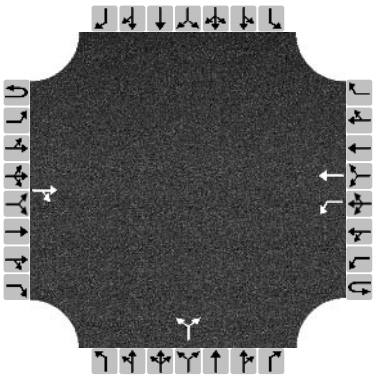
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future + Project - PM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 17
Jurisdiction	Downey / South Gate
East/West Street	Gardendale Street
North/South Street	Arizona Avenue
Peak Hour Factor	1.00
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	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume, V (veh/h)			834	13		17	566			6		33				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized		No				No				No				No		
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)						17					39					
Capacity, c (veh/h)						785					293					
v/c Ratio						0.02					0.13					
95% Queue Length, Q_{95} (veh)						0.1					0.5					
Control Delay (s/veh)						9.7					19.1					
Level of Service, LOS						A					C					
Approach Delay (s/veh)						0.3					19.1					
Approach LOS											C					

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HCS7 Two-Way Stop-Control Report

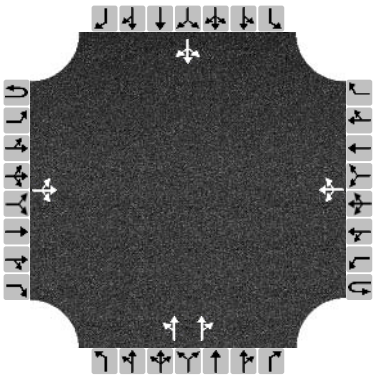
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future + Project - AM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 18
Jurisdiction	City of South Gate
East/West Street	Main Street
North/South Street	Industrial-Arizona
Peak Hour Factor	1.00
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	2	0		0	1	0
Configuration			LTR				LTR			LT		TR			LTR	
Volume, V (veh/h)		35	184	24		8	253	4		31	14	30		4	15	17
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		35				8				38		37			36	
Capacity, c (veh/h)		1301				1355				413		713			537	
v/c Ratio		0.03				0.01				0.09		0.05			0.07	
95% Queue Length, Q_{95} (veh)		0.1				0.0				0.3		0.2			0.2	
Control Delay (s/veh)		7.8				7.7				14.6		10.3			12.2	
Level of Service, LOS		A				A				B		B			B	
Approach Delay (s/veh)		1.3				0.3				12.7				12.2		
Approach LOS										B				B		

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HCS7 Two-Way Stop-Control Report

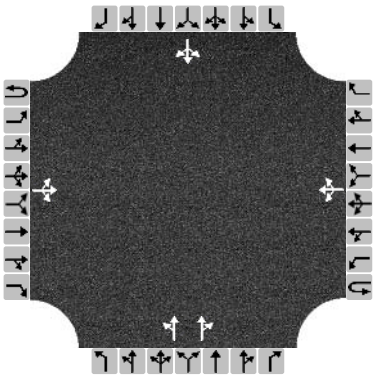
General Information

Analyst	JAS
Agency/Co.	LLG Engineers
Date Performed	10/4/2018
Analysis Year	2021
Time Analyzed	Future + Project - PM
Intersection Orientation	East-West
Project Description	Rancho Los Amigos South Campus

Site Information

Intersection	Int. 18
Jurisdiction	City of South Gate
East/West Street	Main Street
North/South Street	Industrial-Arizona
Peak Hour Factor	1.00
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	2	0		0	1	0
Configuration			LTR				LTR			LT		TR			LTR	
Volume, V (veh/h)		14	172	22		10	146	7		23	9	27		9	8	29
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

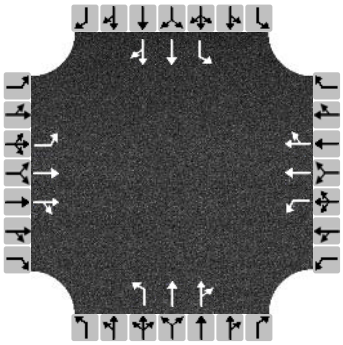
Flow Rate, v (veh/h)		14				10				28		32			46	
Capacity, c (veh/h)		1420				1372				529		789			712	
v/c Ratio		0.01				0.01				0.05		0.04			0.06	
95% Queue Length, Q_{95} (veh)		0.0				0.0				0.2		0.1			0.2	
Control Delay (s/veh)		7.6				7.6				12.2		9.8			10.4	
Level of Service, LOS		A				A				B		A			B	
Approach Delay (s/veh)		0.6				0.5				11.1				10.4		
Approach LOS										B				B		

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 27
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/3/2018	East/West Street	Amigos Avenue
Analysis Year	2021	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Future + Project - AM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	8	13	121	0	7	9	54	81	2	43	402	45
% Thrus in Shared Lane			50			50			50			50
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Flow Rate, v (veh/h)	8	7	128	0	4	13	54	41	43	43	201	246
Percent Heavy Vehicles	2	2	2	2	2	2	2	2	2	2	2	2

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
Initial Degree of Utilization, x	0.007	0.006	0.113	0.000	0.003	0.011	0.048	0.036	0.038	0.038	0.179	0.219
Final Departure Headway, hd (s)	6.71	6.21	5.55	6.98	6.48	5.97	6.50	6.00	5.97	5.87	5.37	5.24
Final Degree of Utilization, x	0.015	0.011	0.196	0.000	0.006	0.021	0.098	0.068	0.070	0.070	0.300	0.358
Move-Up Time, m (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Service Time, ts (s)	4.41	3.91	3.25	4.68	4.18	3.67	4.20	3.70	3.67	3.57	3.07	2.94

Capacity, Delay and Level of Service

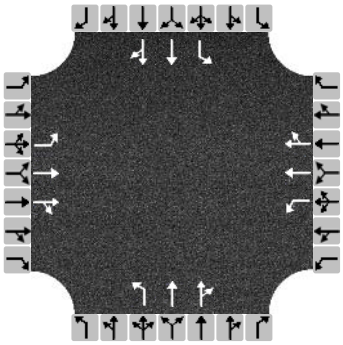
Flow Rate, v (veh/h)	8	7	128	0	4	13	54	41	43	43	201	246
Capacity	537	580	649	0	556	603	554	600	603	613	670	687
95% Queue Length, Q_{95} (veh)	0.0	0.0	0.7	0.0	0.0	0.1	0.3	0.2	0.2	0.2	1.3	1.6
Control Delay (s/veh)	9.5	9.0	9.6	9.7	9.2	8.8	9.9	9.1	9.1	9.0	10.4	10.8
Level of Service, LOS	A	A	A		A	A	A	A	A	A	B	B
Approach Delay (s/veh)	9.6			8.9			9.4			10.5		
Approach LOS	A			A			A			B		
Intersection Delay, s/veh | LOS	10.1						B					

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HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	JAS	Intersection	Int. 27
Agency/Co.	LLG Engineers	Jurisdiction	Downey / LA County
Date Performed	10/3/2018	East/West Street	Amigos Avenue
Analysis Year	2021	North/South Street	Erickson Avenue
Analysis Time Period (hrs)	0.25	Peak Hour Factor	1.00
Time Analyzed	Future + Project - PM		
Project Description	Rancho Los Amigos South Campus		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	20	18	66	1	8	12	101	337	2	15	105	8
% Thrus in Shared Lane			50			50			50			50
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Flow Rate, v (veh/h)	20	9	75	1	4	16	101	169	171	15	53	61
Percent Heavy Vehicles	2	2	2	2	2	2	2	2	2	2	2	2

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
Initial Degree of Utilization, x	0.018	0.008	0.067	0.001	0.004	0.014	0.090	0.150	0.152	0.013	0.047	0.054
Final Departure Headway, hd (s)	6.55	6.05	5.44	6.73	6.23	5.71	5.71	5.21	5.20	6.27	5.77	5.68
Final Degree of Utilization, x	0.036	0.015	0.113	0.002	0.007	0.025	0.160	0.244	0.246	0.026	0.084	0.095
Move-Up Time, m (s)	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Service Time, ts (s)	4.25	3.75	3.14	4.43	3.93	3.41	3.41	2.91	2.90	3.97	3.47	3.38

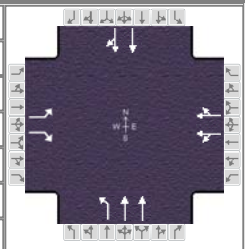
Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	20	9	75	1	4	16	101	169	171	15	53	61
Capacity	549	595	662	535	578	631	630	691	692	574	624	634
95% Queue Length, Q_{95} (veh)	0.1	0.0	0.4	0.0	0.0	0.1	0.6	1.0	1.0	0.1	0.3	0.3
Control Delay (s/veh)	9.5	8.8	8.8	9.4	9.0	8.6	9.5	9.6	9.6	9.1	9.0	9.0
Level of Service, LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay (s/veh)	9.0			8.7			9.6			9.0		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh | LOS	9.3						A					

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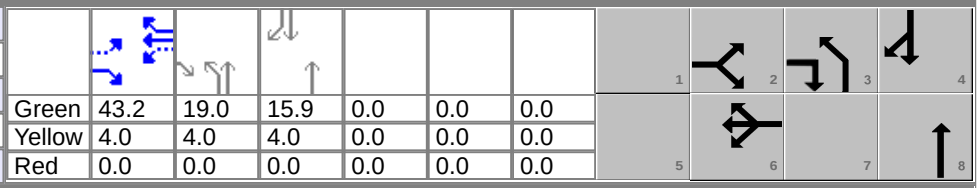
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Oct 10, 2018	Area Type	Other
Jurisdiction	City of South Gate	Time Period	Existing - AM	PHF	1.00
Urban Street	Wright/710 SB Off-Ramp	Analysis Year	2017	Analysis Period	1> 7:00
Intersection	Intersection #2	File Name	2 - AM.xus		
Project Description	Rancho Los Amigos South Campus				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	9		671	52	506	35	338	519			452	15

Signal Information			
Cycle, s	90.0	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	43.2	19.0	15.9	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		5.0		8.0	2.0	4.0		8.3
Phase Duration, s		47.2		47.2	23.0	42.8		19.9
Change Period, ($Y+R_c$), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0	3.1	3.0		3.0
Queue Clearance Time (g_s), s					18.3	10.6		13.8
Green Extension Time (g_e), s		0.0		0.0	0.6	2.1		2.0
Phase Call Probability					1.00	1.00		1.00
Max Out Probability					0.00	0.00		0.00

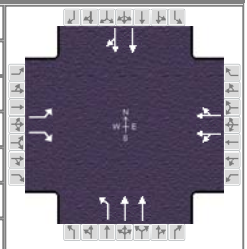
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5		12	1	6	16	3	8			4	14
Adjusted Flow Rate (*v*), veh/h	9		671	309		284	338	519			234	233
Adjusted Saturation Flow Rate (*s*), veh/h/ln	878		1610	1825		1691	1810	1809			1900	1878
Queue Service Time (g_s), s	0.6		19.9	0.0		9.4	16.3	8.6			11.8	10.5
Cycle Queue Clearance Time (g_c), s	10.0		19.9	9.1		9.4	16.3	8.6			11.8	10.5
Green Ratio (*g/C*)	0.48		0.69	0.48		0.48	0.21	0.43			0.18	0.18
Capacity (*c*), veh/h	409		1112	922		811	381	1560			335	331
Volume-to-Capacity Ratio (*X*)	0.022		0.604	0.336		0.349	0.887	0.333			0.700	0.702
Back of Queue (*Q*), ft/ln (95 th percentile)	5.6		252.9	176.1		163.7	290.3	151.9			208.8	207.7
Back of Queue (*Q*), veh/ln (95 th percentile)	0.2		10.1	7.0		6.5	11.6	6.1			8.4	8.3
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00		0.00	0.00		0.00	0.00	0.00			0.00	0.00
Uniform Delay (d_1), s/veh	17.8		7.4	14.5		14.6	34.5	17.0			34.8	34.8
Incremental Delay (d_2), s/veh	0.1		2.4	1.0		1.2	2.8	0.0			1.0	1.0
Initial Queue Delay (d_3), s/veh	0.0		0.0	0.0		0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh	17.9		9.8	15.5		15.8	37.3	17.0			35.8	35.9
Level of Service (LOS)	B		A	B		B	D	B			D	D
Approach Delay, s/veh / LOS	9.9		A	15.7		B	25.0		C	35.8		D
Intersection Delay, s/veh / LOS	20.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.26	B	2.09	B	1.68	B	2.13	B
Bicycle LOS Score / LOS		F	0.98	A	1.19	A	0.87	A

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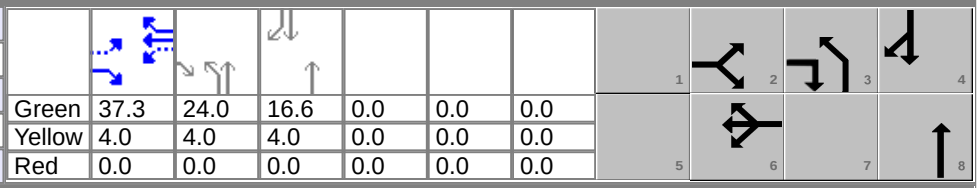
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Oct 10, 2018	Area Type	Other
Jurisdiction	City of South Gate	Time Period	Existing - PM	PHF	1.00
Urban Street	Wright/710 SB Off-Ramp	Analysis Year	2017	Analysis Period	1> 7:00
Intersection	Intersection #2	File Name	2 - PM.xus		
Project Description	Rancho Los Amigos South Campus				



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		522	55	397	53	440	680			474	9

Signal Information			
Cycle, s	90.0	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	37.3	24.0	16.6	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		5.0		8.0	2.0	4.0		8.3
Phase Duration, s		41.3		41.3	28.0	48.7		20.6
Change Period, ($Y+R_c$), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0	3.1	3.0		3.0
Queue Clearance Time (g_s), s					23.2	12.5		14.3
Green Extension Time (g_e), s		0.0		0.0	0.9	2.6		2.3
Phase Call Probability					1.00	1.00		1.00
Max Out Probability					0.00	0.00		0.03

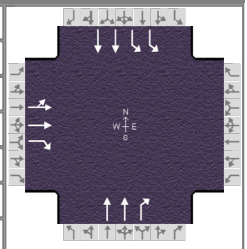
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5		12	1	6	16	3	8			4	14
Adjusted Flow Rate (*v*), veh/h	17		522	265		240	440	680			242	241
Adjusted Saturation Flow Rate (*s*), veh/h/ln	955		1610	1806		1663	1810	1809			1900	1887
Queue Service Time (g_s), s	1.1		13.7	1.1		8.9	21.2	10.5			12.3	10.7
Cycle Queue Clearance Time (g_c), s	10.0		13.7	8.6		8.9	21.2	10.5			12.3	10.7
Green Ratio (*g/C*)	0.41		0.68	0.41		0.41	0.27	0.50			0.18	0.18
Capacity (*c*), veh/h	382		1098	797		690	484	1796			351	349
Volume-to-Capacity Ratio (*X*)	0.045		0.475	0.332		0.348	0.910	0.379			0.690	0.691
Back of Queue (*Q*), ft/ln (95 th percentile)	11.9		188.1	170.7		157.5	355.3	179.5			212.5	211.9
Back of Queue (*Q*), veh/ln (95 th percentile)	0.5		7.5	6.8		6.3	14.2	7.2			8.5	8.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00		0.00	0.00		0.00	0.00	0.00			0.00	0.00
Uniform Delay (d_1), s/veh	21.4		6.7	17.9		18.0	31.9	14.1			34.3	34.3
Incremental Delay (d_2), s/veh	0.2		1.5	1.1		1.4	2.8	0.0			0.9	0.9
Initial Queue Delay (d_3), s/veh	0.0		0.0	0.0		0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh	21.6		8.2	19.0		19.4	34.8	14.1			35.2	35.2
Level of Service (LOS)	C		A	B		B	C	B			D	D
Approach Delay, s/veh / LOS	8.6		A	19.2		B	22.2		C	35.2		D
Intersection Delay, s/veh / LOS	21.2						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.27	B	2.10	B	1.67	B	2.12	B
Bicycle LOS Score / LOS		F	0.90	A	1.41	A	0.89	A

