ONE ALEXANDRIA SQUARE
(PTS #660043)
LOCAL MOBILITY ANALYSIS

Revised: January 7, 2022

Prepared for:

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TABLE OF CONTENTS

Tables

Exhibits

Appendices

Appendix A – Site Plan of Existing On-Site Buildings

Appendix B – NTCD and MTS Transits Routes and Schedules

Appendix C – Vehicle, Pedestrian and Bicycle Counts

Appendix D – Intersection Operations Analysis Worksheets

Appendix E – Intersection Traffic Signal Timing Data

Appendix F – Cumulative Projects Trip Distribution Maps

Appendix G – Approval Letter from San Diego City Council for All-Way Stop at Science Park Road / Torreyana Road

Appendix H – Queuing Analysis Worksheets

Appendix I – Email Documentation of Coordination with Caltrans for Signal Timing Improvements

Appendix J – Conceptual Design Plan for Recommended Science Park Road Improvements

Appendix K – Intersection Operations and Queuing Analysis Worksheets with Signal Timing Adjustments

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EXECUTIVE SUMMARY

This Local Mobility Analysis was prepared in accordance with the City of San Diego *Transportation Study Manual* (September 29, 2020). The study evaluates the potential operational deficiencies and transportation improvements that may need to be considered in association with the traffic generated by the proposed One Alexandria Square project. The project site is bounded by North Torrey Pines Road to the west, Torreyana Road to the east, Callan Road to the north, and Science Park Road to the south in the University Community Plan area of the City of San Diego.

One Alexandria Square is a 22.2-acre site that currently consists of approximately 310,357 square-feet of research and development space including 40,000 square-feet of ancillary retail and food and beverage within a total of four (4) buildings on the project site per approved SCR #1250085 (PTS #344643). The project proposes to redevelop the existing One Alexandria Square site, which consists of demolishing two existing buildings totaling 167,371 square-feet (Buildings "A" and "B" in **Appendix A**) and constructing eight (8) new buildings with a total of 285,175 square-feet. The new buildings are proposed for research and development use with 15,500 square-feet of ancillary retail and food/beverage uses. The project also proposes to construct a new parking structure that will provide a total of 968 parking spaces, for a total of 1,487 parking spaces on the project site.

The project is expected to increase the site's trip generation by a net of 942 daily trips, 151 AM peak hour trips (136 IN, 15 OUT), and 132 peak hour trips (13 IN, 119 OUT).

The project requires a Site Development Permit (SDP) and Coastal Development Permit (CDP) to amend existing development permits, a Neighborhood Development Permit (NDP) to process setback deviations and a Tentative Map to allow for development of a ten building R&D campus with supporting and ancillary uses, surface parking lots and parking structure.

Below is a summary of the analysis findings and recommended transportation improvements:

Intersection Operations Analysis Findings

Table ES-1 summarizes the intersection operations results for each scenario analyzed in this report. As shown in the table, the Genesee Avenue / I-5 Northbound Ramps intersection currently operates at LOS F during the PM peak hour. Review of the existing signal timing at the intersection revealed that the existing cycle length (90 seconds) is not long enough to adequately serve all movements at the intersection.

Under Opening Year 2022 conditions, the Genesee Avenue / I-5 Southbound Ramps intersection is forecast to operate at LOS E during the AM peak hour under Opening Year 2022 conditions both without and with the project. The Genesee Avenue / I-5 Northbound Ramps intersection is forecast to continue operating at LOS F under Opening Year 2022 conditions both without and with the project. Based on further analysis through coordination with Caltrans (presented later in the report), improvements are not recommended at the two ramp intersections for the Genesee Avenue / I-5 interchange.

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TABLE ES-1
EXECUTIVE SUMMARY OF INTERSECTION OPERATIONS

	INTERSECTION	EXISTING (2019)							OPENING YEAR 2022 WITHOUT PROJECT							OPENING YEAR 2022 WITH PROJECT						
		CONTROL TYPE	AM Peak Hour			PM Peak Hour			CONTROL TYPE	AM Peak Hour			PM Peak Hour			CONTROL TYPE	AM Peak Hour			PM Peak Hour		
				DELAY [1]	LOS [2]		DELAY [1]	LOS [2]			DELAY [1]	LOS [2]		DELAY [1]	LOS [2]			DELAY [1]	LOS [2]		DELAY [1]	LOS [2]
1	N Torrey Pines Road SB Connector / Callan Road	(TWSC)[3]	SBL	10.3	B	SBL	14.0	B	(TWSC)[3]	SBL	11.5	B	SBL	23.1	C	(TWSC)[3]	SBL	11.8	B	SBL	30.1	D
2	N Torrey Pines Road NB Connector / Callan Road	(TWSC)[3]	SBL	8.8	A	SBL	9.8	A	(TWSC)[3]	SBL	9.0	A	SBL	11.3	B	(TWSC)[3]	SBL	9.0	A	SBL	11.3	B
3	Callan Road / Torreyana Road	(AWSC)	Overall	7.9	A	Overall	7.5	A	(AWSC)	Overall	8.0	A	Overall	8.0	A	(AWSC)	Overall	8.0	A	Overall	7.4	A
4	Science Park Road / Torreyana Road	(TWSC)[3]	WBT	8.4	A	WBT	9.5	A	(AWSC)[4]	Overall	17.7	C	Overall	12.4	B	(AWSC)[4]	Overall	17.9	C	Overall	12.4	B
5	N Torrey Pines Road / Science Park Road	(S)	Overall	18.4	B	Overall	18.5	B	(S)	Overall	23.9	C	Overall	23.1	C	(S)	Overall	27.6	C	Overall	23.6	C
6	N Torrey Pines Road / John Jay Hopkins Drive	(S)	Overall	39.4	D	Overall	39.8	D	(S)	Overall	46.2	D	Overall	42.2	D	(S)	Overall	47.9	D	Overall	42.9	D
7	N Torrey Pines Road / Scripps Clinic South Driveway[5]	(S)	Overall	10.2	B	Overall	10.5	B	(S)	Overall	9.7	A	Overall	10.7	B	(S)	Overall	9.6	A	Overall	10.8	B
8	Genesee Avenue / I-5 Southbound Ramps	(S)	Overall	45.9	D	Overall	18.7	B	(S)	Overall	**67.7**	**E**	Overall	19.1	B	(S)	Overall	**73.2**	**E**	Overall	19.3	B
9	Genesee Avenue / I-5 Southbound Ramps	(S)	Overall	32.2	C	Overall	**89.9**	**F**	(S)	Overall	33.5	C	Overall	**103.1**	**F**	(S)	Overall	34.6	C	Overall	**106.4**	**F**
10	N Torrey Pines Road / Driveway 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(TWSC)[3]	WBR	12.6	B	WBL	16.9	C
11	Science Park Road / Driveway 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(TWSC)[3]	SBL	8.7	A	SBL	10.5	B
12	Science Park Road / Driveway 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(TWSC)[3]	SBL	12.8	B	SBL	13.9	B
13	Science Park Road / Driveway 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(TWSC)[3]	SBL	9.1	A	SBL	12.7	B
14	Torreyana Road / Driveway 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(TWSC)[3]	EBL	10.0	B	EBL	9.5	A
15	Torreyana Road / Driveway 6															(TWSC)[3]	EBL	9.5	A	EBL	9.2	A
16	Callan Road / Driveway 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(TWSC)[3]	NBL	9.8	A	NBL	10.1	B

FOOTNOTES:

1. Delay is measured in seconds per vehicle.

2. Level of Service

3. Delay and LOS being reported for the TWSC control type are taken from the movement with the worst delay.

4. An all-way stop at the Science Park Road / Torreyana Road intersection was approved by the University Community Planning Group on September 15, 2020 and approved by San Diego City Council on October 8, 2020, and is expected to be installed in late 2021.