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HCS7 Signalized Intersection Results Summary

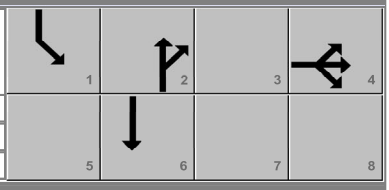
General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Apr 1, 2020	Area Type	Other
Jurisdiction	City of Paramount	Time Period	Existing - AM	PHF	1.00
Urban Street	Garfield/105 EB Off-Ramp	Analysis Year	2017	Analysis Period	1> 7:00
Intersection	Intersection #11	File Name	11 - AM.xus		
Project Description	Rancho Los Amigos South Campus				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	356	699	567					845	322	175	992	

Signal Information			
Cycle, s	70.0	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	23.5	6.1	28.4	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4				2	1	6
Case Number		11.0				7.3	2.0	4.0
Phase Duration, s		32.4				27.5	10.1	37.6
Change Period, (*Y+R c*), s		4.0				4.0	4.0	4.0
Max Allow Headway (*MAH*), s		3.2				0.0	3.1	0.0
Queue Clearance Time (*g s*), s		24.6					5.4	
Green Extension Time (*g e*), s		3.8				0.0	0.9	0.0
Phase Call Probability		1.00					0.97	
Max Out Probability		0.06					0.85	

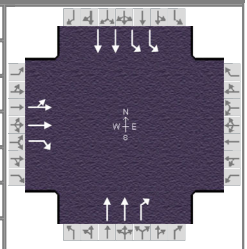
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14					2	12	1	6	
Adjusted Flow Rate (*v*), veh/h	548	507	567					845	322	175	992	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1840	1900	1610					1809	1610	1757	1809	
Queue Service Time (*g s*), s	17.6	15.2	22.6					14.2	11.6	3.4	13.7	
Cycle Queue Clearance Time (*g c*), s	17.6	15.2	22.6					14.2	11.6	3.4	13.7	
Green Ratio (*g/C*)	0.41	0.41	0.41					0.34	0.34	0.20	0.48	
Capacity (*c*), veh/h	746	770	653					1217	542	305	1738	
Volume-to-Capacity Ratio (*X*)	0.734	0.659	0.869					0.694	0.594	0.574	0.571	
Back of Queue (*Q*), ft/ln (95 th percentile)	274	248.4	316.2					248.9	205	61.9	220.5	
Back of Queue (*Q*), veh/ln (95 th percentile)	11.0	9.9	12.6					10.0	8.2	2.5	8.8	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00					0.00	0.00	0.00	0.00	
Uniform Delay (*d 1*), s/veh	17.6	16.9	19.1					20.1	19.3	30.7	13.0	
Incremental Delay (*d 2*), s/veh	0.5	0.4	3.3					3.3	4.7	0.6	1.4	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh	18.2	17.2	22.4					23.4	24.0	31.4	14.4	
Level of Service (LOS)	B	B	C					C	C	C	B	
Approach Delay, s/veh / LOS	19.4	B		0.0			23.6	C		16.9	B	
Intersection Delay, s/veh / LOS	19.9						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.31	B	2.46	B	1.71	B	1.89	B
Bicycle LOS Score / LOS	1.83	B			1.45	A	1.45	A

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HCS7 Signalized Intersection Results Summary

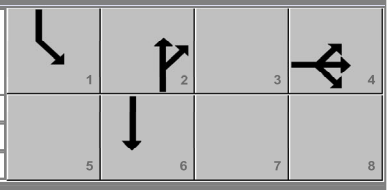
General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Apr 1, 2020	Area Type	Other
Jurisdiction	City of Paramount	Time Period	Existing - PM	PHF	1.00
Urban Street	Garfield/105 EB Off-Ramp	Analysis Year	2017	Analysis Period	1> 7:00
Intersection	Intersection #11	File Name	11 - PM.xus		
Project Description	Rancho Los Amigos South Campus				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	217	777	512					989	467	81	651	

Signal Information			
Cycle, s	70.0	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	27.3	4.8	26.0	0.0	0.0	0.0	
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4				2	1	6
Case Number		11.0				7.3	2.0	4.0
Phase Duration, s		30.0				31.3	8.8	40.0
Change Period, (*Y+R c*), s		4.0				4.0	4.0	4.0
Max Allow Headway (*MAH*), s		3.2				0.0	3.1	0.0
Queue Clearance Time (*g s*), s		22.5					3.5	
Green Extension Time (*g e*), s		3.4				0.0	1.1	0.0
Phase Call Probability		1.00					0.79	
Max Out Probability		0.02					0.31	

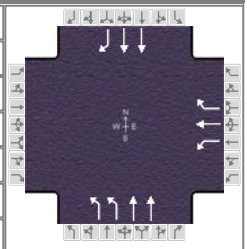
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14					2	12	1	6	
Adjusted Flow Rate (*v*), veh/h	517	477	512					989	467	81	651	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1861	1900	1610					1809	1610	1757	1809	
Queue Service Time (*g s*), s	16.9	14.8	20.5					16.1	17.5	1.5	7.5	
Cycle Queue Clearance Time (*g c*), s	16.9	14.8	20.5					16.1	17.5	1.5	7.5	
Green Ratio (*g/C*)	0.37	0.37	0.37					0.39	0.39	0.18	0.51	
Capacity (*c*), veh/h	690	705	597					1410	628	239	1862	
Volume-to-Capacity Ratio (*X*)	0.749	0.677	0.857					0.701	0.744	0.339	0.350	
Back of Queue (*Q*), ft/ln (50 th percentile)	166.3	147.6	177.3					163.4	178.4	15.8	66.2	
Back of Queue (*Q*), veh/ln (50 th percentile)	6.7	5.9	7.1					6.5	7.1	0.6	2.6	
Queue Storage Ratio (*RQ*) (50 th percentile)	0.00	0.00	0.00					0.00	0.00	0.00	0.00	
Uniform Delay (*d 1*), s/veh	19.2	18.5	20.3					17.9	18.4	31.1	10.0	
Incremental Delay (*d 2*), s/veh	0.6	0.4	1.4					2.9	7.8	0.3	0.5	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh	19.8	18.9	21.7					20.9	26.2	31.4	10.6	
Level of Service (LOS)	B	B	C					C	C	C	B	
Approach Delay, s/veh / LOS	20.2	C		0.0			22.6	C		12.9	B	
Intersection Delay, s/veh / LOS	19.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.31	B	2.46	B	1.71	B	1.88	B
Bicycle LOS Score / LOS	1.73	B			1.69	B	1.09	A

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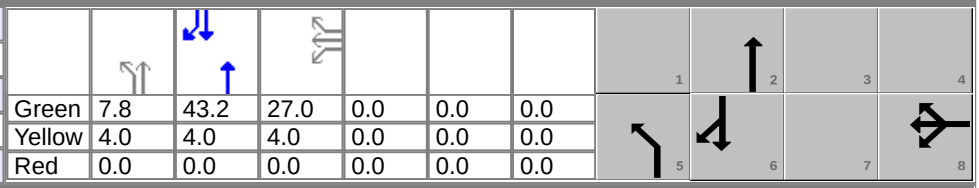
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Oct 15, 2018	Area Type	Other
Jurisdiction	City of South Gate	Time Period	Existing - AM	PHF	1.00
Urban Street	Paramount/105 WB Ramp	Analysis Year	2017	Analysis Period	1> 7:00
Intersection	Intersection #21	File Name	21 - AM.xus		
Project Description	Rancho Los Amigos South Campus				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				216	504	354	213	1001			801	526

Signal Information			
Cycle, s	90.0	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	7.8	43.2	27.0	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8	5	2		6
Case Number				9.0	2.0	4.0		7.3
Phase Duration, s				31.0	11.8	59.0		47.2
Change Period, ($Y+R_c$), s				4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s				3.2	3.1	0.0		0.0
Queue Clearance Time (g_s), s				24.7	7.3			
Green Extension Time (g_e), s				2.3	0.5	0.0		0.0
Phase Call Probability				1.00	1.00			
Max Out Probability				0.00	0.00			

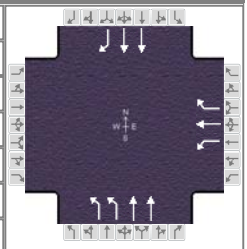
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18	5	2			6	16
Adjusted Flow Rate (*v*), veh/h				216	504	354	213	1001			801	526
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1810	1900	1610	1757	1809			1809	1610
Queue Service Time (g_s), s				8.5	22.7	17.7	5.3	13.4			13.3	22.7
Cycle Queue Clearance Time (g_c), s				8.5	22.7	17.7	5.3	13.4			13.3	22.7
Green Ratio (*g/C*)				0.30	0.30	0.30	0.21	0.61			0.48	0.48
Capacity (*c*), veh/h				543	570	483	303	2210			1737	773
Volume-to-Capacity Ratio (*X*)				0.398	0.884	0.732	0.703	0.453			0.461	0.680
Back of Queue (*Q*), ft/ln (95 th percentile)				160	384.8	271.3	102.8	209.6			226.8	339.8
Back of Queue (*Q*), veh/ln (95 th percentile)				6.4	15.4	10.9	4.1	8.4			9.1	13.6
Queue Storage Ratio (*RQ*) (95 th percentile)				0.00	0.00	0.00	0.00	0.00			0.00	0.00
Uniform Delay (d_1), s/veh				25.0	30.0	28.2	40.0	9.4			15.6	18.1
Incremental Delay (d_2), s/veh				0.2	1.9	0.8	1.1	0.7			0.9	4.8
Initial Queue Delay (d_3), s/veh				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh				25.2	31.8	29.1	41.1	10.1			16.5	22.8
Level of Service (LOS)				C	C	C	D	B			B	C
Approach Delay, s/veh / LOS	0.0			29.6		C	15.5		B	19.0		B
Intersection Delay, s/veh / LOS	21.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.47	B	2.31	B	1.87	B	1.67	B
Bicycle LOS Score / LOS			2.26	B	1.49	A	1.58	B

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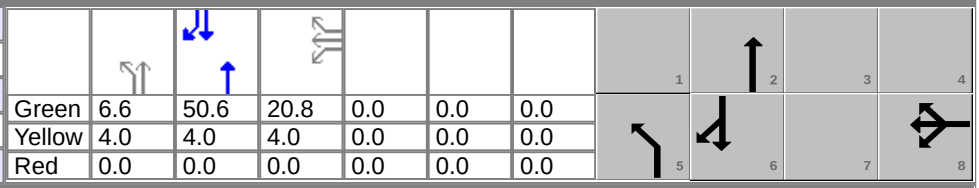
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Oct 15, 2018	Area Type	Other
Jurisdiction	City of South Gate	Time Period	Existing - PM	PHF	1.00
Urban Street	Paramount/105 WB Ramp	Analysis Year	2017	Analysis Period	1> 7:00
Intersection	Intersection #21	File Name	21 - PM.xus		
Project Description	Rancho Los Amigos South Campus				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				214	363	317	174	1047			781	367

Signal Information			
Cycle, s	90.0	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	6.6	50.6	20.8	0.0	0.0	0.0		
Yellow	4.0	4.0	4.0	0.0	0.0	0.0		
Red	0.0	0.0	0.0	0.0	0.0	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8	5	2		6
Case Number				9.0	2.0	4.0		7.3
Phase Duration, s				24.8	10.6	65.2		54.6
Change Period, ($Y+R_c$), s				4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s				3.2	3.1	0.0		0.0
Queue Clearance Time (g_s), s				19.0	6.3			
Green Extension Time (g_e), s				1.8	0.4	0.0		0.0
Phase Call Probability				1.00	0.99			
Max Out Probability				0.00	0.00			

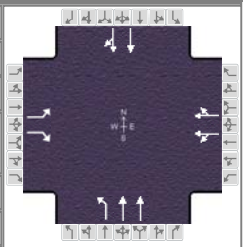
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18	5	2			6	16
Adjusted Flow Rate (*v*), veh/h				214	363	317	174	1047			781	367
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1810	1900	1610	1757	1809			1809	1610
Queue Service Time (g_s), s				9.3	16.3	17.0	4.3	11.7			10.9	11.6
Cycle Queue Clearance Time (g_c), s				9.3	16.3	17.0	4.3	11.7			10.9	11.6
Green Ratio (*g/C*)				0.23	0.23	0.23	0.25	0.68			0.56	0.56
Capacity (*c*), veh/h				418	439	372	259	2460			2032	904
Volume-to-Capacity Ratio (*X*)				0.512	0.827	0.852	0.671	0.426			0.384	0.406
Back of Queue (*Q*), ft/ln (95 th percentile)				177.6	296.8	269.7	84.4	171.3			182.7	183.2
Back of Queue (*Q*), veh/ln (95 th percentile)				7.1	11.9	10.8	3.4	6.9			7.3	7.3
Queue Storage Ratio (*RQ*) (95 th percentile)				0.00	0.00	0.00	0.00	0.00			0.00	0.00
Uniform Delay (d_1), s/veh				30.2	32.9	33.1	40.6	6.5			11.0	11.2
Incremental Delay (d_2), s/veh				0.4	1.5	2.2	1.1	0.5			0.6	1.4
Initial Queue Delay (d_3), s/veh				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh				30.5	34.4	35.3	41.7	7.0			11.6	12.5
Level of Service (LOS)				C	C	D	D	A			B	B
Approach Delay, s/veh / LOS	0.0			33.8	C		12.0	B		11.9	B	
Intersection Delay, s/veh / LOS	17.9						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.47	B	2.31	B	1.86	B	1.66	B
Bicycle LOS Score / LOS			1.96	B	1.49	A	1.43	A

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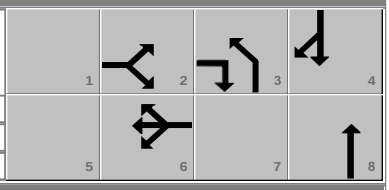
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Oct 10, 2018	Area Type	Other
Jurisdiction	City of South Gate	Time Period	Existing with Project - AM	PHF	1.00
Urban Street	Wright/710 SB Off-Ramp	Analysis Year	2017	Analysis Period	1> 7:00
Intersection	Intersection #2	File Name	2 - AM.xus		
Project Description	Rancho Los Amigos South Campus				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	9		671	98	506	35	338	519			452	15

Signal Information												
Cycle, s	90.0	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	43.2	19.0	15.9	0.0	0.0	0.0		
				Yellow	4.0	4.0	4.0	0.0	0.0	0.0		
				Red	0.0	0.0	0.0	0.0	0.0	0.0		



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		5.0		8.0	2.0	4.0		8.3
Phase Duration, s		47.2		47.2	23.0	42.8		19.9
Change Period, ($Y+R_c$), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0	3.1	3.0		3.0
Queue Clearance Time (g_s), s					18.3	10.6		13.8
Green Extension Time (g_e), s		0.0		0.0	0.6	2.1		2.0
Phase Call Probability					1.00	1.00		1.00
Max Out Probability					0.00	0.00		0.00

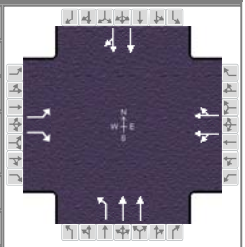
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5		12	1	6	16	3	8			4	14
Adjusted Flow Rate (*v*), veh/h	9		671	329		310	338	519			234	233
Adjusted Saturation Flow Rate (*s*), veh/h/ln	878		1610	1753		1695	1810	1809			1900	1878
Queue Service Time (g_s), s	0.6		19.9	5.7		10.5	16.3	8.6			11.8	10.5
Cycle Queue Clearance Time (g_c), s	11.1		19.9	10.4		10.5	16.3	8.6			11.8	10.5
Green Ratio (*g/C*)	0.48		0.69	0.48		0.48	0.21	0.43			0.18	0.18
Capacity (*c*), veh/h	399		1112	893		813	381	1560			335	331
Volume-to-Capacity Ratio (*X*)	0.023		0.604	0.368		0.381	0.887	0.333			0.700	0.702
Back of Queue (*Q*), ft/ln (95 th percentile)	5.8		252.9	190.9		182.8	290.3	151.9			208.8	207.7
Back of Queue (*Q*), veh/ln (95 th percentile)	0.2		10.1	7.6		7.3	11.6	6.1			8.4	8.3
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00		0.00	0.00		0.00	0.00	0.00			0.00	0.00
Uniform Delay (d_1), s/veh	18.4		7.4	14.8		14.9	34.5	17.0			34.8	34.8
Incremental Delay (d_2), s/veh	0.1		2.4	1.2		1.4	2.8	0.0			1.0	1.0
Initial Queue Delay (d_3), s/veh	0.0		0.0	0.0		0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh	18.5		9.8	16.0		16.3	37.3	17.0			35.8	35.9
Level of Service (LOS)	B		A	B		B	D	B			D	D
Approach Delay, s/veh / LOS	9.9		A	16.1		B	25.0		C	35.8		D
Intersection Delay, s/veh / LOS	20.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.26	B	2.09	B	1.68	B	2.13	B
Bicycle LOS Score / LOS		F	1.01	A	1.19	A	0.87	A

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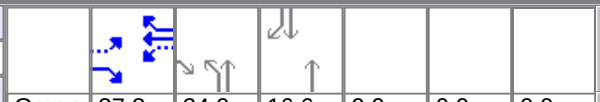
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Oct 10, 2018	Area Type	Other
Jurisdiction	City of South Gate	Time Period	Existing with Project - PM	PHF	1.00
Urban Street	Wright/710 SB Off-Ramp	Analysis Year	2017	Analysis Period	1> 7:00
Intersection	Intersection #2	File Name	2 - PM.xus		
Project Description	Rancho Los Amigos South Campus				

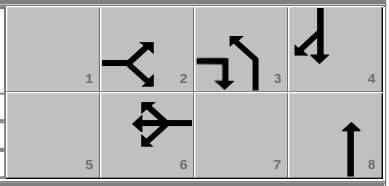


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	17		522	63	397	53	440	680			474	9

Signal Information			
Cycle, s	90.0	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	37.3	24.0	16.6	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		5.0		8.0	2.0	4.0		8.3
Phase Duration, s		41.3		41.3	28.0	48.7		20.6
Change Period, ($Y+R_c$), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0	3.1	3.0		3.0
Queue Clearance Time (g_s), s					23.2	12.5		14.3
Green Extension Time (g_e), s		0.0		0.0	0.9	2.6		2.3
Phase Call Probability					1.00	1.00		1.00
Max Out Probability					0.00	0.00		0.03

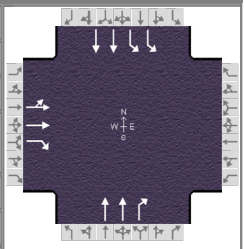
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5		12	1	6	16	3	8			4	14
Adjusted Flow Rate (*v*), veh/h	17		522	268		245	440	680			242	241
Adjusted Saturation Flow Rate (*s*), veh/h/ln	955		1610	1790		1664	1810	1809			1900	1887
Queue Service Time (g_s), s	1.1		13.7	2.4		9.1	21.2	10.5			12.3	10.7
Cycle Queue Clearance Time (g_c), s	10.2		13.7	8.9		9.1	21.2	10.5			12.3	10.7
Green Ratio (*g/C*)	0.41		0.68	0.41		0.41	0.27	0.50			0.18	0.18
Capacity (*c*), veh/h	380		1098	792		690	484	1796			351	349
Volume-to-Capacity Ratio (*X*)	0.045		0.475	0.339		0.354	0.910	0.379			0.690	0.691
Back of Queue (*Q*), ft/ln (95 th percentile)	12		188.1	173.5		160.9	355.3	179.5			212.5	211.9
Back of Queue (*Q*), veh/ln (95 th percentile)	0.5		7.5	6.9		6.4	14.2	7.2			8.5	8.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00		0.00	0.00		0.00	0.00	0.00			0.00	0.00
Uniform Delay (d_1), s/veh	21.6		6.7	18.0		18.1	31.9	14.1			34.3	34.3
Incremental Delay (d_2), s/veh	0.2		1.5	1.2		1.4	2.8	0.0			0.9	0.9
Initial Queue Delay (d_3), s/veh	0.0		0.0	0.0		0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh	21.8		8.2	19.1		19.5	34.8	14.1			35.2	35.2
Level of Service (LOS)	C		A	B		B	C	B			D	D
Approach Delay, s/veh / LOS	8.6		A	19.3		B	22.2		C	35.2		D
Intersection Delay, s/veh / LOS	21.3						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.27	B	2.10	B	1.67	B	2.12	B
Bicycle LOS Score / LOS		F	0.91	A	1.41	A	0.89	A

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HCS7 Signalized Intersection Results Summary

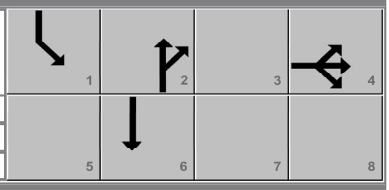
General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Apr 1, 2020	Area Type	Other
Jurisdiction	City of Paramount	Time Period	Existing with Project - AM	PHF	1.00
Urban Street	Garfield/105 EB Off-Ramp	Analysis Year	2017	Analysis Period	1> 7:00
Intersection	Intersection #11	File Name	11 - AM.xus		
Project Description	Rancho Los Amigos South Campus				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	475	699	567					891	322	175	998	

Signal Information			
Cycle, s	70.0	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	23.3	6.1	28.6	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4				2	1	6
Case Number		11.0				7.3	2.0	4.0
Phase Duration, s		32.6				27.3	10.1	37.4
Change Period, ($Y+R_c$), s		4.0				4.0	4.0	4.0
Max Allow Headway (*MAH*), s		3.2				0.0	3.1	0.0
Queue Clearance Time (g_s), s		24.5					5.4	
Green Extension Time (g_e), s		4.1				0.0	0.9	0.0
Phase Call Probability		1.00					0.97	
Max Out Probability		0.07					0.85	

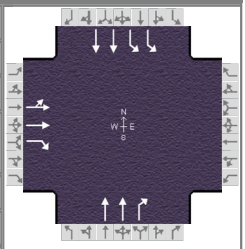
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14					2	12	1	6	
Adjusted Flow Rate (*v*), veh/h	610	564	567					891	322	175	998	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1829	1900	1610					1809	1610	1757	1809	
Queue Service Time (g_s), s	20.7	17.4	22.5					15.3	11.7	3.4	14.0	
Cycle Queue Clearance Time (g_c), s	20.7	17.4	22.5					15.3	11.7	3.4	14.0	
Green Ratio (*g/C*)	0.41	0.41	0.41					0.33	0.33	0.20	0.48	
Capacity (*c*), veh/h	748	777	658					1204	536	305	1725	
Volume-to-Capacity Ratio (*X*)	0.816	0.725	0.861					0.740	0.601	0.574	0.579	
Back of Queue (*Q*), ft/ln (95 th percentile)	315.4	277.6	313					267.6	206.2	61.9	224.2	
Back of Queue (*Q*), veh/ln (95 th percentile)	12.6	11.1	12.5					10.7	8.2	2.5	9.0	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00					0.00	0.00	0.00	0.00	
Uniform Delay (d_1), s/veh	18.4	17.4	18.9					20.7	19.5	30.7	13.2	
Incremental Delay (d_2), s/veh	1.5	0.5	3.1					4.1	4.9	0.6	1.4	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh	19.8	17.9	22.0					24.8	24.4	31.4	14.7	
Level of Service (LOS)	B	B	C					C	C	C	B	
Approach Delay, s/veh / LOS	19.9	B		0.0			24.7	C		17.1	B	
Intersection Delay, s/veh / LOS	20.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.31	B	2.46	B	1.71	B	1.89	B
Bicycle LOS Score / LOS	1.92	B			1.49	A	1.46	A

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HCS7 Signalized Intersection Results Summary

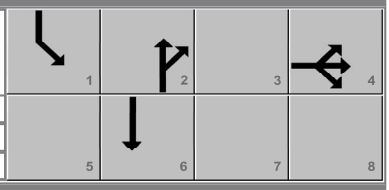
General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Apr 1, 2020	Area Type	Other
Jurisdiction	City of Paramount	Time Period	Existing with Project - PM	PHF	1.00
Urban Street	Garfield/105 EB Off-Ramp	Analysis Year	2017	Analysis Period	1> 7:00
Intersection	Intersection #11	File Name	11 - PM.xus		
Project Description	Rancho Los Amigos South Campus				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	237	777	512					997	467	81	688	

Signal Information			
Cycle, s	70.0	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	27.2	4.8	26.0	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4				2	1	6
Case Number		11.0				7.3	2.0	4.0
Phase Duration, s		30.0				31.2	8.8	40.0
Change Period, ($Y+R_c$), s		4.0				4.0	4.0	4.0
Max Allow Headway (*MAH*), s		3.2				0.0	3.1	0.0
Queue Clearance Time (g_s), s		22.5					3.5	
Green Extension Time (g_e), s		3.5				0.0	1.2	0.0
Phase Call Probability		1.00					0.79	
Max Out Probability		0.02					0.32	

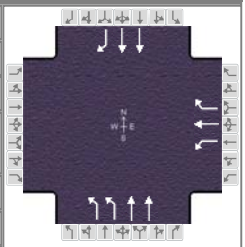
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14					2	12	1	6	
Adjusted Flow Rate (*v*), veh/h	527	487	512					997	467	81	688	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1858	1900	1610					1809	1610	1757	1809	
Queue Service Time (g_s), s	17.4	15.2	20.5					16.3	17.5	1.5	8.0	
Cycle Queue Clearance Time (g_c), s	17.4	15.2	20.5					16.3	17.5	1.5	8.0	
Green Ratio (*g/C*)	0.37	0.37	0.37					0.39	0.39	0.18	0.51	
Capacity (*c*), veh/h	690	706	598					1408	627	239	1860	
Volume-to-Capacity Ratio (*X*)	0.764	0.690	0.856					0.708	0.745	0.339	0.370	
Back of Queue (*Q*), ft/ln (95 th percentile)	277.6	252.2	285.4					271.3	288.1	28.5	127.8	
Back of Queue (*Q*), veh/ln (95 th percentile)	11.1	10.1	11.4					10.9	11.5	1.1	5.1	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00					0.00	0.00	0.00	0.00	
Uniform Delay (d_1), s/veh	19.3	18.6	20.3					18.0	18.4	31.1	10.2	
Incremental Delay (d_2), s/veh	0.7	0.5	1.4					3.0	7.9	0.3	0.6	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh	20.0	19.0	21.7					21.1	26.3	31.4	10.8	
Level of Service (LOS)	B	B	C					C	C	C	B	
Approach Delay, s/veh / LOS	20.2	C		0.0			22.7	C		12.9	B	
Intersection Delay, s/veh / LOS	19.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.31	B	2.46	B	1.71	B	1.88	B
Bicycle LOS Score / LOS	1.75	B			1.70	B	1.12	A

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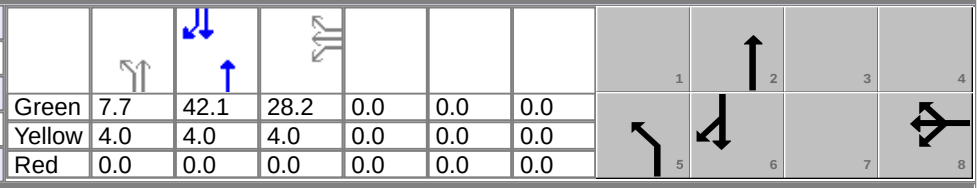
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Oct 15, 2018	Area Type	Other
Jurisdiction	City of South Gate	Time Period	Existing with Project - AM	PHF	1.00
Urban Street	Paramount/105 WB Ramp	Analysis Year	2017	Analysis Period	1> 7:00
Intersection	Intersection #21	File Name	21 - AM.xus		
Project Description	Rancho Los Amigos South Campus				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				216	504	445	213	1047			820	526

Signal Information			
Cycle, s	90.0	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	7.7	42.1	28.2	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8	5	2		6
Case Number				9.0	2.0	4.0		7.3
Phase Duration, s				32.2	11.7	57.8		46.1
Change Period, ($Y+R_c$), s				4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s				3.2	3.1	0.0		0.0
Queue Clearance Time (g_s), s				25.6	7.3			
Green Extension Time (g_e), s				2.5	0.5	0.0		0.0
Phase Call Probability				1.00	1.00			
Max Out Probability				0.00	0.00			

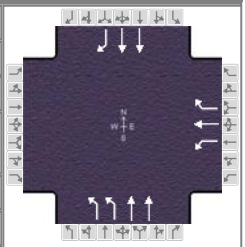
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18	5	2			6	16
Adjusted Flow Rate (*v*), veh/h				216	504	445	213	1047			820	526
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1810	1900	1610	1757	1809			1809	1610
Queue Service Time (g_s), s				8.4	22.3	23.6	5.3	14.7			14.0	23.2
Cycle Queue Clearance Time (g_c), s				8.4	22.3	23.6	5.3	14.7			14.0	23.2
Green Ratio (*g/C*)				0.31	0.31	0.31	0.21	0.60			0.47	0.47
Capacity (*c*), veh/h				566	595	504	302	2164			1692	753
Volume-to-Capacity Ratio (*X*)				0.381	0.848	0.883	0.705	0.484			0.485	0.698
Back of Queue (*Q*), ft/ln (95 th percentile)				156.4	375.8	346.2	102.8	228.2			238.1	350.4
Back of Queue (*Q*), veh/ln (95 th percentile)				6.3	15.0	13.8	4.1	9.1			9.5	14.0
Queue Storage Ratio (*RQ*) (95 th percentile)				0.00	0.00	0.00	0.00	0.00			0.00	0.00
Uniform Delay (d_1), s/veh				24.1	28.9	29.4	40.0	10.2			16.5	18.9
Incremental Delay (d_2), s/veh				0.2	1.3	2.1	1.1	0.8			1.0	5.3
Initial Queue Delay (d_3), s/veh				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh				24.3	30.2	31.4	41.2	11.0			17.5	24.3
Level of Service (LOS)				C	C	C	D	B			B	C
Approach Delay, s/veh / LOS	0.0			29.6		C	16.1		B	20.1		C
Intersection Delay, s/veh / LOS	21.7						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.47	B	2.31	B	1.88	B	1.67	B
Bicycle LOS Score / LOS			2.41	B	1.53	B	1.60	B

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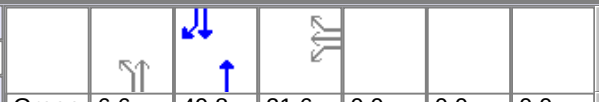
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Oct 15, 2018	Area Type	Other
Jurisdiction	City of South Gate	Time Period	Existing with Project - PM	PHF	1.00
Urban Street	Paramount/105 WB Ramp	Analysis Year	2017	Analysis Period	1> 7:00
Intersection	Intersection #21	File Name	21 - PM.xus		
Project Description	Rancho Los Amigos South Campus				

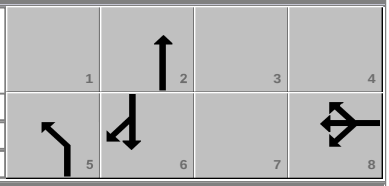


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				214	363	332	174	1055			891	367

Signal Information			
Cycle, s	90.0	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	6.6	49.8	21.6	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8	5	2		6
Case Number				9.0	2.0	4.0		7.3
Phase Duration, s				25.6	10.6	64.4		53.8
Change Period, ($Y+R_c$), s				4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s				3.2	3.1	0.0		0.0
Queue Clearance Time (g_s), s				19.8	6.3			
Green Extension Time (g_e), s				1.9	0.4	0.0		0.0
Phase Call Probability				1.00	0.99			
Max Out Probability				0.00	0.00			