5. HCM-6 in Synchro does not analyze U-turn movements. The southbound U-turn movement at the intersection was modeled in Synchro as a left-turn movement to provide delay for that movement. This was achieved by creating a “dummy” east leg of the intersection to receive the southbound left-turn movement.

Results calculated utilizing the methodologies described in Chapters 18, 19, and 20 of 6th edition of the Highway Capacity Manual (HCM 6).

(S)=Signalized, (TWSC)=Two-Way Stop Controlled, (AWSC)=All-Way Stop Controlled, (R)=Roundabout.

NB=Northbound, WB=Westbound, etc.

L=Left-turn movement, T=Thru movement, R=Right-turn movement, etc.

TABLE ES-2
EXECUTIVE SUMMARY OF ROADWAY SEGMENT OPERATIONS

	ROADWAY SEGMENT	EXISTING CLASSIFICATION	CAPACITY [a]	EXISTING (2019)			OPENING YEAR 2022 WITHOUT PROJECT			OPENING YEAR 2022 WITH PROJECT		
				VOLUME	V/C [b]	LOS [c]	VOLUME	V/C [b]	LOS [c]	VOLUME	V/C [b]	LOS [c]
1	Callan Road, North Torrey Pines Road to Torreyana Road	2-Lane Collector	8,000	2,333	0.292	A	3,926	0.491	C	3,936	0.492	C
2	Science Park Road, North Torrey Pines Road to Torreyana Road	2-Lane Collector	8,000	6,165	0.771	D	**7,107**	**0.888**	**E**	**7,385**	**0.923**	**E**
3	Torreyana Road, Callan Road to Science Park Road	2-Lane Collector	8,000	3,072	0.384	B	3,176	0.397	B	3,206	0.401	B
4	North Torrey Pines Road, Callan Road to Science Park Road	6-Lane Primary Arterial	60,000	15,387	0.256	A	17,165	0.286	A	17,901	0.298	A

FOOTNOTES:
a. Roadway volume capacity and classification based on the City of San Diego *Transportation Study Manual* (September 29, 2020).
b. Volume to Capacity ratio.
c. Level of Service.

Roadway Segment Analysis Findings

Table ES-2 summarizes the roadway segment operations results for each scenario analyzed in this report. As shown in the table, all roadway segments currently operate at acceptable LOS D or better. Under Opening Year 2022 conditions, the segment of Science Park Road between North Torrey Pines Road and Torreyana Road is forecast to operate at a deficient LOS E both without and with the project. Improvements are recommended to improve traffic operations along Science Park Road, which are presented later in this report.

Queuing Analysis Findings

The queuing analysis results showed that the 95th percentile queue length is expected to exceed the storage length for the westbound right-turn lanes at the Genesee Avenue / I-5 Northbound Ramps intersection during the PM peak hour under Opening Year 2022 conditions both without and with the proposed project. Although supplemental analysis had shown that the queue length of the westbound right-turn movement at the Genesee Avenue / I-5 Northbound Ramps intersection would decrease with an increase in cycle length to 110 seconds, the queue lengths of the off-ramps at both intersections would increase during the peak hours if a 110-second cycle length was implemented. Therefore, no signal timing adjustments were recommended at the two ramp intersections for the Genesee Avenue / I-5 interchange.

Pedestrian Network Evaluation Findings

Evaluation of the pedestrian network in the study area revealed that contiguous 5 ft wide sidewalks are currently provided in both directions of travel along the study area roadways, and crosswalks are provided at the signalized study intersections and the all-way stop intersection of Callan Road / Torreyana Road. A pedestrian bridge is planned to be constructed between the Spectrum Campus Buildings III and V, with a pedestrian connection to Science Park Road. A crosswalk will be striped across Science Park Road on the west leg of the intersection with Torreyana Road in conjunction with installation of all-way stop control at the intersection, which is anticipated to be completed in late 2021.

The proposed project will construct non-contiguous sidewalks along portions of the project frontage on the east side of North Torrey Pines Road and along portions of the project frontage on the north side of Science Park Road where existing street trees will be removed and replaced per Tree Survey. Non-contiguous sidewalk is not proposed along the project frontage on the south side of Callan Road, as this would require removal of extensive existing landscaping, which is inconsistent with the subarea requirement of retaining existing mature trees and having development occur around and in between them.

Bicycle Network Evaluation Findings

The findings of the bicycle network evaluation showed that there are currently Class II bike lanes provided along North Torrey Pines Road and along John Jay Hopkins Drive in both directions of travel through the study area. The Class II bike lanes along North Torrey Pines Road include enhancements such as buffers and high-visibility green paint in the conflict zones. There are currently no bicycle facilities provided along Science Park Road, Torreyana Road, or Callan Road.

Transit Network Evaluation Findings

Evaluation of the transit network in the study area revealed that there are currently three transit bus stops provided along North Torrey Pines Road within ¼ mile walking distance of the project site for NTCD Route 101. There are four transit bus stops provided for MTS Route 978 along Science Park Road, Torreyana Road, and Callan Road within ¼ mile walking distance of the project site. Amenities such as a shelter, bench and trash receptable are provided at only one of the seven transit stops within walking distance of the project site.

Turn Lane Evaluation Findings

The need for left-turn or right-turn lanes at the signalized study intersections was also evaluated per the criteria identified in the City of San Diego's *Transportation Study Manual* (September 29, 2020). The results of the turn lane evaluation showed that the addition of project traffic would not result in the need for a left-turn lane, a second left-turn lane or a right-turn lane on the approaches of the signalized study intersections where these lanes are currently not provided.

Systemic Safety Review Findings

A Systemic Safety Review was performed at the study intersections to determine if any of the study intersections meet the criteria to be identified as a Systemic Hotspot for pedestrians, bicycles or vehicles per the *Systemic Safety The Data-Driven Path to Vision Zero* document. City of San Diego staff had verified that the study intersections did not meet any of the criteria to be identified as pedestrian hotspots. Therefore, the Systemic Safety Review was only conducted to identify bicycle and vehicle hotspots at the study intersections.

The results of the Systemic Safety Review for Bicycle Hotspots showed that none of the study intersections met the criteria for Bicycle Hotspot Scenario #1, but the North Torrey Pines Road Northbound Ramp Connector / Callan Road intersection did meet the criteria for Bicycle Hotspot Scenario #2.

Systemic Safety The Data-Driven Path to Vision Zero recommends a public messaging campaign or target enforcement of bicyclists running stop signs as countermeasures to discourage bicyclists from "rolling" through stop signs at side-street stop-controlled intersections. These countermeasures are not feasible for a standalone project and therefore, neither countermeasure will be implemented by the project.

The results of the Systemic Safety Review for Vehicle Hotspots showed that none of the study intersections met the criteria for Vehicle Hotspot Scenarios #1 through #4.