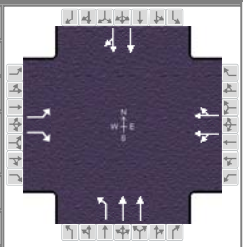
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18	5	2			6	16
Adjusted Flow Rate (*v*), veh/h				214	363	332	174	1055			891	367
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1810	1900	1610	1757	1809			1809	1610
Queue Service Time (g_s), s				9.2	16.1	17.8	4.3	12.2			13.2	11.9
Cycle Queue Clearance Time (g_c), s				9.2	16.1	17.8	4.3	12.2			13.2	11.9
Green Ratio (*g/C*)				0.24	0.24	0.24	0.34	0.67			0.55	0.55
Capacity (*c*), veh/h				435	456	387	259	2427			2000	890
Volume-to-Capacity Ratio (*X*)				0.492	0.795	0.858	0.673	0.435			0.446	0.412
Back of Queue (*Q*), ft/ln (95 th percentile)				175.1	292.7	279.4	84.4	180.7			215.9	188.2
Back of Queue (*Q*), veh/ln (95 th percentile)				7.0	11.7	11.2	3.4	7.2			8.6	7.5
Queue Storage Ratio (*RQ*) (95 th percentile)				0.00	0.00	0.00	0.00	0.00			0.00	0.00
Uniform Delay (d_1), s/veh				29.5	32.1	32.7	40.6	6.9			11.9	11.7
Incremental Delay (d_2), s/veh				0.3	1.2	2.2	1.1	0.6			0.7	1.4
Initial Queue Delay (d_3), s/veh				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh				29.8	33.3	34.9	41.8	7.5			12.7	13.1
Level of Service (LOS)				C	C	C	D	A			B	B
Approach Delay, s/veh / LOS	0.0			33.1		C	12.3		B	12.8		B
Intersection Delay, s/veh / LOS	18.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.47	B	2.31	B	1.86	B	1.66	B
Bicycle LOS Score / LOS			1.99	B	1.50	B	1.53	B

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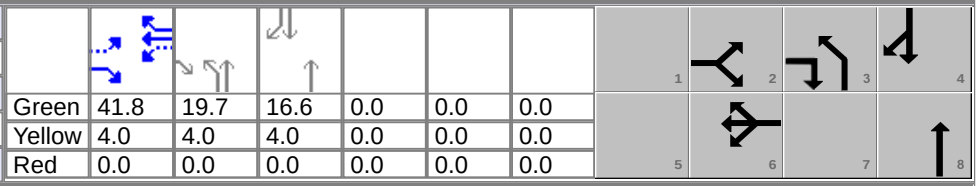
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Oct 10, 2018	Area Type	Other
Jurisdiction	City of South Gate	Time Period	Future Without Project - AM	PHF	1.00
Urban Street	Wright/710 SB Off-Ramp	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	Intersection #2	File Name	2 - AM.xus		
Project Description	Rancho Los Amigos South Campus				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	9		698	40	526	36	352	545			472	16

Signal Information			
Cycle, s	90.0	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	41.8	19.7	16.6	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		5.0		8.0	2.0	4.0		8.3
Phase Duration, s		45.8		45.8	23.7	44.2		20.6
Change Period, ($Y+R_c$), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0	3.1	3.0		3.0
Queue Clearance Time (g_s), s					19.0	10.8		14.5
Green Extension Time (g_e), s		0.0		0.0	0.7	2.2		2.1
Phase Call Probability					1.00	1.00		1.00
Max Out Probability					0.00	0.00		0.00

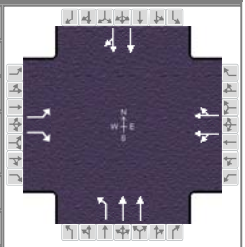
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5		12	1	6	16	3	8			4	14
Adjusted Flow Rate (*v*), veh/h	9		698	316		286	352	545			245	243
Adjusted Saturation Flow Rate (*s*), veh/h/ln	862		1610	1849		1691	1810	1809			1900	1878
Queue Service Time (g_s), s	0.6		21.9	0.0		9.8	17.0	8.8			12.5	10.9
Cycle Queue Clearance Time (g_c), s	10.4		21.9	9.6		9.8	17.0	8.8			12.5	10.9
Green Ratio (*g/C*)	0.46		0.68	0.46		0.46	0.22	0.45			0.18	0.18
Capacity (*c*), veh/h	386		1099	903		785	395	1617			350	346
Volume-to-Capacity Ratio (*X*)	0.023		0.635	0.349		0.365	0.891	0.337			0.701	0.703
Back of Queue (*Q*), ft/ln (95 th percentile)	5.9		276.4	187.2		172.6	299.3	155.1			215.3	213.9
Back of Queue (*Q*), veh/ln (95 th percentile)	0.2		11.1	7.5		6.9	12.0	6.2			8.6	8.6
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00		0.00	0.00		0.00	0.00	0.00			0.00	0.00
Uniform Delay (d_1), s/veh	18.9		8.0	15.5		15.6	34.1	16.2			34.4	34.4
Incremental Delay (d_2), s/veh	0.1		2.8	1.1		1.3	2.8	0.0			1.0	1.0
Initial Queue Delay (d_3), s/veh	0.0		0.0	0.0		0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh	19.0		10.8	16.6		16.9	36.9	16.2			35.3	35.4
Level of Service (LOS)	B		B	B		B	D	B			D	D
Approach Delay, s/veh / LOS	10.9		B	16.7		B	24.4		C	35.4		D
Intersection Delay, s/veh / LOS	21.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.26	B	2.09	B	1.68	B	2.12	B
Bicycle LOS Score / LOS		F	0.98	A	1.23	A	0.89	A

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HCS7 Signalized Intersection Results Summary

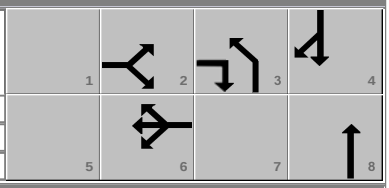
General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Oct 10, 2018	Area Type	Other
Jurisdiction	City of South Gate	Time Period	Future Without Project - PM	PHF	1.00
Urban Street	Wright/710 SB Off-Ramp	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	Intersection #2	File Name	2 - PM.xus		
Project Description	Rancho Los Amigos South Campus				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	18		543	53	413	55	458	710			498	9

Signal Information			
Cycle, s	90.0	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	35.7	24.9	17.4	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		5.0		8.0	2.0	4.0		8.3
Phase Duration, s		39.7		39.7	28.9	50.3		21.4
Change Period, ($Y+R_c$), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0	3.1	3.0		3.0
Queue Clearance Time (g_s), s					24.0	12.7		15.0
Green Extension Time (g_e), s		0.0		0.0	0.9	2.7		2.4
Phase Call Probability					1.00	1.00		1.00
Max Out Probability					0.00	0.00		0.06

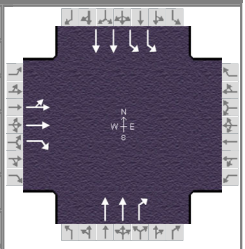
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5		12	1	6	16	3	8			4	14
Adjusted Flow Rate (*v*), veh/h	18		543	274		247	458	710			254	253
Adjusted Saturation Flow Rate (*s*), veh/h/ln	940		1610	1815		1662	1810	1809			1900	1888
Queue Service Time (g_s), s	1.2		14.9	1.1		9.5	22.0	10.7			13.0	11.2
Cycle Queue Clearance Time (g_c), s	10.7		14.9	9.2		9.5	22.0	10.7			13.0	11.2
Green Ratio (*g/C*)	0.40		0.67	0.40		0.40	0.28	0.51			0.19	0.19
Capacity (*c*), veh/h	354		1085	767		659	502	1862			367	364
Volume-to-Capacity Ratio (*X*)	0.051		0.501	0.357		0.375	0.913	0.381			0.693	0.694
Back of Queue (*Q*), ft/ln (95 th percentile)	13.3		203.8	184.9		170.1	366	179.8			219.9	219.3
Back of Queue (*Q*), veh/ln (95 th percentile)	0.5		8.2	7.4		6.8	14.6	7.2			8.8	8.8
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00		0.00	0.00		0.00	0.00	0.00			0.00	0.00
Uniform Delay (d_1), s/veh	23.0		7.2	19.1		19.3	31.5	13.2			33.8	33.8
Incremental Delay (d_2), s/veh	0.3		1.7	1.3		1.6	2.8	0.0			0.9	0.9
Initial Queue Delay (d_3), s/veh	0.0		0.0	0.0		0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh	23.3		8.9	20.4		20.9	34.3	13.2			34.7	34.7
Level of Service (LOS)	C		A	C		C	C	B			C	C
Approach Delay, s/veh / LOS	9.3		A	20.7		C	21.5		C	34.7		C
Intersection Delay, s/veh / LOS	21.3						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.27	B	2.10	B	1.67	B	2.12	B
Bicycle LOS Score / LOS		F	0.92	A	1.45	A	0.91	A

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HCS7 Signalized Intersection Results Summary

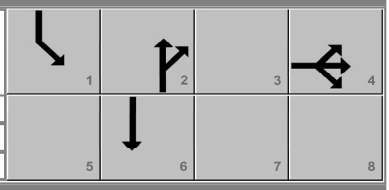
General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Apr 1, 2020	Area Type	Other
Jurisdiction	City of Paramount	Time Period	Future Without Project - AM	PHF	1.00
Urban Street	Garfield/105 EB Off-Ramp	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	Intersection #11	File Name	11 - AM.xus		
Project Description	Rancho Los Amigos South Campus				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	333	727	590					869	335	182	1038	

Signal Information			
Cycle, s	70.0	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	22.6	6.1	29.3	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4				2	1	6
Case Number		11.0				7.3	2.0	4.0
Phase Duration, s		33.3				26.6	10.1	36.7
Change Period, ($Y+R_c$), s		4.0				4.0	4.0	4.0
Max Allow Headway (*MAH*), s		3.2				0.0	3.1	0.0
Queue Clearance Time (g_s), s		25.5					5.5	
Green Extension Time (g_e), s		3.8				0.0	0.8	0.0
Phase Call Probability		1.00					0.97	
Max Out Probability		0.07					0.89	

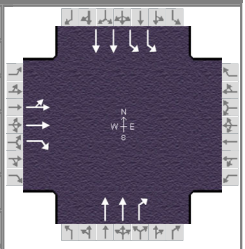
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14					2	12	1	6	
Adjusted Flow Rate (*v*), veh/h	551	509	590					869	335	182	1038	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1844	1900	1610					1809	1610	1757	1809	
Queue Service Time (g_s), s	17.3	14.9	23.5					15.0	12.5	3.5	15.0	
Cycle Queue Clearance Time (g_c), s	17.3	14.9	23.5					15.0	12.5	3.5	15.0	
Green Ratio (*g/C*)	0.42	0.42	0.42					0.32	0.32	0.20	0.47	
Capacity (*c*), veh/h	773	796	675					1166	519	306	1688	
Volume-to-Capacity Ratio (*X*)	0.713	0.639	0.874					0.745	0.645	0.594	0.615	
Back of Queue (*Q*), ft/ln (95 th percentile)	267.9	242.3	328.3					265.8	221.4	64.6	239.9	
Back of Queue (*Q*), veh/ln (95 th percentile)	10.7	9.7	13.1					10.6	8.9	2.6	9.6	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00					0.00	0.00	0.00	0.00	
Uniform Delay (d_1), s/veh	16.8	16.1	18.6					21.2	20.3	30.8	14.0	
Incremental Delay (d_2), s/veh	0.5	0.3	4.1					4.3	6.1	0.7	1.7	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh	17.3	16.5	22.7					25.5	26.4	31.4	15.6	
Level of Service (LOS)	B	B	C					C	C	C	B	
Approach Delay, s/veh / LOS	19.0	B		0.0			25.7	C		18.0	B	
Intersection Delay, s/veh / LOS	20.7						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.31	B	2.46	B	1.71	B	1.89	B
Bicycle LOS Score / LOS	1.85	B			1.48	A	1.49	A

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HCS7 Signalized Intersection Results Summary

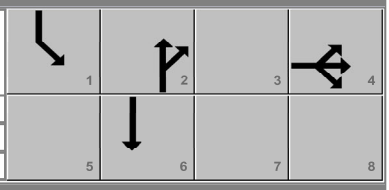
General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Apr 1, 2020	Area Type	Other
Jurisdiction	City of Paramount	Time Period	Future Without Project - PM	PHF	1.00
Urban Street	Garfield/105 EB Off-Ramp	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	Intersection #11	File Name	11 - PM.xus		
Project Description	Rancho Los Amigos South Campus				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	216	808	532					1037	486	84	670	

Signal Information			
Cycle, s	70.0	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	26.3	4.8	26.9	0.0	0.0	0.0	
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4				2	1	6
Case Number		11.0				7.3	2.0	4.0
Phase Duration, s		30.9				30.3	8.8	39.1
Change Period, ($Y+R_c$), s		4.0				4.0	4.0	4.0
Max Allow Headway (*MAH*), s		3.2				0.0	3.1	0.0
Queue Clearance Time (g_s), s		23.3					3.6	
Green Extension Time (g_e), s		3.6				0.0	1.1	0.0
Phase Call Probability		1.00					0.80	
Max Out Probability		0.03					0.33	

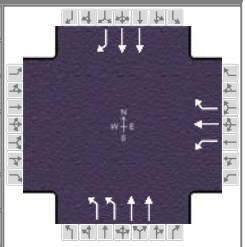
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14					2	12	1	6	
Adjusted Flow Rate (*v*), veh/h	533	491	532					1037	486	84	670	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1862	1900	1610					1809	1610	1757	1809	
Queue Service Time (g_s), s	17.3	15.0	21.3					17.6	18.9	1.6	7.9	
Cycle Queue Clearance Time (g_c), s	17.3	15.0	21.3					17.6	18.9	1.6	7.9	
Green Ratio (*g/C*)	0.38	0.38	0.38					0.38	0.38	0.18	0.50	
Capacity (*c*), veh/h	715	729	618					1360	605	242	1816	
Volume-to-Capacity Ratio (*X*)	0.746	0.674	0.861					0.763	0.803	0.347	0.369	
Back of Queue (*Q*), ft/ln (95 th percentile)	275.2	249.2	295.1					294.1	319	29.5	128	
Back of Queue (*Q*), veh/ln (95 th percentile)	11.0	10.0	11.8					11.8	12.8	1.2	5.1	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00					0.00	0.00	0.00	0.00	
Uniform Delay (d_1), s/veh	18.6	17.9	19.9					19.1	19.5	31.1	10.7	
Incremental Delay (d_2), s/veh	0.6	0.4	1.8					4.1	10.8	0.3	0.6	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh	19.2	18.3	21.6					23.2	30.3	31.4	11.2	
Level of Service (LOS)	B	B	C					C	C	C	B	
Approach Delay, s/veh / LOS	19.8	B		0.0			25.5	C		13.5	B	
Intersection Delay, s/veh / LOS	20.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.31	B	2.46	B	1.71	B	1.88	B
Bicycle LOS Score / LOS	1.77	B			1.74	B	1.11	A

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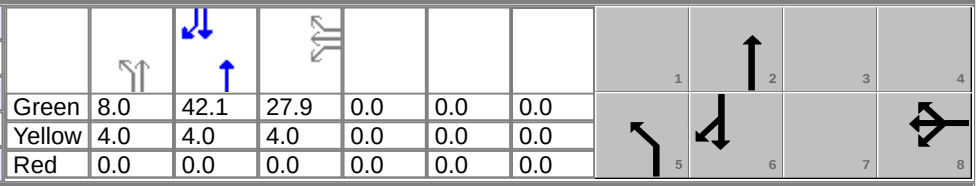
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Oct 15, 2018	Area Type	Other
Jurisdiction	City of South Gate	Time Period	Future Without Project - AM	PHF	1.00
Urban Street	Paramount/105 WB Ramp	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	Intersection #21	File Name	21 - AM.xus		
Project Description	Rancho Los Amigos South Campus				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				225	524	339	222	1035			824	547

Signal Information			
Cycle, s	90.0	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	8.0	42.1	27.9	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8	5	2		6
Case Number				9.0	2.0	4.0		7.3
Phase Duration, s				31.9	12.0	58.1		46.1
Change Period, ($Y+R_c$), s				4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s				3.2	3.1	0.0		0.0
Queue Clearance Time (g_s), s				25.6	7.5			
Green Extension Time (g_e), s				2.3	0.5	0.0		0.0
Phase Call Probability				1.00	1.00			
Max Out Probability				0.00	0.00			

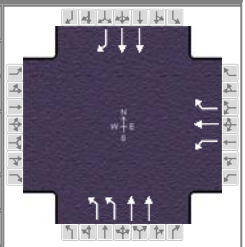
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18	5	2			6	16
Adjusted Flow Rate (*v*), veh/h				225	524	339	222	1035			824	547
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1810	1900	1610	1757	1809			1809	1610
Queue Service Time (g_s), s				8.8	23.6	16.6	5.5	14.4			14.1	24.7
Cycle Queue Clearance Time (g_c), s				8.8	23.6	16.6	5.5	14.4			14.1	24.7
Green Ratio (*g/C*)				0.31	0.31	0.31	0.30	0.60			0.47	0.47
Capacity (*c*), veh/h				562	590	500	312	2173			1692	753
Volume-to-Capacity Ratio (*X*)				0.401	0.889	0.678	0.712	0.476			0.487	0.727
Back of Queue (*Q*), ft/ln (95 th percentile)				164.6	396.2	255.4	107.1	224			239.8	371.1
Back of Queue (*Q*), veh/ln (95 th percentile)				6.6	15.8	10.2	4.3	9.0			9.6	14.8
Queue Storage Ratio (*RQ*) (95 th percentile)				0.00	0.00	0.00	0.00	0.00			0.00	0.00
Uniform Delay (d_1), s/veh				24.4	29.6	27.1	39.9	10.0			16.5	19.3
Incremental Delay (d_2), s/veh				0.2	1.9	0.6	1.1	0.8			1.0	6.1
Initial Queue Delay (d_3), s/veh				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh				24.6	31.4	27.7	41.0	10.8			17.5	25.4
Level of Service (LOS)				C	C	C	D	B			B	C
Approach Delay, s/veh / LOS	0.0			28.9		C	16.1		B	20.7		C
Intersection Delay, s/veh / LOS	21.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.47	B	2.31	B	1.88	B	1.67	B
Bicycle LOS Score / LOS			2.28	B	1.52	B	1.62	B

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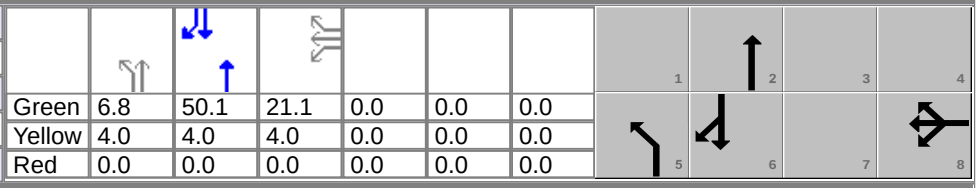
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Oct 15, 2018	Area Type	Other
Jurisdiction	City of South Gate	Time Period	Future Without Project - PM	PHF	1.00
Urban Street	Paramount/105 WB Ramp	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	Intersection #21	File Name	21 - PM.xus		
Project Description	Rancho Los Amigos South Campus				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				223	378	322	182	1095			780	382

Signal Information			
Cycle, s	90.0	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	6.8	50.1	21.1	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8	5	2		6
Case Number				9.0	2.0	4.0		7.3
Phase Duration, s				25.1	10.8	64.9		54.1
Change Period, ($Y+R_c$), s				4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s				3.2	3.1	0.0		0.0
Queue Clearance Time (g_s), s				19.2	6.5			
Green Extension Time (g_e), s				1.8	0.4	0.0		0.0
Phase Call Probability				1.00	0.99			
Max Out Probability				0.01	0.00			

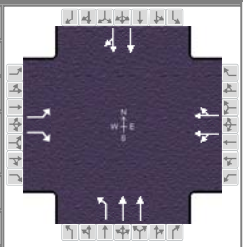
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18	5	2			6	16
Adjusted Flow Rate (*v*), veh/h				223	378	322	182	1095			780	382
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1810	1900	1610	1757	1809			1809	1610
Queue Service Time (g_s), s				9.7	17.1	17.2	4.5	12.6			11.0	12.4
Cycle Queue Clearance Time (g_c), s				9.7	17.1	17.2	4.5	12.6			11.0	12.4
Green Ratio (*g/C*)				0.23	0.23	0.23	0.31	0.68			0.56	0.56
Capacity (*c*), veh/h				423	444	377	266	2450			2015	897
Volume-to-Capacity Ratio (*X*)				0.527	0.851	0.855	0.683	0.447			0.387	0.426
Back of Queue (*Q*), ft/ln (95 th percentile)				185.7	309.3	273.2	88.3	184.3			185	194.6
Back of Queue (*Q*), veh/ln (95 th percentile)				7.4	12.4	10.9	3.5	7.4			7.4	7.8
Queue Storage Ratio (*RQ*) (95 th percentile)				0.00	0.00	0.00	0.00	0.00			0.00	0.00
Uniform Delay (d_1), s/veh				30.1	33.0	33.0	40.5	6.7			11.3	11.6
Incremental Delay (d_2), s/veh				0.4	1.8	2.2	1.2	0.6			0.6	1.5
Initial Queue Delay (d_3), s/veh				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh				30.5	34.8	35.2	41.7	7.3			11.8	13.1
Level of Service (LOS)				C	C	D	D	A			B	B
Approach Delay, s/veh / LOS	0.0			33.9	C		12.2	B		12.2	B	
Intersection Delay, s/veh / LOS	18.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.47	B	2.31	B	1.86	B	1.66	B
Bicycle LOS Score / LOS			2.01	B	1.54	B	1.45	A

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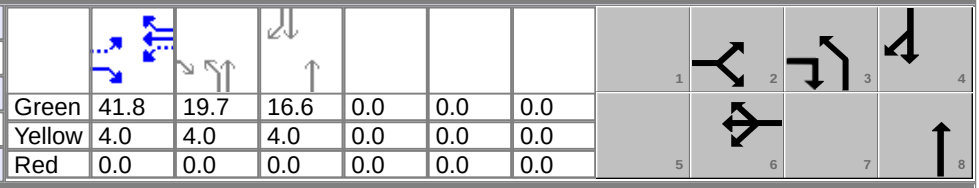
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Oct 10, 2018	Area Type	Other
Jurisdiction	City of South Gate	Time Period	Future With Project - AM	PHF	1.00
Urban Street	Wright/710 SB Off-Ramp	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	Intersection #2	File Name	2 - AM.xus		
Project Description	Rancho Los Amigos South Campus				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	9		698	86	526	36	352	545			472	16

Signal Information			
Cycle, s	90.0	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	41.8	19.7	16.6	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		5.0		8.0	2.0	4.0		8.3
Phase Duration, s		45.8		45.8	23.7	44.2		20.6
Change Period, ($Y+R_c$), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0	3.1	3.0		3.0
Queue Clearance Time (g_s), s					19.0	10.8		14.5
Green Extension Time (g_e), s		0.0		0.0	0.7	2.2		2.1
Phase Call Probability					1.00	1.00		1.00
Max Out Probability					0.00	0.00		0.00

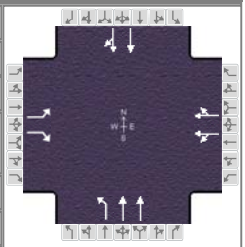
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5		12	1	6	16	3	8			4	14
Adjusted Flow Rate (*v*), veh/h	9		698	335		313	352	545			245	243
Adjusted Saturation Flow Rate (*s*), veh/h/ln	862		1610	1776		1694	1810	1809			1900	1878
Queue Service Time (g_s), s	0.6		21.9	5.0		10.9	17.0	8.8			12.5	10.9
Cycle Queue Clearance Time (g_c), s	11.6		21.9	10.8		10.9	17.0	8.8			12.5	10.9
Green Ratio (*g/C*)	0.46		0.68	0.46		0.46	0.22	0.45			0.18	0.18
Capacity (*c*), veh/h	375		1099	874		786	395	1617			350	346
Volume-to-Capacity Ratio (*X*)	0.024		0.635	0.383		0.398	0.891	0.337			0.701	0.703
Back of Queue (*Q*), ft/ln (95 th percentile)	6		276.4	200		192	299.3	155.1			215.3	213.9
Back of Queue (*Q*), veh/ln (95 th percentile)	0.2		11.1	8.0		7.7	12.0	6.2			8.6	8.6
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00		0.00	0.00		0.00	0.00	0.00			0.00	0.00
Uniform Delay (d_1), s/veh	19.6		8.0	15.7		15.9	34.1	16.2			34.4	34.4
Incremental Delay (d_2), s/veh	0.1		2.8	1.3		1.5	2.8	0.0			1.0	1.0
Initial Queue Delay (d_3), s/veh	0.0		0.0	0.0		0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh	19.8		10.8	17.0		17.4	36.9	16.2			35.3	35.4
Level of Service (LOS)	B		B	B		B	D	B			D	D
Approach Delay, s/veh / LOS	10.9		B	17.2		B	24.4		C	35.4		D
Intersection Delay, s/veh / LOS	21.2						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.26	B	2.09	B	1.68	B	2.12	B
Bicycle LOS Score / LOS		F	1.02	A	1.23	A	0.89	A

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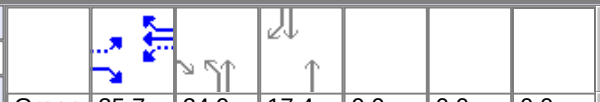
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Oct 10, 2018	Area Type	Other
Jurisdiction	City of South Gate	Time Period	Future With Project - PM	PHF	1.00
Urban Street	Wright/710 SB Off-Ramp	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	Intersection #2	File Name	2 - PM.xus		
Project Description	Rancho Los Amigos South Campus				

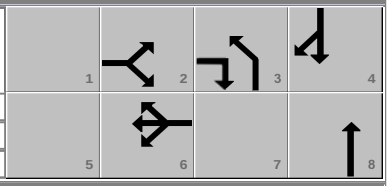


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	18		543	61	413	55	458	710			498	9

Signal Information			
Cycle, s	90.0	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	35.7	24.9	17.4	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6	3	8		4
Case Number		5.0		8.0	2.0	4.0		8.3
Phase Duration, s		39.7		39.7	28.9	50.3		21.4
Change Period, ($Y+R_c$), s		4.0		4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s		0.0		0.0	3.1	3.0		3.0
Queue Clearance Time (g_s), s					24.0	12.7		15.0
Green Extension Time (g_e), s		0.0		0.0	0.9	2.7		2.4
Phase Call Probability					1.00	1.00		1.00
Max Out Probability					0.00	0.00		0.06

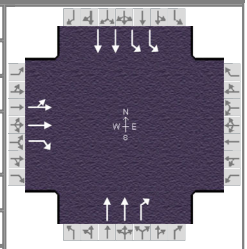
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5		12	1	6	16	3	8			4	14
Adjusted Flow Rate (*v*), veh/h	18		543	277		252	458	710			254	253
Adjusted Saturation Flow Rate (*s*), veh/h/ln	940		1610	1800		1664	1810	1809			1900	1888
Queue Service Time (g_s), s	1.2		14.9	2.5		9.7	22.0	10.7			13.0	11.2
Cycle Queue Clearance Time (g_c), s	10.9		14.9	9.5		9.7	22.0	10.7			13.0	11.2
Green Ratio (*g/C*)	0.40		0.67	0.40		0.40	0.28	0.51			0.19	0.19
Capacity (*c*), veh/h	352		1085	762		660	502	1862			367	364
Volume-to-Capacity Ratio (*X*)	0.051		0.501	0.364		0.382	0.913	0.381			0.693	0.694
Back of Queue (*Q*), ft/ln (95 th percentile)	13.3		203.8	188.2		174	366	179.8			219.9	219.3
Back of Queue (*Q*), veh/ln (95 th percentile)	0.5		8.2	7.5		7.0	14.6	7.2			8.8	8.8
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00		0.00	0.00		0.00	0.00	0.00			0.00	0.00
Uniform Delay (d_1), s/veh	23.2		7.2	19.2		19.3	31.5	13.2			33.8	33.8
Incremental Delay (d_2), s/veh	0.3		1.7	1.3		1.7	2.8	0.0			0.9	0.9
Initial Queue Delay (d_3), s/veh	0.0		0.0	0.0		0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh	23.5		8.9	20.5		21.0	34.3	13.2			34.7	34.7
Level of Service (LOS)	C		A	C		C	C	B			C	C
Approach Delay, s/veh / LOS	9.3	A		20.8	C		21.5	C		34.7	C	
Intersection Delay, s/veh / LOS	21.3						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.27	B	2.10	B	1.67	B	2.12	B
Bicycle LOS Score / LOS		F	0.92	A	1.45	A	0.91	A

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HCS7 Signalized Intersection Results Summary

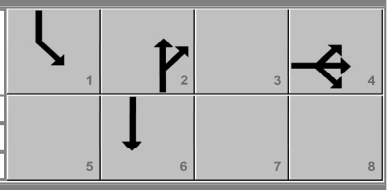
General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Apr 1, 2020	Area Type	Other
Jurisdiction	City of Paramount	Time Period	Future With Project - AM	PHF	1.00
Urban Street	Garfield/105 EB Off-Ramp	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	Intersection #11	File Name	11 - AM.xus		
Project Description	Rancho Los Amigos South Campus				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	452	727	590					915	335	182	1044	

Signal Information			
Cycle, s	70.0	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	22.3	6.1	29.6	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4				2	1	6
Case Number		11.0				7.3	2.0	4.0
Phase Duration, s		33.6				26.3	10.1	36.4
Change Period, ($Y+R_c$), s		4.0				4.0	4.0	4.0
Max Allow Headway (*MAH*), s		3.2				0.0	3.1	0.0
Queue Clearance Time (g_s), s		25.4					5.5	
Green Extension Time (g_e), s		4.2				0.0	0.8	0.0
Phase Call Probability		1.00					0.97	
Max Out Probability		0.08					0.89	

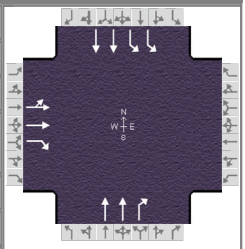
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14					2	12	1	6	
Adjusted Flow Rate (*v*), veh/h	614	565	590					915	335	182	1044	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1833	1900	1610					1809	1610	1757	1809	
Queue Service Time (g_s), s	20.3	17.1	23.4					16.2	12.5	3.5	15.3	
Cycle Queue Clearance Time (g_c), s	20.3	17.1	23.4					16.2	12.5	3.5	15.3	
Green Ratio (*g/C*)	0.42	0.42	0.42					0.32	0.32	0.20	0.46	
Capacity (*c*), veh/h	775	804	681					1152	513	306	1674	
Volume-to-Capacity Ratio (*X*)	0.792	0.703	0.866					0.794	0.653	0.594	0.624	
Back of Queue (*Q*), ft/ln (95 th percentile)	306.6	270.7	322					287.5	223.6	64.6	243.9	
Back of Queue (*Q*), veh/ln (95 th percentile)	12.3	10.8	12.9					11.5	8.9	2.6	9.8	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00					0.00	0.00	0.00	0.00	
Uniform Delay (d_1), s/veh	17.5	16.6	18.4					21.8	20.5	30.8	14.2	
Incremental Delay (d_2), s/veh	1.1	0.4	3.4					5.7	6.4	0.7	1.8	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh	18.6	17.0	21.8					27.4	26.9	31.4	16.0	
Level of Service (LOS)	B	B	C					C	C	C	B	
Approach Delay, s/veh / LOS	19.2	B		0.0			27.3	C		18.3	B	
Intersection Delay, s/veh / LOS	21.3						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.31	B	2.46	B	1.71	B	1.89	B
Bicycle LOS Score / LOS	1.95	B			1.52	B	1.50	A