Recommended Transportation Improvements

The following improvements are recommended to improve conditions for all transportation modes in the immediate vicinity of the project site and within the study area:

<u>Roadway Conditions</u>

- Restripe Science Park Road from 300 feet east of North Torrey Pines Road to Torreyana Road to provide a continuous two-way left-turn lane. This improvement will require removing the existing on-street parking along Science Park Road and will also include proposed buffered Class II bike lanes.

- Stripe a 75-foot left-turn lane on the eastbound approach of the Science Park Road-Merryfield Row / Torreyana Road intersection.

Pedestrian Conditions

- Install a continental-style crosswalk across the northbound off-ramp at the North Torrey Pines Road / Callan Road interchange at the location where pedestrian curb ramps with truncated domes are currently provided. Install R1-5 or R1-5a signage per California MUTCD 2014 Edition (Revision 5, March 27, 2020) requiring vehicles to yield to pedestrians in crosswalk. These improvements are recommended to improve pedestrian connectivity between the project site and the existing transit bus stop located on northbound North Torrey Pines Road approximately 300 feet north of Callan Road.

Bicycle Conditions

- Restripe Science Park Road from North Torrey Pines Road to Torreyana Road to provide a buffered Class II bike lane in the eastbound direction, and restripe Science Park Road from Torreyana Road to 300 feet east of North Torrey Pines Road to provide a buffered Class II bike lane in the westbound direction. In addition, install bicycle "sharrow" pavement markings along Torreyana Road and Callan Road in both directions of travel to provide a circuitous bicycle route around the One Alexandria Square project site. Although the City of San Diego's Bicycle Master Plan (December 2013) does not identify bicycle network improvements along Science Park Road, Torreyana Road, or Callan Road, the area in which the project site is located is identified as a high bicycle generator per the City's Bicycle Master Plan.

Transit Conditions

- Coordinate with MTS to provide the following amenities for the transit bus stops located within a quarter-mile walking distance of the project site:
    - Provide a bus shelter, bench and a trash receptable for the transit bus stop located along northbound North Torrey Pines Road approximately 100 feet north of Science Park Road.
    - Provide a bench and a trash receptable for the transit bus stop located along northbound North Torrey Pines Road approximately 300 feet north of Callan Road.
    - Provide route signage and benches for the four (4) existing MTS Route 978 transit bus stops located along Science Park Road (one stop), Torreyana Road (two stops), and Callan Road (one stop).

INTRODUCTION

The following Local Mobility Analysis was prepared in accordance with the City of San Diego *Transportation Study Manual* (September 29, 2020). The study evaluates the potential operational deficiencies and improvements that may need to be considered for all transportation modes due to the proposed One Alexandria Square redevelopment project in the University Community Plan area of the City of San Diego. The project is bounded by North Torrey Pines Road to the west, Torreyana Road to the east, Callan Road to the north, and Science Park Road to the south.

The City of San Diego *Transportation Study Manual* (September 29, 2020) requires that a project must complete a Local Mobility Analysis if land uses consistent with the Community Plan or zoning designation generate 1,000 or more daily trips, or if land uses inconsistent with the Community Plan or zoning designation generate 500 or more daily trips. The project would generate a net increase in trips close to 1,000 daily trips; therefore, a Local Mobility Analysis is required.

Exhibit 1 shows the project vicinity map.

PROJECT DESCRIPTION

One Alexandria Square is a 22.2-acre site that currently consists of approximately 310,357 square-feet of research and development space, including 40,000 square-feet of ancillary retail and food and beverage, within a total of four (4) buildings on the project site per approved SCR #1250085 (PTS #344643). The project proposes to redevelop the existing One Alexandria Square site, which consists of demolishing two existing buildings totaling 167,371 square-feet (Buildings "A" and "B") and constructing eight (8) new buildings with a total of 285,175 square-feet (including 15,500 square-feet of buildings that will be used for the ancillary uses). The site plan showing only the existing buildings on-site is provided in **Appendix A**.

The new buildings are proposed for research and development use with ancillary retail and food/beverage uses. The project also proposes to construct a new parking structure that will provide a total of 968 parking spaces, for a total of 1,487 parking spaces.

The project is expected to increase the site's trip generation by a net of 942 daily trips, 151 AM peak hour trips (136 IN, 15 OUT), and 132 peak hour trips (13 IN, 119 OUT).

The project requires a Site Development Permit (SDP) and Coastal Development Permit (CDP) to amend existing development permits, a Neighborhood Development Permit (NDP) to process setback deviations and a Tentative Map to allow for development of a ten building R&D campus with supporting and ancillary uses, surface parking lots and parking structure.

The project site is located within the Torrey Pines Subarea of the *University Community Plan*. Figure 13 of the *University Community Plan* shows that the area in which the project site is located is designated for scientific research use. Therefore, the proposed project is consistent with the land use designation for the site per the *University Community Plan.*

A total of eight driveways are currently provided for the existing site. Two driveways are currently provided on North Torrey Pines Road, three driveways on Science Park Road, two driveways on Torreyana Road, and one driveway on Callan Road. The project will remove the two existing driveways on North Torrey Pines Road and construct a new driveway on North Torrey Pines Road that will serve as one of the project's two primary entrances (the second primary entrance will be Driveway 3 on Science Park Road). The project will also improve the existing driveways that will serve the new traffic to current standards per City of San Diego Standard Drawings.

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EXHIBIT 1

PROJECT VICINITY MAP

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

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The proposed redevelopment area of the project site will take access from the new driveway on North Torrey Pines Road and the two westerly driveways on Science Park Road. Primary access to the redevelopment area will be taken from the new driveway on North Torrey Pines Road (Driveway 1) and from the middle driveway on Science Park Road (Driveway 3). The westerly driveway on Science Park Road (Driveway 2) would provide access to building B4 vehicle parking and loading area for buildings B3, B4 and B5.

The remaining four existing driveways will continue to provide access to the existing buildings on the project site, and will not provide access to the new redevelopment area of the project site.

A total of seven driveways will be provided for the project site. Full access will be provided at all driveways except for the new driveway located on North Torrey Pines Road. Driveway 1 on North Torrey Pines Road will be restricted to right-in/right-out access only.

Onsite, the project proposes to construct a separated bicycle facility along one side of the internal private drive that extends from Driveway 1 at North Torrey Pines Road to Driveway 3 at Science Park Road. The project will also provide long-term bicycle parking and short-term bicycle racks on-site.

The proposed project will construct non-contiguous sidewalks along portions of the project frontage on the east side of North Torrey Pines Road and along portions of the project frontage on the north side of Science Park Road where existing street trees will be removed and replaced per Tree Survey. Non-contiguous sidewalk is not proposed along the project frontage the south side of Callan Road, as this would require removal of extensive existing landscaping, which is inconsistent with the subarea requirement of retaining existing mature trees and having development occur around and in between them.

Exhibit 2 shows the proposed project site plan.