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HCS7 Signalized Intersection Results Summary

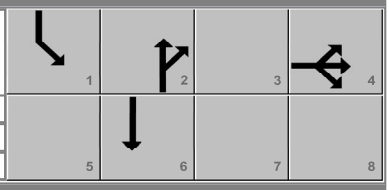
General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Apr 1, 2020	Area Type	Other
Jurisdiction	City of Paramount	Time Period	Future With Project - PM	PHF	1.00
Urban Street	Garfield/105 EB Off-Ramp	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	Intersection #11	File Name	11 - PM.xus		
Project Description	Rancho Los Amigos South Campus				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	236	808	532					1045	486	84	707	

Signal Information			
Cycle, s	70.0	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	26.3	4.8	26.9	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4				2	1	6
Case Number		11.0				7.3	2.0	4.0
Phase Duration, s		30.9				30.3	8.8	39.1
Change Period, ($Y+R_c$), s		4.0				4.0	4.0	4.0
Max Allow Headway (*MAH*), s		3.2				0.0	3.1	0.0
Queue Clearance Time (g_s), s		23.3					3.6	
Green Extension Time (g_e), s		3.6				0.0	1.2	0.0
Phase Call Probability		1.00					0.80	
Max Out Probability		0.03					0.34	

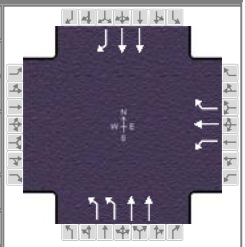
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14					2	12	1	6	
Adjusted Flow Rate (*v*), veh/h	543	501	532					1045	486	84	707	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1860	1900	1610					1809	1610	1757	1809	
Queue Service Time (g_s), s	17.8	15.4	21.3					17.8	18.9	1.6	8.5	
Cycle Queue Clearance Time (g_c), s	17.8	15.4	21.3					17.8	18.9	1.6	8.5	
Green Ratio (*g/C*)	0.38	0.38	0.38					0.38	0.38	0.18	0.50	
Capacity (*c*), veh/h	715	730	619					1358	604	242	1814	
Volume-to-Capacity Ratio (*X*)	0.760	0.686	0.860					0.770	0.804	0.347	0.390	
Back of Queue (*Q*), ft/ln (95 th percentile)	280.7	254.2	294.6					298.2	319.8	29.5	137.5	
Back of Queue (*Q*), veh/ln (95 th percentile)	11.2	10.2	11.8					11.9	12.8	1.2	5.5	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00					0.00	0.00	0.00	0.00	
Uniform Delay (d_1), s/veh	18.7	18.0	19.8					19.2	19.6	31.1	10.8	
Incremental Delay (d_2), s/veh	0.6	0.4	1.8					4.3	10.9	0.3	0.6	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh	19.4	18.4	21.6					23.5	30.5	31.4	11.4	
Level of Service (LOS)	B	B	C					C	C	C	B	
Approach Delay, s/veh / LOS	19.8	B		0.0			25.7	C		13.6	B	
Intersection Delay, s/veh / LOS	20.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.31	B	2.46	B	1.71	B	1.88	B
Bicycle LOS Score / LOS	1.79	B			1.75	B	1.14	A

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HCS7 Signalized Intersection Results Summary

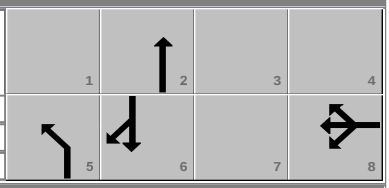
General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Oct 15, 2018	Area Type	Other
Jurisdiction	City of South Gate	Time Period	Future With Project - AM	PHF	1.00
Urban Street	Paramount/105 WB Ramp	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	Intersection #21	File Name	21 - AM.xus		
Project Description	Rancho Los Amigos South Campus				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				225	524	430	222	1081			843	547

Signal Information			
Cycle, s	90.0	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	8.0	41.9	28.1	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8	5	2		6
Case Number				9.0	2.0	4.0		7.3
Phase Duration, s				32.1	12.0	57.9		45.9
Change Period, ($Y+R_c$), s				4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s				3.2	3.1	0.0		0.0
Queue Clearance Time (g_s), s				25.6	7.5			
Green Extension Time (g_e), s				2.6	0.5	0.0		0.0
Phase Call Probability				1.00	1.00			
Max Out Probability				0.00	0.00			

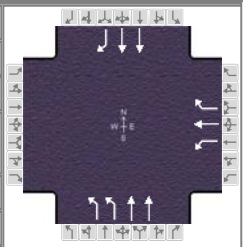
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18	5	2			6	16
Adjusted Flow Rate (*v*), veh/h				225	524	430	222	1081			843	547
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1810	1900	1610	1757	1809			1809	1610
Queue Service Time (g_s), s				8.8	23.6	22.5	5.5	15.4			14.6	24.8
Cycle Queue Clearance Time (g_c), s				8.8	23.6	22.5	5.5	15.4			14.6	24.8
Green Ratio (*g/C*)				0.31	0.31	0.31	0.31	0.60			0.47	0.47
Capacity (*c*), veh/h				566	594	503	312	2165			1684	749
Volume-to-Capacity Ratio (*X*)				0.398	0.882	0.854	0.712	0.499			0.501	0.730
Back of Queue (*Q*), ft/ln (95 th percentile)				163.8	394.7	331.5	107.1	236.8			246.9	373.2
Back of Queue (*Q*), veh/ln (95 th percentile)				6.6	15.8	13.3	4.3	9.5			9.9	14.9
Queue Storage Ratio (*RQ*) (95 th percentile)				0.00	0.00	0.00	0.00	0.00			0.00	0.00
Uniform Delay (d_1), s/veh				24.3	29.4	29.0	39.9	10.3			16.8	19.5
Incremental Delay (d_2), s/veh				0.2	1.8	1.6	1.1	0.8			1.1	6.2
Initial Queue Delay (d_3), s/veh				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh				24.5	31.1	30.7	41.0	11.2			17.8	25.7
Level of Service (LOS)				C	C	C	D	B			B	C
Approach Delay, s/veh / LOS	0.0			29.7		C	16.3		B	20.9		C
Intersection Delay, s/veh / LOS	22.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.47	B	2.31	B	1.88	B	1.67	B
Bicycle LOS Score / LOS			2.43	B	1.56	B	1.63	B

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HCS7 Signalized Intersection Results Summary

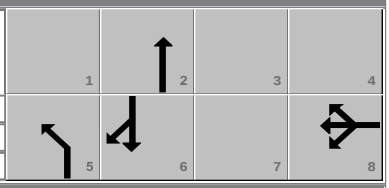
General Information				Intersection Information	
Agency	LLG Engineers			Duration, h	0.25
Analyst	JAS	Analysis Date	Oct 15, 2018	Area Type	Other
Jurisdiction	City of South Gate	Time Period	Future With Project - PM	PHF	1.00
Urban Street	Paramount/105 WB Ramp	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	Intersection #21	File Name	21 - PM.xus		
Project Description	Rancho Los Amigos South Campus				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				223	378	337	182	1103			890	382

Signal Information			
Cycle, s	90.0	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	6.9	49.2	22.0	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8	5	2		6
Case Number				9.0	2.0	4.0		7.3
Phase Duration, s				26.0	10.9	64.0		53.2
Change Period, ($Y+R_c$), s				4.0	4.0	4.0		4.0
Max Allow Headway (*MAH*), s				3.2	3.1	0.0		0.0
Queue Clearance Time (g_s), s				20.0	6.5			
Green Extension Time (g_e), s				1.9	0.4	0.0		0.0
Phase Call Probability				1.00	0.99			
Max Out Probability				0.00	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	5	2			6	16
Adjusted Flow Rate (*v*), veh/h				223	378	337	182	1103			890	382
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1810	1900	1610	1757	1809			1809	1610
Queue Service Time (g_s), s				9.6	16.9	18.0	4.5	13.1			13.3	12.7
Cycle Queue Clearance Time (g_c), s				9.6	16.9	18.0	4.5	13.1			13.3	12.7
Green Ratio (*g/C*)				0.24	0.24	0.24	0.44	0.67			0.55	0.55
Capacity (*c*), veh/h				441	464	393	268	2413			1976	880
Volume-to-Capacity Ratio (*X*)				0.505	0.815	0.858	0.678	0.457			0.450	0.434
Back of Queue (*Q*), ft/ln (95 th percentile)				182.5	304	282.3	88.2	194.1			218.8	199.8
Back of Queue (*Q*), veh/ln (95 th percentile)				7.3	12.2	11.3	3.5	7.8			8.8	8.0
Queue Storage Ratio (*RQ*) (95 th percentile)				0.00	0.00	0.00	0.00	0.00			0.00	0.00
Uniform Delay (d_1), s/veh				29.3	32.1	32.5	40.5	7.2			12.3	12.1
Incremental Delay (d_2), s/veh				0.3	1.4	2.1	1.1	0.6			0.7	1.6
Initial Queue Delay (d_3), s/veh				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh				29.7	33.5	34.7	41.6	7.8			13.0	13.7
Level of Service (LOS)				C	C	C	D	A			B	B
Approach Delay, s/veh / LOS	0.0			33.0	C		12.6	B		13.2	B	
Intersection Delay, s/veh / LOS	18.3						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.47	B	2.31	B	1.86	B	1.66	B
Bicycle LOS Score / LOS			2.04	B	1.55	B	1.54	B

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HCS7 Basic Freeway Report

Project Information

Analyst	JAS	Date	4/1/2020
Agency	LLG Engineers	Analysis Year	2017
Jurisdiction	Caltrans	Time Period Analyzed	Existing - AM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound west of Garfield Avenue	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6400	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1753
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	63.2
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	27.7
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	JAS	Date	4/1/2020
Agency	LLG Engineers	Analysis Year	2017
Jurisdiction	Caltrans	Time Period Analyzed	Existing - PM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound west of Garfield Avenue	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6400	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1753
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	63.2
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	27.7
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	JAS	Date	4/1/2020
Agency	LLG Engineers	Analysis Year	2017
Jurisdiction	Caltrans	Time Period Analyzed	Existing + Project - AM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound west of Garfield Avenue	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6519	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1786
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	62.9
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	28.4
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	JAS	Date	4/1/2020
Agency	LLG Engineers	Analysis Year	2017
Jurisdiction	Caltrans	Time Period Analyzed	Existing + Project - PM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound west of Garfield Avenue	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6420	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1758
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	63.2
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	27.8
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	JAS	Date	4/1/2020
Agency	LLG Engineers	Analysis Year	2021
Jurisdiction	Caltrans	Time Period Analyzed	Future - AM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound west of Garfield Avenue	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6600	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1808
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	62.6
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	28.9
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	JAS	Date	4/1/2020
Agency	LLG Engineers	Analysis Year	2021
Jurisdiction	Caltrans	Time Period Analyzed	Future - PM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound west of Garfield Avenue	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6600	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1808
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	62.6
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	28.9
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

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Project Description	Rancho Los Amigos South Campus - I-105 Eastbound west of Garfield Avenue	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6719	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1840
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	62.3
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	29.5
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

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Agency	LLG Engineers	Analysis Year	2021
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Project Description	Rancho Los Amigos South Campus - I-105 Eastbound west of Garfield Avenue	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6620	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1813
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	62.6
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	29.0
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

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Jurisdiction	Caltrans	Time Period Analyzed	Existing - AM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound west of Garfield Avenue	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6400	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1753
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	63.2
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	27.7
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

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Agency	LLG Engineers	Analysis Year	2017
Jurisdiction	Caltrans	Time Period Analyzed	Existing - PM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound west of Garfield Avenue	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6400	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1753
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	63.2
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	27.7
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

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Agency	LLG Engineers	Analysis Year	2017
Jurisdiction	Caltrans	Time Period Analyzed	Existing + Project - AM
Project Description	Rancho Los Amigos South Campus - I-105 Westbound west of Garfield Avenue	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6416	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1757
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	63.2
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	27.8
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

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Agency	LLG Engineers	Analysis Year	2017
Jurisdiction	Caltrans	Time Period Analyzed	Existing + Project - PM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound west of Garfield Avenue	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6495	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1779
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	63.0
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	28.2
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

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Project Description	Rancho Los Amigos South Campus - I-105 Westbound west of Garfield Avenue	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6600	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1808
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	62.6
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	28.9
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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Project Information

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Project Description	Rancho Los Amigos South Campus - I-105 Westbound west of Garfield Avenue	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6600	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1808
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	62.6
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	28.9
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6616	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1812
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	62.6
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	28.9
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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Project Information

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Project Description	Rancho Los Amigos South Campus - I-105 Westbound west of Garfield Avenue	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6695	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1834
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	62.3
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	29.4
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	JAS	Date	4/1/2020
Agency	LLG Engineers	Analysis Year	2017
Jurisdiction	Caltrans	Time Period Analyzed	Existing - AM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound east of Paramount Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7250	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1986
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.1
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	33.0
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	JAS	Date	4/1/2020
Agency	LLG Engineers	Analysis Year	2017
Jurisdiction	Caltrans	Time Period Analyzed	Existing - PM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound east of Paramount Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7250	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1986
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.1
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	33.0
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

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Jurisdiction	Caltrans	Time Period Analyzed	Existing + Project - AM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound east of Paramount Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7263	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1989
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.1
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	33.1
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	JAS	Date	4/1/2020
Agency	LLG Engineers	Analysis Year	2017
Jurisdiction	Caltrans	Time Period Analyzed	Existing + Project - PM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound east of Paramount Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7323	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2006
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	59.8
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	33.5
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

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Agency	LLG Engineers	Analysis Year	2021
Jurisdiction	Caltrans	Time Period Analyzed	Future - AM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound east of Paramount Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7545	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2066
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	35.2
Total Ramp Density Adjustment	-	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

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Agency	LLG Engineers	Analysis Year	2021
Jurisdiction	Caltrans	Time Period Analyzed	Future - PM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound east of Paramount Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7545	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2066
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	35.2
Total Ramp Density Adjustment	-	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

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Agency	LLG Engineers	Analysis Year	2021
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Project Description	Rancho Los Amigos South Campus - I-105 Eastbound east of Paramount Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7558	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2070
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	58.6
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	35.3
Total Ramp Density Adjustment	-	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

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Agency	LLG Engineers	Analysis Year	2021
Jurisdiction	Caltrans	Time Period Analyzed	Future + Project - PM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound east of Paramount Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7618	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2086
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	58.3
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	35.8
Total Ramp Density Adjustment	-	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	JAS	Date	4/1/2020
Agency	LLG Engineers	Analysis Year	2017
Jurisdiction	Caltrans	Time Period Analyzed	Existing - AM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound west of Paramount Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7250	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1986
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.1
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	33.0
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	JAS	Date	4/1/2020
Agency	LLG Engineers	Analysis Year	2017
Jurisdiction	Caltrans	Time Period Analyzed	Existing - PM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound west of Paramount Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7250	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1986
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.1
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	33.0
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

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Jurisdiction	Caltrans	Time Period Analyzed	Existing + Project - AM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound west of Paramount Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7341	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2011
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.86
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	59.7
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	33.7
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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Project Information

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Project Description	Rancho Los Amigos South Campus - I-105 Eastbound west of Paramount Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7265	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1990
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.1
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	33.1
Total Ramp Density Adjustment	-	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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Project Information

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Project Description	Rancho Los Amigos South Campus - I-105 Eastbound west of Paramount Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7545	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2066
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	35.2
Total Ramp Density Adjustment	-	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

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Project Description	Rancho Los Amigos South Campus - I-105 Eastbound west of Paramount Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7545	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2066
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	35.2
Total Ramp Density Adjustment	-	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	JAS	Date	4/1/2020
Agency	LLG Engineers	Analysis Year	2021
Jurisdiction	Caltrans	Time Period Analyzed	Future + Project - AM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound west of Paramount Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7636	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2092
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	58.2
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	35.9
Total Ramp Density Adjustment	-	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	JAS	Date	4/1/2020
Agency	LLG Engineers	Analysis Year	2021
Jurisdiction	Caltrans	Time Period Analyzed	Future + Project - PM
Project Description	Rancho Los Amigos South Campus - I-105 Eastbound west of Paramount Boulevard	Unit	United States Customary

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	-
Lane Width, ft	-	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	-		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7560	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2071
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	58.6
Right-Side Lateral Clearance Adj. (f_{RLC})	-	Density (D), pc/mi/ln	35.3
Total Ramp Density Adjustment	-	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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APPENDIX G

CMA AND LEVELS OF SERVICE EXPLANATION
CMA DATA WORKSHEETS – WEEKDAY AM AND PM PEAK HOURS
CITY OF LYNWOOD

CRITICAL MOVEMENT ANALYSIS (CMA) DESCRIPTION

Level of Service is a term used to describe prevailing conditions and their effect on traffic. Broadly interpreted, the Level of Service concept denotes any one of a number of differing combinations of operating conditions which may take place 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, 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*. 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.