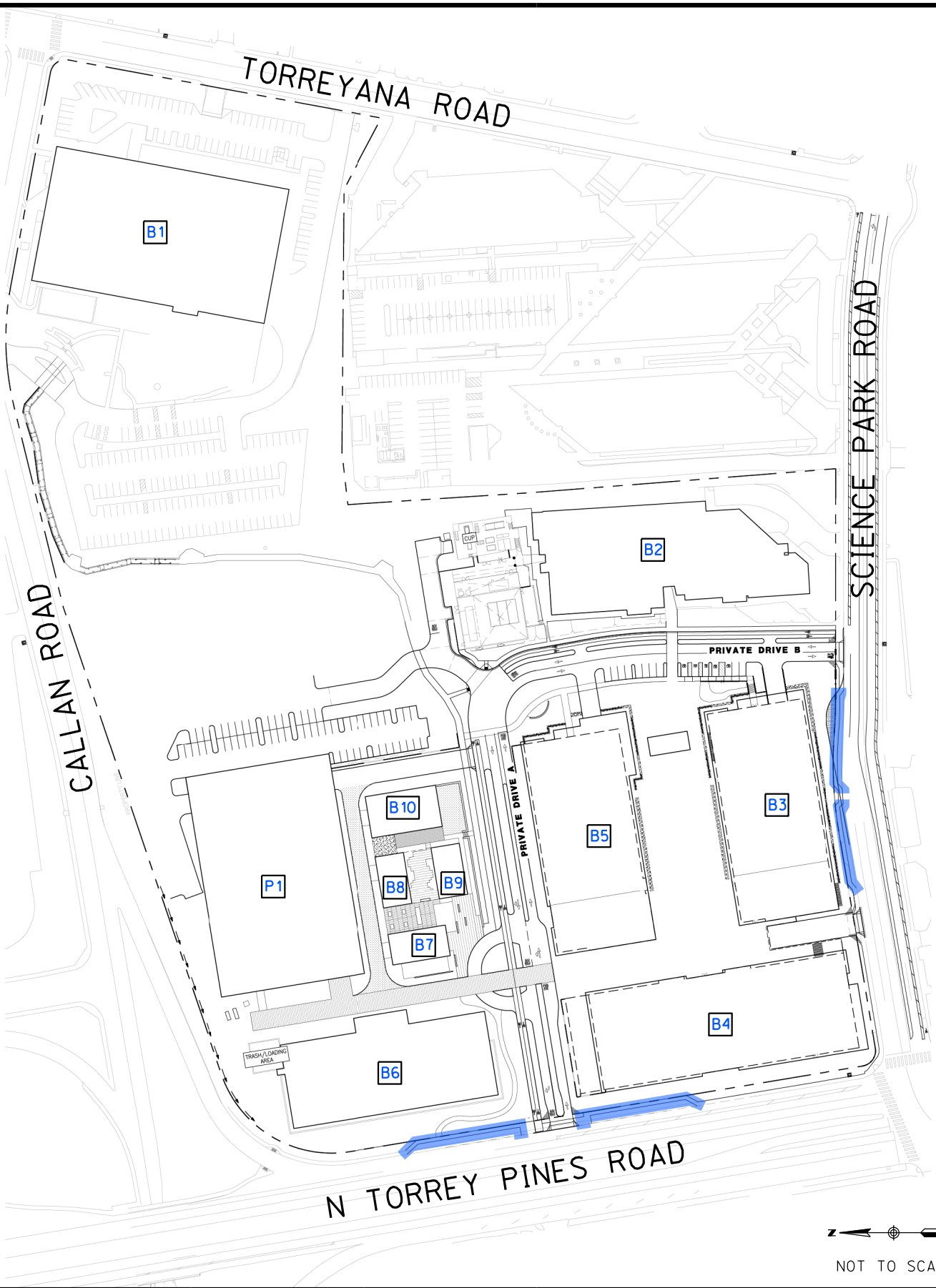

EXHIBIT 2

PROJECT SITE PLAN

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

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LEGEND =NON-CONTIGUOUS SIDEWALK

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ANALYSIS SCENARIOS AND METHODOLOGY

As required per the City of San Diego Transportation *Study Manual*, the following scenarios were evaluated in this Local Mobility Analysis:

- **Existing Conditions:** This scenario reflects the conditions on the ground at the time the traffic count data was obtained (October/November 2019).
- **Opening Year 2022 Without Project Conditions:** This scenario reflects the anticipated Opening Year 2022 of the project in 2022 based on the existing traffic volumes plus the additional traffic generated by approved or pending cumulative projects within or near the study area.
- **Opening Year 2022 With Project Conditions:** This scenario reflects the Opening Year 2022 conditions as described above with the addition of traffic generated by the proposed project.

Intersection Analysis Methodology

Intersection operations were determined at the study area intersections for the weekday AM and PM peak hours. The AM peak hour intersection analysis evaluates LOS during the hour with the highest vehicular traffic between 7:00 AM and 9:00 AM. The PM peak hour intersection analysis evaluates LOS during the hour with the highest vehicular traffic between 4:00 PM and 6:00 PM.

The Level of Service (LOS) for signalized intersections was analyzed using the methodologies described in Chapter 19 of the 6th Edition Highway Capacity Manual (HCM 6). The LOS for signalized intersections is defined in terms of control delay, which is made up of several factors that relate to right- of-way control, geometrics and traffic volumes. The signalized intersection analysis also considers intersection spacing and coordination.

The LOS for two-way and all-way stop controlled intersections was calculated using the methodologies described in Chapters 20 and 21 of the 6th Edition HCM. The LOS for a two-way stop controlled intersection is determined by the computed control delay for each minor street movement and major street left-turns, and not for the intersection as a whole. The LOS reported reflects the highest delay and associated LOS for an individual movement, typically occurring on the stop controlled approach.

The computerized analysis of signalized and unsignalized intersection operations was performed utilizing the *Synchro 10* traffic analysis software. The *Synchro 10* software supports the HCM-6 methodologies for signalized and stop controlled intersections and was utilized to produce the analysis results.

Signal timing data and parameters such as cycle lengths, splits, clearance intervals, etc. were obtained from the current signal timing sheets provided by the City and input into the Synchro software. Synchro reports delays, which correspond to a particular LOS, to describe the overall operation of an intersection.

The criteria for the LOS grade designations are provided in **Table 1**. LOS provides a quick overview of how well an intersection is performing. Within the City of San Diego, LOS D or better is considered acceptable for all signalized and unsignalized intersections during the peak hours.

TABLE 1
LOS CRITERIA FOR INTERSECTIONS

LOS	Control Delay (sec/veh)		Description
	Signalized Intersections	Unsignalized Intersections	
A	≤10	≤10	Operations with very low delay and most vehicles do not stop.
B	>10 and ≤20	>10 and ≤15	Operations with good progression but with some restricted movements.
C	>20 and ≤35	>15 and ≤25	Operations where a significant number of vehicles are stopping with some backup and light congestion.
D	>35 and ≤55	>25 and ≤35	Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines.
E	>55 and ≤80	>35 and ≤50	Operations where there is significant delay, extensive queuing, and poor progression.
F	>80	>50	Operations that are unacceptable to most drivers, when the arrival rates exceed the capacity of the intersection.

Source: *6th Edition Highway Capacity Manual.*

Intersection Systemic Safety Review

Study intersections should be compared to the City of San Diego Systemic Safety: The Data-Driven Path to Vision Zero 7 report to determine if a study intersection meets any hot spot criteria identified in Appendix C: Identification of Systemic Hotspots of the report. If a study intersection meets any of the criteria, the applicant should evaluate any potential countermeasures and coordinate with the Development Services Department Transportation Development Section staff to determine appropriate intersection improvements.

Roadway Segment Analysis Methodology

Roadway segments were analyzed based on the volume-to-capacity (v/c) ratios and the City's daily LOS capacity thresholds per Table 6 of the City's *Transportation Study Manual* (September 29, 2020). The analysis results provide a planning-level assessment of whether a segment is under, approaching, or over capacity, where LOS E represents capacity. The City of San Diego considers LOS D or better to be acceptable for daily roadway segment operations. **Table 2** presents the roadway segment capacity and LOS thresholds utilized by the City of San Diego.

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TABLE 2
LOS CRITERIA FOR ROADWAY SEGMENTS

Street Classification	Level of Service (LOS)				
	A	B	C	D	E
Expressway (8-lane, divided)	40,000	56,000	80,000	93,500	107,000
Expressway (7-lane, divided)	35,000	49,000	70,000	82,000	93,500
Expressway (6-lane, divided)	30,000	42,000	60,000	70,000	80,000
Prime Arterial (8-lane, divided)	35,000	50,000	70,000	75,000	80,000
Prime Arterial (7-lane, divided)	30,000	42,500	60,000	65,000	70,000
Prime Arterial (6-lane, divided)	25,000	35,000	50,000	55,000	60,000
Prime Arterial (5-lane, divided)	20,000	28,000	40,000	45,000	50,000
Prime Arterial (4-lane, divided)	17,500	24,500	35,000	40,000	45,000
Major Arterial (7-lane, divided)	22,500	31,500	45,000	50,000	55,000
Major Arterial (6-lane, divided)	20,000	28,000	40,000	45,000	50,000
Major Arterial (5-lane, divided)	17,500	24,500	35,000	40,000	45,000
Major Arterial (4-lane, divided)	15,000	21,000	30,000	35,000	40,000
Major Arterial (3-lane, divided)	11,250	15,750	22,500	26,250	30,000
Major Arterial (2-lane, divided)	7,500	10,500	15,000	17,500	20,000
Collector (5-lane, with TWLTL)	12,500	17,500	25,000	30,750	37,750
Collector (4-lane, with TWLTL)	10,000	14,000	20,000	25,000	30,000
Collector (3-lane, with TWLTL)	7,500	10,500	15,000	18,750	22,500
Collector (4-lane, without TWLTL)	5,000	7,000	10,000	13,000	15,000
Collector (2-lane, with TWLTL)	5,000	7,000	10,000	13,000	15,000
Collector (3-lane, without TWLTL)	4,000	5,000	7,000	10,000	11,000
Collector (2-lane, without TWLTL, no fronting property)	4,000	5,500	7,500	9,000	10,000
Collector (2-lane, without TWLTL, with fronting property)	2,500	3,500	5,000	6,500	8,000

Source: City of San Diego Transportation Study Manual (September 29, 2020) TWLTL = Two-Way Left-Turn Lane

Pedestrian Analysis Methodology

As required per the City's *Transportation Study Manual* (September 29, 2020), pedestrian analysis should primarily focus on pedestrian connectivity, walkshed analysis, presence of adequate facilities, etc.

Bicycle Analysis Methodology

As required per the City's *Transportation Study Manual* (September 29, 2020), project effects on existing and proposed bicycle facilities should be reviewed in consideration of the following:

- Bicycle analysis should primarily focus on bicycle connectivity, bikeshed analysis, presence of adequate facilities, etc.
- Consistency with the City's Bicycle Master Plan and the Community's Bicycle Mobility Element.
- On-site bike parking supply as well as bikeshare bicycles that may be parked/stored on public sidewalks.

Transit Analysis Methodology

As required per the City's *Transportation Study Manual* (September 29, 2020), project effects on the transit system should be evaluated in consideration of the following:

- Increased travel time for buses that could adversely effect on-time performance (intersection delay, corridor delay, movement delay (for transit))
- Conflicts (e.g., weaving, sight distance, etc.) involving buses at stops due to nearby driveways.
- Planned and/or proposed transit improvements and stops identified in community plans, the RTIP and/or RTP within the study area.

Project effects on transit system ridership is not typically considered an issue but may be evaluated under special circumstances (e.g., new office building along a bus line that already has substantial peak period ridership).

Criteria for Identifying Off-Site Improvements

As discussed in the City's *Transportation Study Manual* (September 29, 2020), the following criteria should be considered for identifying off-site improvements for each transportation mode:

<u>Pedestrian Facilities</u>

- Closing Sidewalk Gaps/Removing Obstructions:
    - The project should construct sidewalks to close sidewalk gaps adjacent to the project site.
    - The project should remove sidewalk obstructions that constrain pedestrian access route to less than four feet adjacent to the project site.
    - The project should construct curb ramps/meet accessibility standards for any intersections adjacent to the project site.

- Accommodating Pedestrian Demand:
    - The project should consider adding traffic calming and pedestrian-related signal timing changes (such as pedestrian hybrid beacons, leading pedestrian interval signal timing, etc.) to accommodate an increase in pedestrian demand on roadways and intersections adjacent to the project site.

Bicycle Facilities

- Accommodating Bicycle Demand:
    - The project should construct (or reserve space for) any planned bicycle facility per the Community Plan or Bicycle Master Plan.
    - The project should consider upgrading adjacent bicycle facilities by adding upgraded treatments (such as green bike lane paint, buffers, etc. where appropriate) to accommodate an increase in bicycle demand.

Transit Facilities

- Transit Priority Treatments/Improvements
    - The project should consider transit priority treatments when operational analysis determines a transit movement would experience LOS E or worse.
    - The project should consider transit priority treatments identified within the Community Plan for the study area.

- Proposed Transit Stops:
    - The project should consider accommodating transit stops to serve existing or proposed transit services, including those identified in the Community Plan, RTIP and/or RTP within the study area. The project should coordinate any identified transit stops with SANDAG, the Metropolitan Transit System (MTS) and/or the North County Transit District (NCTD).

- Transit Stop Amenities:
    - The project should coordinate with MTS and/or the NCTD, as applicable, to determine additional or upgraded transit stop amenities.

Signalized Intersections

- Adding or lengthening a turn lane:
    - Considerations for intersection improvements:
        - When considering intersection improvements for circulation, access, and safety for all modes, factors that should be considered include, but are not limited to, conflicting pedestrian movements, existing and proposed bicycle facilities, transit priority, protected or permissive turn movement phasing, number of lanes, speed of prevailing traffic and expected queue lengths.

- Left Turn Lane:
  - No Existing Left-Turn Lane: If the project adds traffic to an individual left turn movement causing the total number of peak hour left turns to exceed 100, consider adding a left turn lane.
  - Existing Single Left-Turn Lane: If the project adds traffic to an individual left turn movement causing the total number of peak hour left turns to exceed 300, consider adding a second left turn lane.

- Right Turn Lane:
  - No Existing Right-Turn Lane: If the addition of a right turn lane will not negatively affect other roadway users, will maintain a comfortable roadway environment, AND the project adds traffic to an individual right turn movement causing the total number of peak hour right turns to exceed 500, consider adding a right turn lane.
  - Existing Single Right-Turn Lane: If the addition of a right turn lane will not negatively affect other roadway users, will maintain a comfortable roadway environment, AND the project adds traffic to an individual right turn movement causing the total number of peak hour right turns to exceed 800, consider adding a second right turn lane. In addition to the considerations previously stated, dual-right turn (or more) treatments may require supplementary improvements including but not limited to no right-turn on red with blank-out signs, lead pedestrian intervals (LPIs) for pedestrians and cycle track treatment for bicyclists.

- Lengthening a Turn Pocket:
  - If the project adds traffic to a turning movement and causes the 95th percentile queue to exceed the available turn pocket length, consider lengthening the turn pocket.