Critical Movement Analysis (CMA) is a procedure which provides a capacity and level of service geometry and traffic signal operation and results in a level of service determination for the intersection as a whole operating unit.

The per lane volume for each movement in the intersection is determined and the per lane intersection capacity based on the Transportation Research Board (TRB) Report 212 (*Interim Materials on Highway Capacity*). The resulting CMA represents the ratio of the intersection's cumulative volume over its respective capacity (V/C ratio). Critical Movement Analysis takes into account lane widths, bus and truck operations, pedestrian activity and parking activity, as well as number of lanes and geometrics.

The Level of Service (abbreviated from the *Highway Capacity Manual*) are listed here with their corresponding CMA 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.

Critical Movement Analysis Characteristics

Level of Service	Load Factor	Equivalent CMA
A (free flow)	0.0	0.00 - 0.60
B (rural design)	0.0 - 0.1	0.61 - 0.70
C (urban design)	0.1 - 0.3	0.71 - 0.80
D (maximum urban design)	0.3 - 0.7	0.81 - 0.90
E (capacity)	0.7 - 1.0	0.91 - 1.00
F (force flow)	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 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 (CMA = 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 Workheet
(Circular 212 Method)

I/S #:	North-South Street:	Atlantic Avenue	Year of Count:	2017	Ambient Growth: (%):	1.0	Conducted by:	NDS	Date:	10/3/2018
CMA01	East-West Street:	Imperial Highway	Projection Year:	2021	Peak Hour:	AM	Reviewed by:	JAS	Project:	5-17-0354-1 - RLASC

	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
No. of Phases			4			4			4				4				4	
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0			0				0				0	
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0	NB-- 0	SB--	0		NB-- 0	SB--	0		NB-- 0	SB--	0	
	EB-- 0	WB--	0	EB-- 0	WB--	0	EB-- 0	WB--	0		EB-- 0	WB--	0		EB-- 0	WB--	0	
ATSAC-1 or ATSAC+ATCS-2?			2			2			2				2				2	
Override Capacity			0			0			0				0				0	

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	183	1	183	0	183	183	0	190	1	190	0	190	1	190	0	190	1	190
	Left-Through		0							0				0				0	
	Through	594	2	**297**	0	594	**297**	0	618	2	**309**	0	618	2	**309**	0	618	2	**309**
	Through-Right		0							0				0				0	
	Right	342	1	284	0	342	284	0	356	1	296	0	356	1	296	0	356	1	296
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
SOUTHBOUND	Left	310	1	**310**	46	356	**356**	-14	309	1	**309**	46	355	1	**355**	0	355	1	**355**
	Left-Through		0							0				0				0	
	Through	555	2	278	0	555	278	0	578	2	289	0	578	2	289	0	578	2	289
	Through-Right		0							0				0				0	
	Right	171	1	130	0	171	130	0	178	1	135	0	178	1	135	0	178	1	135
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
EASTBOUND	Left	83	1	**83**	0	83	**83**	0	86	1	**86**	0	86	1	**86**	0	86	1	**86**
	Left-Through		0							0				0				0	
	Through	633	1	355	46	679	378	-11	648	1	364	46	694	1	387	0	694	1	387
	Through-Right		1							1				1				1	
	Right	76	0	76	0	76	76	0	79	0	79	0	79	0	79	0	79	0	79
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
WESTBOUND	Left	116	1	116	0	116	116	0	121	1	121	0	121	1	121	0	121	1	121
	Left-Through		0							0				0				0	
	Through	866	1	**465**	6	872	**471**	-1	900	1	**480**	6	906	1	**486**	0	906	1	**486**
	Through-Right		1							1				1				1	
	Right	63	0	63	6	69	69	-6	60	0	60	6	66	0	66	0	66	0	66
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
CRITICAL VOLUMES		*North-South:*	607		*North-South:*	653		*North-South:*	618			*North-South:*	664			*North-South:*	664	
		East-West:	548		*East-West:*	554		*East-West:*	566			*East-West:*	572			*East-West:*	572	
		SUM:	1155		*SUM:*	1207		*SUM:*	1184			*SUM:*	1236			*SUM:*	1236	
VOLUME/CAPACITY *(V/C)* RATIO:			0.840			0.878			0.861				0.899				0.899	
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.740			0.778			0.761				0.799				0.799	
LEVEL OF SERVICE (LOS):			C			C			C				C				C	

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in *v/c* due to project: 0.038 — $\Delta v/c$ after mitigation: 0.038

Significant impacted? NO — Fully mitigated? N/A

Level of Service Workheet
(Circular 212 Method)

I/S #:	North-South Street:	Atlantic Avenue	Year of Count:	2017	Ambient Growth: (%):	1.0	Conducted by:	NDS	Date:	10/3/2018
CMA01	East-West Street:	Imperial Highway	Projection Year:	2021	Peak Hour:	PM	Reviewed by:	JAS	Project:	5-17-0354-1 - RLASC

	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
No. of Phases			4			4			4				4				4	
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0			0				0				0	
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0	NB-- 0	SB--	0		NB-- 0	SB--	0		NB-- 0	SB--	0	
	EB-- 0	WB--	0	EB-- 0	WB--	0	EB-- 0	WB--	0		EB-- 0	WB--	0		EB-- 0	WB--	0	
ATSAC-1 or ATSAC+ATCS-2?			2			2			2				2				2	
Override Capacity			0			0			0				0				0	

MOVEMENT		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	173	1	173	0	173	173	0	180	1	180	0	180	1	180	0	180	1	180
	Left-Through		0							0				0				0	
	Through	559	2	280	0	559	280	0	582	2	291	0	582	2	291	0	582	2	291
	Through-Right		0							0				0				0	
	Right	271	1	205	0	271	205	0	282	1	213	0	282	1	213	0	282	1	213
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
SOUTHBOUND	Left	230	1	230	8	238	238	-4	235	1	235	8	243	1	243	0	243	1	243
	Left-Through		0							0				0				0	
	Through	589	2	295	0	589	295	0	613	2	307	0	613	2	307	0	613	2	307
	Through-Right		0							0				0				0	
	Right	156	1	111	0	156	111	0	162	1	115	0	162	1	115	0	162	1	115
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
EASTBOUND	Left	90	1	90	0	90	90	0	94	1	94	0	94	1	94	0	94	1	94
	Left-Through		0							0				0				0	
	Through	780	1	421	8	788	425	0	812	1	439	8	820	1	443	0	820	1	443
	Through-Right		1							1				1				1	
	Right	62	0	62	0	62	62	0	65	0	65	0	65	0	65	0	65	0	65
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
WESTBOUND	Left	133	1	133	0	133	133	0	138	1	138	0	138	1	138	0	138	1	138
	Left-Through		0							0				0				0	
	Through	793	1	445	37	830	482	-11	814	1	450	37	851	1	487	0	851	1	487
	Through-Right		1							1				1				1	
	Right	96	0	96	37	133	133	-14	86	0	86	37	123	0	123	0	123	0	123
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
CRITICAL VOLUMES		North-South:		510	North-South:		518	North-South:			526	North-South:			534	North-South:			534
		East-West:		554	East-West:		572	East-West:			577	East-West:			581	East-West:			581
		SUM:		1064	SUM:		1090	SUM:			1103	SUM:			1115	SUM:			1115
VOLUME/CAPACITY (V/C) RATIO:				0.774			0.793				0.802				0.811				0.811
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.674			0.693				0.702				0.711				0.711
LEVEL OF SERVICE (LOS):				B			B				C				C				C

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in *v/c* due to project: 0.009 — Δ*v/c* after mitigation: 0.009

Significant impacted? NO — Fully mitigated? N/A

Level of Service Workheet
(Circular 212 Method)

I/S #:	North-South Street:	Wright Road	Year of Count:	2017	Ambient Growth: (%):	1.0	Conducted by:	NDS	Date:	10/3/2018
CMA03	East-West Street:	Imperial Highway	Projection Year:	2021	Peak Hour:	AM	Reviewed by:	JAS	Project:	5-17-0354-1 - RLASC

No. of Phases			3			3			3			3			3			3	
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			1			1			1			1			1			1	
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB--	0	SB--	0	NB--	0	SB--	0	NB--	0	SB--	0	NB--	0	SB--	0	NB--	0	SB--	0
	EB--	0	WB--	3	EB--	0	WB--	3	EB--	0	WB--	3	EB--	0	WB--	3	EB--	0	WB--	3
ATSAC-1 or ATSAC+ATCS-2?				2				2				2				2				2
Override Capacity				0				0				0				0				0

MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	14	0	14	0	14	14	0	15	0	15	0	15	0	15	0	15	0	15
	Left-Through		0							0				0				0	
	Through	53	0	67	0	53	67	0	55	0	70	0	55	0	70	0	55	0	70
	Through-Right		0							0				0				0	
	Right	493	2	**271**	0	493	**271**	0	513	2	**282**	0	513	2	**282**	0	513	2	**282**
	Left-Through-Right		1							1				1				1	
	Left-Right		0							0				0				0	
SOUTHBOUND	Left	1162	1	**599**	46	1208	**622**	-12	1197	1	**617**	46	1243	1	**640**	0	1243	1	**640**
	Left-Through		1							1				1				1	
	Through	36	0	599	0	36	622	0	37	0	617	0	37	0	640	0	37	0	640
	Through-Right		0							0				0				0	
	Right	46	1	43	0	46	43	0	48	1	45	0	48	1	45	0	48	1	45
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
EASTBOUND	Left	7	1	7	0	7	7	0	7	1	7	0	7	1	7	0	7	1	**7**
	Left-Through		0							0				0				0	
	Through	1302	1	**657**	91	1393	**702**	-26	1329	1	**670**	91	1420	1	**716**	0	1420	2	477
	Through-Right		1							1				1				1	
	Right	11	0	11	0	11	11	0	11	0	11	0	11	0	11	0	11	0	11
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
WESTBOUND	Left	0	0	**0**	0	0	**0**	0	0	0	**0**	0	0	0	**0**	0	0	0	0
	Left-Through		0							0				0				0	
	Through	1005	2	503	13	1018	509	-6	1040	2	520	13	1053	2	527	0	1053	2	**527**
	Through-Right		0							0				0				0	
	Right	776	1	177	0	776	154	5	813	1	196	0	813	1	173	0	813	1	173
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
CRITICAL VOLUMES		*North-South:*		870	*North-South:*		893	*North-South:*			899	*North-South:*			922	*North-South:*			922
		East-West:		657	*East-West:*		702	*East-West:*			670	*East-West:*			716	*East-West:*			534
		SUM:		1527	*SUM:*		1595	*SUM:*			1569	*SUM:*			1638	*SUM:*			1456
VOLUME/CAPACITY *(V/C)* RATIO:				1.072			1.119				1.101				1.149				1.022
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.972			1.019				1.001				1.049				0.922
LEVEL OF SERVICE (LOS):				E			F				F				F				E

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in *v/c* due to project:	0.048	*Δv/c* after mitigation:	-0.079
Significant impacted?	YES	Fully mitigated?	YES

Level of Service Workheet
(Circular 212 Method)

I/S #:	North-South Street:	Wright Road	Year of Count:	2017	Ambient Growth: (%):	1.0	Conducted by:	NDS	Date:	10/3/2018
CMA03	East-West Street:	Imperial Highway	Projection Year:	2021	Peak Hour:	PM	Reviewed by:	JAS	Project:	5-17-0354-1 - RLASC

		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
	No. of Phases			3			3			3				3				3	
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			1			1			1				1				1	
	Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0 SB--		0	NB-- 0 SB--		0	NB-- 0 SB--		0		NB-- 0 SB--		0		NB-- 0 SB--		0	
		EB-- 0 WB--		3	EB-- 0 WB--		3	EB-- 0 WB--		3		EB-- 0 WB--		3		EB-- 0 WB--		3	
	ATSAC-1 or ATSAC+ATCS-2?			2			2			2				2				2	
	Override Capacity			0			0			0				0				0	
NORTHBOUND	Left	28	0	28	0	28	28	0	29	0	29	0	29	0	29	0	29	0	29
	Left-Through		0							0				0				0	
	Through	55	0	83	0	55	83	0	57	0	86	0	57	0	86	0	57	0	86
	Through-Right		0							0				0				0	
	Right	296	2	**163**	0	296	**163**	0	308	2	**169**	0	308	2	**169**	0	308	2	**169**
	Left-Through-Right		1							1				1				1	
	Left-Right		0							0				0				0	
SOUTHBOUND	Left	957	1	**525**	8	965	**529**	1	997	1	**547**	8	1005	1	**551**	0	1005	1	**551**
	Left-Through		1							1				1				1	
	Through	93	0	525	0	93	529	0	97	0	547	0	97	0	551	0	97	0	551
	Through-Right		0							0				0				0	
	Right	21	1	16	0	21	16	0	22	1	17	0	22	1	17	0	22	1	17
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
EASTBOUND	Left	10	1	10	0	10	10	0	10	1	10	0	10	1	10	0	10	1	**10**
	Left-Through		0							0				0				0	
	Through	1226	1	**619**	15	1241	**627**	-4	1272	1	**642**	15	1287	1	**650**	0	1287	2	433
	Through-Right		1							1				1				1	
	Right	12	0	12	0	12	12	0	12	0	12	0	12	0	12	0	12	0	12
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
WESTBOUND	Left	0	0	**0**	0	0	**0**	0	0	0	**0**	0	0	0	**0**	0	0	0	0
	Left-Through		0							0				0				0	
	Through	998	2	499	73	1071	536	-24	1015	2	508	73	1088	2	544	0	1088	2	544
	Through-Right		0							0				0				0	
	Right	1060	1	535	0	1060	531	3	1106	1	559	0	1106	1	555	0	1106	1	**555**
	Left-Through-Right		0							0				0				0	
	Left-Right		0							0				0				0	
	CRITICAL VOLUMES	*North-South:*		688	*North-South:*		692	*North-South:*			716	*North-South:*			720	*North-South:*			720
		East-West:		619	*East-West:*		627	*East-West:*			642	*East-West:*			650	*East-West:*			565
		SUM:		1307	*SUM:*		1319	*SUM:*			1358	*SUM:*			1370	*SUM:*			1285
	VOLUME/CAPACITY *(V/C)* RATIO:			0.917			0.926				0.953				0.961				0.902
	V/C LESS ATSAC/ATCS ADJUSTMENT:			**0.817**			**0.826**				**0.853**				**0.861**				**0.802**
	LEVEL OF SERVICE (LOS):			**D**			**D**				**D**				**D**				**D**

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in *v/c* due to project: 0.008 — Δ*v/c* after mitigation: -0.051