- Signal Timing Improvements/Signal Modifications:

  - Determined based on intersection operations analysis as follows:
    - Within a 1/2 mile path of travel of a Major Transit Stop: If the project causes an intersection to degrade to LOS F, or if the project adds traffic to a signal already operating at LOS F.
    - Outside of a 1/2 mile path of travel of a Major Transit Stop: If the project causes an intersection to degrade to LOS E or F, or if the project adds traffic to a signal already operating at LOS E or F.

  - Types of signal improvements that can be considered are:
    - Updating signal split times
    - Transit signal priority improvements
    - Right turn overlap phasing
    - Signal phasing changes
    - Intelligent Transportation Systems (ITS) improvements

Unsignalized Intersections

- Considerations for intersection improvements:
    - When considering intersection improvements for circulation, access, and safety for all modes, factors that should be considered include, but are not limited to, conflicting pedestrian movements, existing and proposed bicycle facilities, transit priority, protected or permissive turn movement phasing, number of lanes, speed of prevailing traffic and expected queue lengths.

- Constructing a Roundabout or Traffic Signal at an all-way stop-controlled intersection: If the project causes the operations at an all-way stop-controlled intersection to degrade (see below), perform an intersection control evaluation that includes a signal warrant analysis and a roundabout LOS analysis. Prepare a roundabout conceptual layout (prepared by a consultant qualified/experienced in roundabout design) to determine the geometric impact of a roundabout. Coordinate with Development Services Department Transportation Development Section staff on appropriate intersection control improvement. Staff may request additional lifecycle safety and mobility.
    - The intersection control evaluation should be prepared If the project causes an all-way stop-controlled intersection to degrade as follows:
        - Within a 1/2 mile path of travel of a Major Transit Stop: If the project causes an all-way stop-controlled intersection located to degrade to LOS F, or if the project adds traffic to an all-way stop-controlled intersection already operating at LOS F.
        - Outside of a 1/2 mile path of travel of a Major Transit Stop: If the project causes an all-way stop-controlled intersection to degrade to LOS E or F, or if the project adds traffic to a adds traffic to an all-way stop controlled intersection already operating at LOS E or F.

- Constructing a Roundabout or Traffic Signal at a side-street stop-controlled intersection: If the project causes the operations at a side-street stop-controlled intersection to degrade (see below), perform an intersection control evaluation that includes a signal warrant analysis and a roundabout LOS analysis. Prepare a roundabout conceptual layout (prepared by a consultant qualified/experienced in roundabout design) to determine the geometric impact of a roundabout. Coordinate with Development Services Department Transportation Development Section staff on appropriate intersection control improvement. Staff may request additional lifecycle safety and mobility.
    - The intersection control evaluation should be prepared If the project causes a side-street stop-controlled intersection to degrade as follows:
        - Within a 1/2 mile path of travel of a Major Transit Stop: If the project causes the worst movement of a side-street stop-controlled intersection to degrade to LOS F, or if the project adds traffic to the worst movement of a side-street stop- controlled intersection that is already operating at LOS F.
        - Outside of a 1/2 mile path of travel of a Major Transit Stop: If the project causes the worst movement of a side-street stop-controlled intersection to degrade to LOS E or F, or if the project adds traffic to the worst movement of a side-street stop-controlled intersection that is already operating at LOS E or F.

Roadway Segments

- Improvements identified in the community plan (including upgrading to ultimate classification):
    - If the project adds greater than 50% of total daily vehicle trips on the segment, the project should consider implementing the improvement as identified in the community plan.
    - If the project adds less than or equal to 50% of total daily vehicle trips on the segment, the project should evaluate its fair share towards the improvement.

In addition, the project should make improvements to study intersections and roadways to preserve consistency with Community Plan/PFFP/IFS identified improvements. The project applicant will have responsibility for the implementation of identified improvements.

LOCAL MOBILITY ANALYSIS STUDY AREA

The City's *Transportation Study Manual* (September 29, 2020) requires that the project study area for the Local Mobility Analysis includes the following:

- All signalized and unsignalized intersections located within ½ mile from the project site and where the project will add 50 or more peak hour primary trips to any turning movement at an intersection.
- All freeway ramp terminal intersections where a project adds 50 or more peak hour final primary (cumulative) (AM or PM) net new trips in either direction must be analyzed regardless of their distance from the project site.
- All roadway segments where the project adds 1,000 or more primary trips if consistent with the Community Plan, or 500 or more primary trips if inconsistent with the Community Plan.
- Pedestrian facilities located within ½ mile of the project site.
- Bicycle facilities located within ½ mile of the project site.
- Transit facilities located within ½ mile of the project site.

Based on the criteria listed above, the study area consists of the following intersections and roadway segments:

Study Intersections

1. N Torrey Pines Road SB Connector / Callan Road
2. N Torrey Pines Road NB Connector / Callan Road
3. Callan Road / Torreyana Road
4. Science Park Road / Torreyana Road
5. N Torrey Pines Road / Science Park Road
6. N Torrey Pines Road / John Jay Hopkins Drive
7. N Torrey Pines Road / Scripps Clinic South Driveway
8. Genesee Avenue / I-5 Southbound Ramps
9. Genesee Avenue / I-5 Northbound Ramps
10. N Torrey Pines Road / Driveway 1
11. Science Park Road / Driveway 2
12. Science Park Road / Driveway 3
13. Science Park Road / Driveway 4
14. Torreyana Road / Driveway 5
15. Torreyana Road / Driveway 6
16. Callan Road / Driveway 7

Although some of the study intersections listed above are below the City's minimum threshold of 50 peak hour trips to a single turning movement, they are included in this Local Mobility Analysis to include analysis of all driveway intersections serving the project site and off-site study intersections immediately adjacent to the project site.

Study Roadway Segments

1. North Torrey Pines Road, Callan Road to Science Park Road
2. Torreyana Road, Callan Road to Science Park Road
3. Callan Road, North Torrey Pines Road to Torreyana Road
4. Science Park Road, North Torrey Pines Road to Torreyana Road

Although most of the study roadway segments listed above fall below the City's minimum threshold of 1,000 daily trips added to a roadway segment, they are included in this Local Mobility Analysis as they are located along the project site frontage.

Study Pedestrian Facilities

- Evaluation of all pedestrian facilities along roadways with direct connectivity to the project site and are within ½ mile walking distance of the project site.

Study Bicycle Facilities

- Evaluation of all bicycle facilities along roadways with direct connectivity to the project site and are within ½ mile distance of the project site.

Study Transit Facilities

- Evaluation of all transit bus stops along roadways within ¼ mile walking distance of the project site, and any major transit facilities (i.e. transit stations) within ½ mile walking distance of the project site.

Exhibit 3 illustrates the analysis study area based on the requirements listed above.