Significant impacted? NO — Fully mitigated? N/A

APPENDIX H

TRAFFIC SIGNAL WARRANT WORKSHEETS

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE 10/11/2017

DIST _____ CO _____ RTE _____ PM _____

CALC JAS DATE 10/9/2018

CHK _____ DATE _____

Major St: Garfield Avenue — Critical Approach Speed 35 mph

Minor St: Monroe Avenue — Critical Approach Speed 25 mph

Speed limit or critical speed on major street traffic > 40 mph..... ☐
or
In built up area of isolated community of < 10,000 population..... ☐ } RURAL (R)

☒ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☐
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☐
80% SATISFIED YES ☐ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				Hour							
	U	R	U	R								
APPROACH LANES	1		2 or More									
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)								
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)								

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☐
80% SATISFIED YES ☐ NO ☐

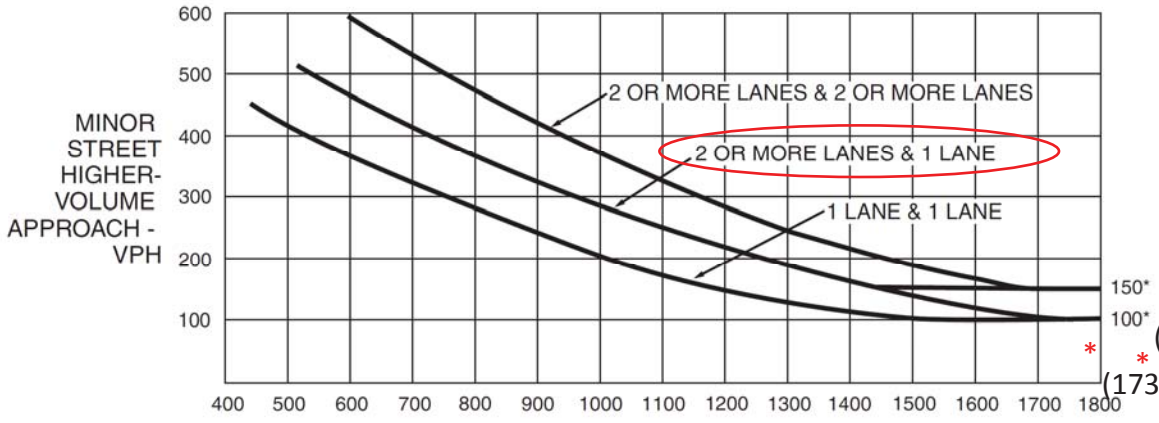
	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				Hour							
	U	R	U	R								
APPROACH LANES	1		2 or More									
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)								
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)								

Combination of Conditions A & B SATISFIED YES ☐ NO ☐

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☐
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-3. Warrant 3, Peak Hour



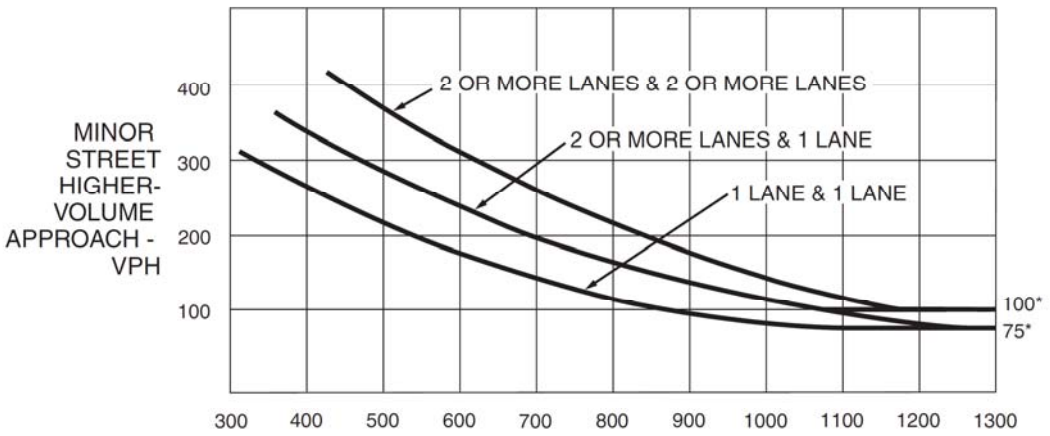
*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

(1944,44) - AM

(1737,54) - PM

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE 10/11/2017

DIST _____ CO _____ RTE _____ PM _____

CALC JAS DATE 10/9/2018

CHK _____ DATE _____

Major St: Gardendale Street — Critical Approach Speed 35 mph

Minor St: Industrial Avenue — Critical Approach Speed 25 mph

Speed limit or critical speed on major street traffic > 40 mph..... ☐

or

In built up area of isolated community of < 10,000 population..... ☐ } RURAL (R)

☒ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume **SATISFIED YES ☐ NO ☐**
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume **100% SATISFIED YES ☐ NO ☐**
80% SATISFIED YES ☐ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)			
	U	R	U	R
APPROACH LANES	1		2 or More	
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)

Hour

Condition B - Interruption of Continuous Traffic **100% SATISFIED YES ☐ NO ☐**
80% SATISFIED YES ☐ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)			
	U	R	U	R
APPROACH LANES	1		2 or More	
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)

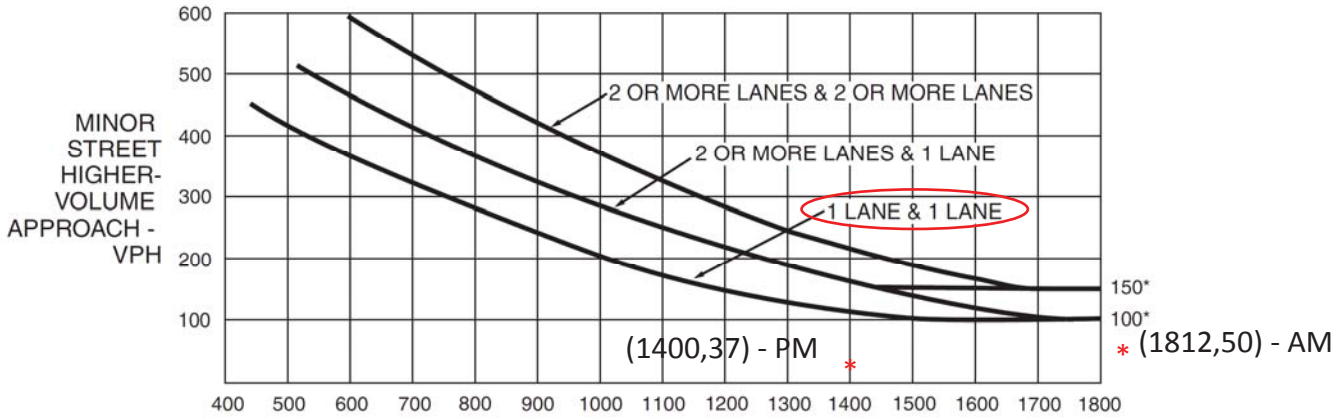
Hour

Combination of Conditions A & B **SATISFIED YES ☐ NO ☐**

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☐
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

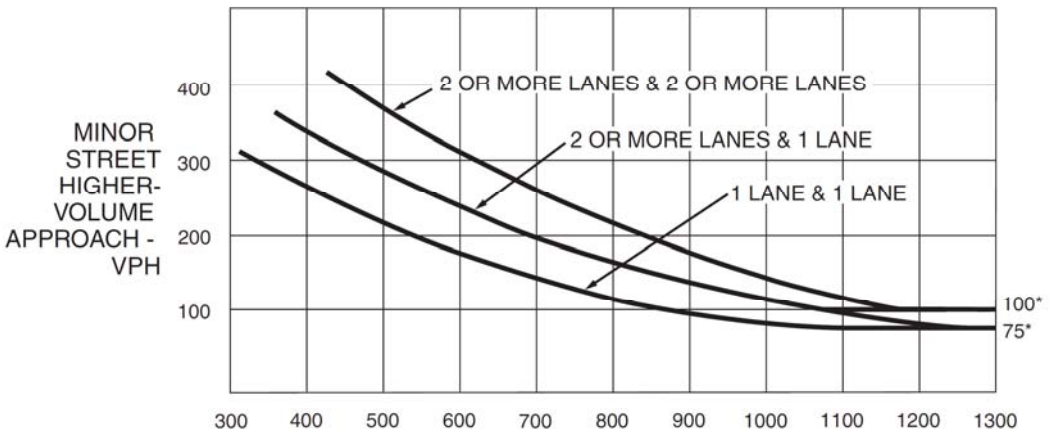
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE 10/11/2017

DIST _____ CO _____ RTE _____ PM _____

CALC JAS DATE 10/9/2018

CHK _____ DATE _____

Major St: Gardendale Street — Critical Approach Speed 35 mph

Minor St: Erickson Avenue — Critical Approach Speed 25 mph

Speed limit or critical speed on major street traffic > 40 mph..... ☐
or
In built up area of isolated community of < 10,000 population..... ☐ } RURAL (R)

☒ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☐
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☐
80% SATISFIED YES ☐ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				Hour							
	U	R	U	R								
APPROACH LANES	1		2 or More									
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)								
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)								

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☐
80% SATISFIED YES ☐ NO ☐

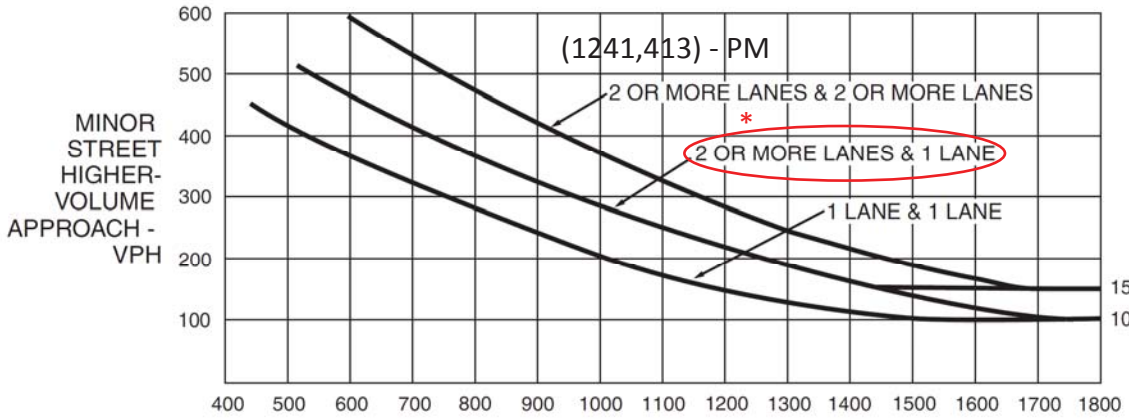
	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				Hour							
	U	R	U	R								
APPROACH LANES	1		2 or More									
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)								
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)								

Combination of Conditions A & B SATISFIED YES ☐ NO ☐

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☐
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

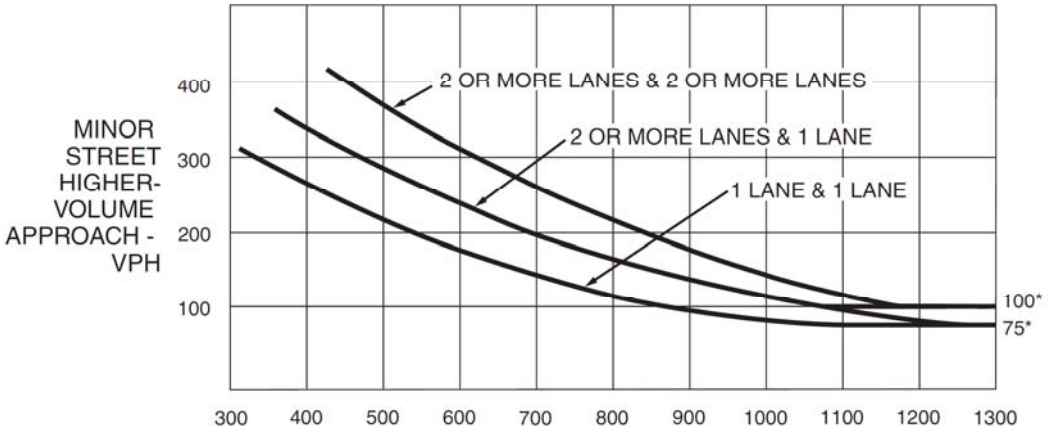
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE 10/11/2017

DIST ____ CO ____ RTE ____ PM ____

CALC JAS DATE 10/9/2018

CHK ____ DATE ____

Major St: Gardendale Street — Critical Approach Speed 35 mph

Minor St: Arizona Avenue — Critical Approach Speed 25 mph

Speed limit or critical speed on major street traffic > 40 mph..... ☐
or
In built up area of isolated community of < 10,000 population..... ☐
} RURAL (R)

☒ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☐
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☐
80% SATISFIED YES ☐ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)									
	U	R	U	R						Hour
APPROACH LANES	1		2 or More							
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)						
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)						

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☐
80% SATISFIED YES ☐ NO ☐

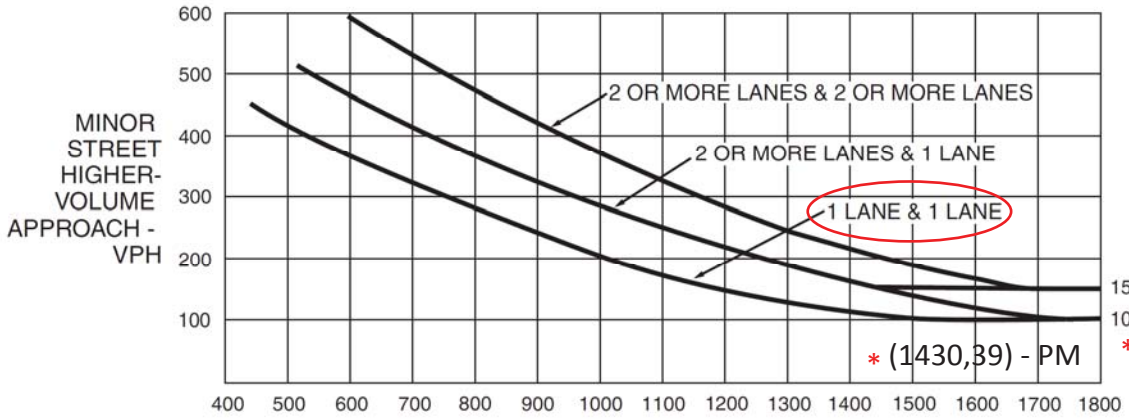
	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)									
	U	R	U	R						Hour
APPROACH LANES	1		2 or More							
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)						
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)						

Combination of Conditions A & B SATISFIED YES ☐ NO ☐

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☐
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

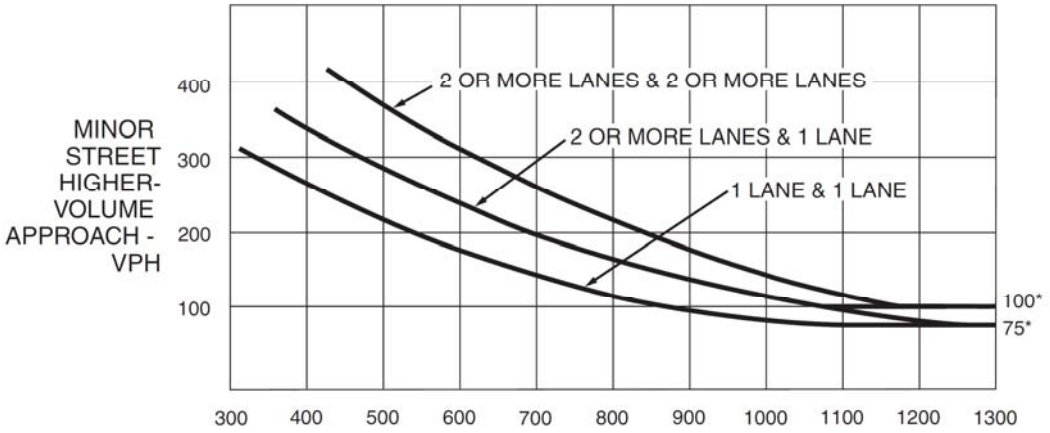
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.