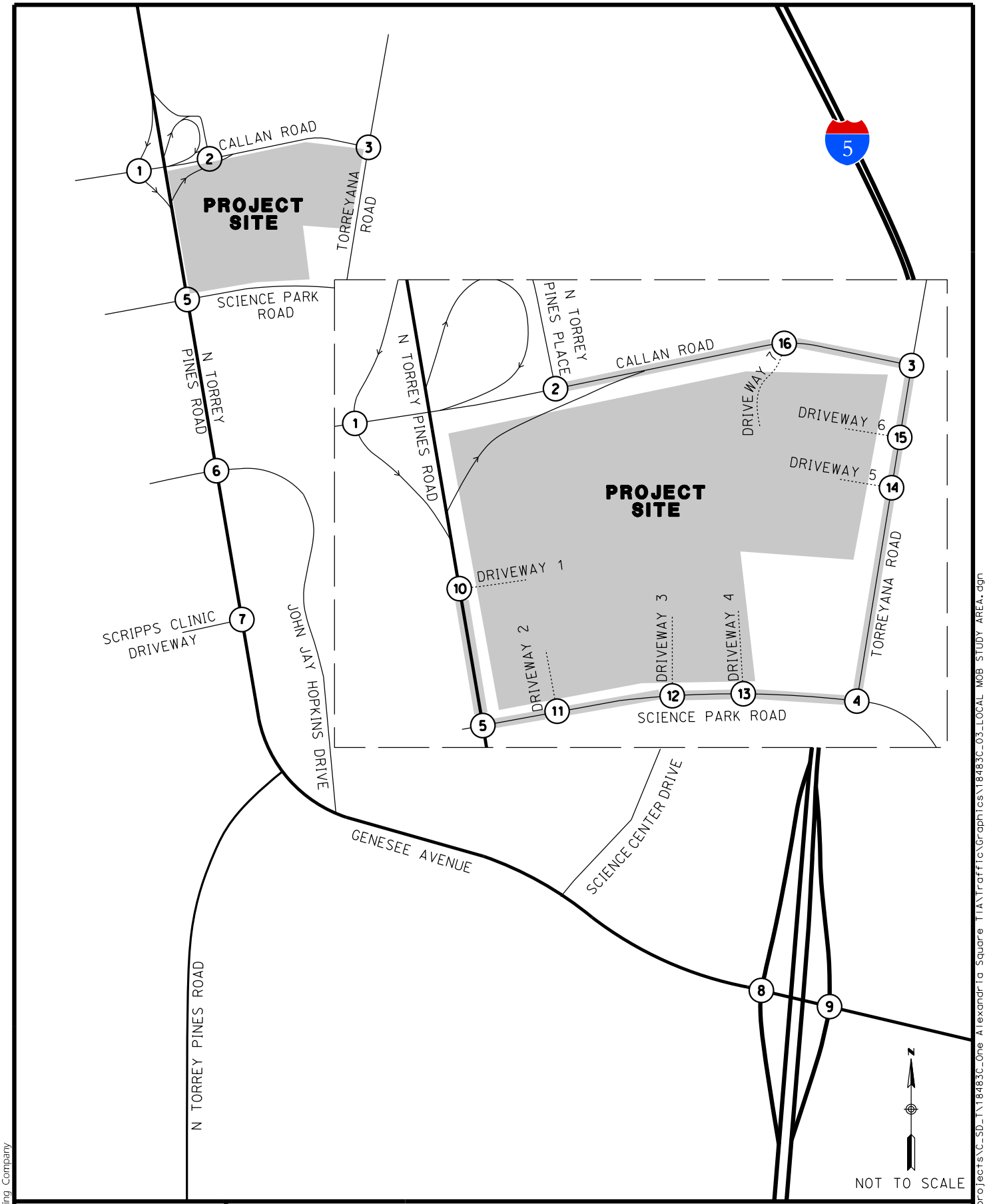

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EXHIBIT 3

LOCAL MOBILITY ANALYSIS STUDY AREA

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

LEGEND

(X) =STUDY INTERSECTIONS

=STUDY ROADWAY SEGMENTS

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EXISTING MULTI-MODAL TRANSPORTATION CONDITIONS

Existing Roadway Network

The following is a brief description of roadways within the study area as identified in the *University Community Plan* (Amended December 5, 2016):

North Torrey Pines Road is classified as a 6-lane Primary Arterial between Genesee Road and Callan Road, and is classified as a 5-lane Major Street north of Callan Road. North Torrey Pines Road is built to its ultimate classification within the project study area. Class II bikes lanes are provided in both directions of travel with contiguous sidewalks along the project frontage and non-contiguous sidewalks in the southbound direction. On-street parking along North Torrey Pines Road is not permitted. The posted speed limit on North Torrey Pines Road is 50 miles per hour.

Torreyana Road is not a classified roadway in the *University Community Plan,* but it is built as and functions as a two-lane Collector without a two-way left-turn lane (40 feet curb-to-curb width). Sidewalks are provided in both directions of travel, but there are currently no bicycle facilities on Torreyana Road. On-street parking along Torreyana Road is generally permitted. There is no posted speed limit on Torreyana Road, but the prima facie speed limit is assumed to be 25 miles per hour based on the surrounding roadways (Callan Road and Science Park Road).

Callan Road is not a classified roadway in the *University Community Plan,* but it is built as and functions as a two-lane Collector without a two-way left-turn lane (40 feet curb-to-curb width). Contiguous sidewalks are provided in both directions of travel, but there are currently no bicycle facilities on Callan Road. On-street parking along Callan Road is generally permitted. The posted speed limit on Callan Road is 25 miles per hour.

Science Park Road is not a classified roadway in the *University Community Plan,* but it is built as and functions as a two-lane Collector without a two-way left-turn lane (50 feet curb-to-curb width). Contiguous sidewalks are provided in both directions of travel, but there are currently no bicycle facilities on Science Park Road. On-street parking along Science Park Road is generally permitted. The posted speed limit on Science Park Road is 25 miles per hour.

Existing Pedestrian Network

Sidewalks are currently provided in both directions of travel along the study area roadways. Continental-style pedestrian crosswalks are provided at the signalized North Torrey Pines Road / Science Park Road intersection across the north leg (North Torrey Pines Road) and the east leg (Science Park Road). Continental-style pedestrian crosswalks are also provided at the all-way-stop controlled intersection of Callan Road / Torreyana Road across the north and south legs (Torreyana Road) and the west leg (Callan Road).

Existing Bicycle Network

North Torrey Pines Road currently has Class II bike lanes that are provided in both directions of travel. The northbound Class II bike lane on North Torrey Pines Road ranges between 6 and 8 feet in width with a 4-foot buffer through the study area. The southbound Class II bike lane on North Torrey Pines Road ranges between 5 and 6 feet in width and no buffer is provided. There is a 250-foot long section on northbound North Torrey Pines Road approaching John Jay Hopkins Drive where no Class II bike lane is provided, and Class III "sharrow" pavement markings are provided within the northbound right-turn lane at the North Torrey Pines Road / John Jay Hopkins Drive intersection. The northbound Class II bike lane is marked with green paint at several conflict zones to provide higher visibility. Class II bike lanes are also provided along John Jay Hopkins Drive in both directions of travel.

Existing Transit Network

North County Transit District (NCTD) and Metropolitan Transit Service (MTS) currently provide the following transit bus routes within the study area:

- **NTCD Route 101:** Extends between the UTC Transit Center and the Oceanside Transit Center via North Torrey Pines Road and Coast Highway 101. Service is provided seven days per week between 5:00am and 11:00am, with 30-minute headways throughout most of the day.

- **MTS Route 978:** Extends between the Sorrento Valley COASTER Station and the study area via Interstate 5, Genesee Road and North Torrey Pines Road, and circulates around the project site via Science Park Road (eastbound), Torreyana Road (northbound) and Callan Road (westbound). Service is provided Monday through Friday during the morning (7:14am – 8:40am) with 60-minute headway and afternoon/evening (4:16pm – 5:10pm) with 30-minute headway.

The following transit bus stops are currently provided within ¼ mile walking distance of the project site:

NTCD Route 101

- Northbound North Torrey Pines Road near Callan Road interchange (located approximately 400 feet north of Callan Road). No shelter or amenities provided.
- Northbound North Torrey Pines Road at Science Park Road (located approximately 100 feet north of Science Park Road). No shelter or amenities provided.
- Southbound North Torrey Pines Road at Science Park Road (located approximately 50 feet south of Science Park Road). Bench, shelter and trash receptacle provided.

MTS Route 978

- Eastbound Science Park Road (located near 3033 Science Park Road). No transit stop sign and pole, shelter or amenities provided.
- Northbound Torreyana Road at Science Park Road (located approximately 50 feet north of Science Park Road). No transit stop sign and pole, shelter or amenities provided.
- Northbound Torreyana Road at Callan Road (located approximately 150 feet south of Callan Road). No transit stop sign and pole, shelter or amenities provided.
- Westbound Callan Road (located 200 feet west of driveway for 3020-3030 Callan Road). No transit stop sign and pole, shelter or amenities provided.

The NTCD and MTS transit routes and schedules as described above are provided in **Appendix B**.

Exhibit 4 illustrates the existing (2019) transportation conditions within the study area as described above.

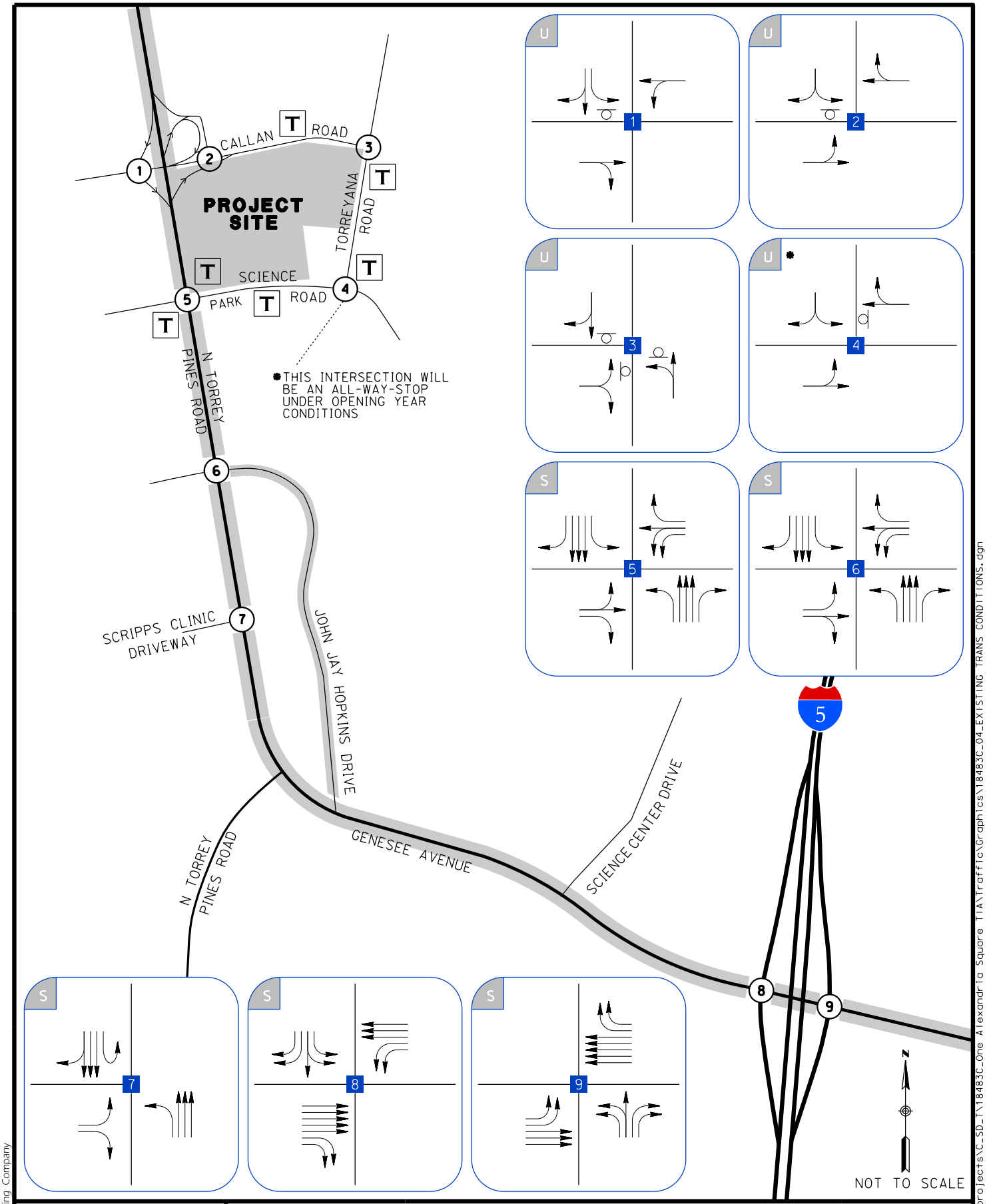

EXHIBIT 4

EXISTING TRANSPORTATION CONDITIONS

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

LEGEND

U =UNSIGNALIZED

S =SIGNALIZED

=STOP SIGN

=CLASS II BIKE LANE

T =BUS STOP

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Existing Transportation Volumes

Existing vehicular, pedestrian and bicycle volumes at the following seven (7) existing study area intersections were obtained from counts conducted by National Data Services (NDS) on Tuesday, October 29, 2019 and on Wednesday, November 13, 2019 during the AM (7-9) and PM (4-6) peak periods while local schools were in regular session:

1. N Torrey Pines Road SB Connector / Callan Road
2. N Torrey Pines Road NB Connector / Callan Road
3. Callan Road / Torreyana Road
4. Science Park Road / Torreyana Road
5. N Torrey Pines Road / Science Park Road
6. N Torrey Pines Road / John Jay Hopkins Drive
7. N Torrey Pines Road / Scripps Clinic South Driveway
8. Genesee Avenue / I-5 Southbound Ramps
9. Genesee Avenue / I-5 Northbound Ramps

Vehicle trip counts were also collected at the following existing driveways during the AM/PM peak periods (7-9 AM and 4-6 PM) and also over a 24-hour period on Tuesday, October 29, 2019, while local schools were in session:

1. North Torrey Pines Road Northerly Driveway
2. North Torrey Pines Road Southerly Driveway
3. Science Park Road Westerly Driveway
4. Science Park Road Middle Driveway
5. Science Park Road Easterly Driveway
6. Torreyana Road Southerly Driveway
7. Torreyana Road Northerly Driveway
8. Callan Road Driveway

Additionally, machine counts were collected on Tuesday, October 29, 2019 on the following four (4) roadway segments listed below in order to document the daily vehicular traffic volumes for a 24-hour period:

1. North Torrey Pines Road, Callan Road to Science Park Road
2. Torreyana Road, Callan Road to Science Park Road
3. Callan Road, North Torrey Pines Road to Torreyana Road
4. Science Park Road, North Torrey Pines Road to Torreyana Road

Exhibit 5 shows the existing intersection turning movement volumes and average daily traffic (ADT) volumes within the study area. **Exhibit 6** illustrates the existing daily and AM/PM peak hour vehicle trips at the eight existing driveways.

Appendix C contains the vehicular, pedestrian and bicycle count data.

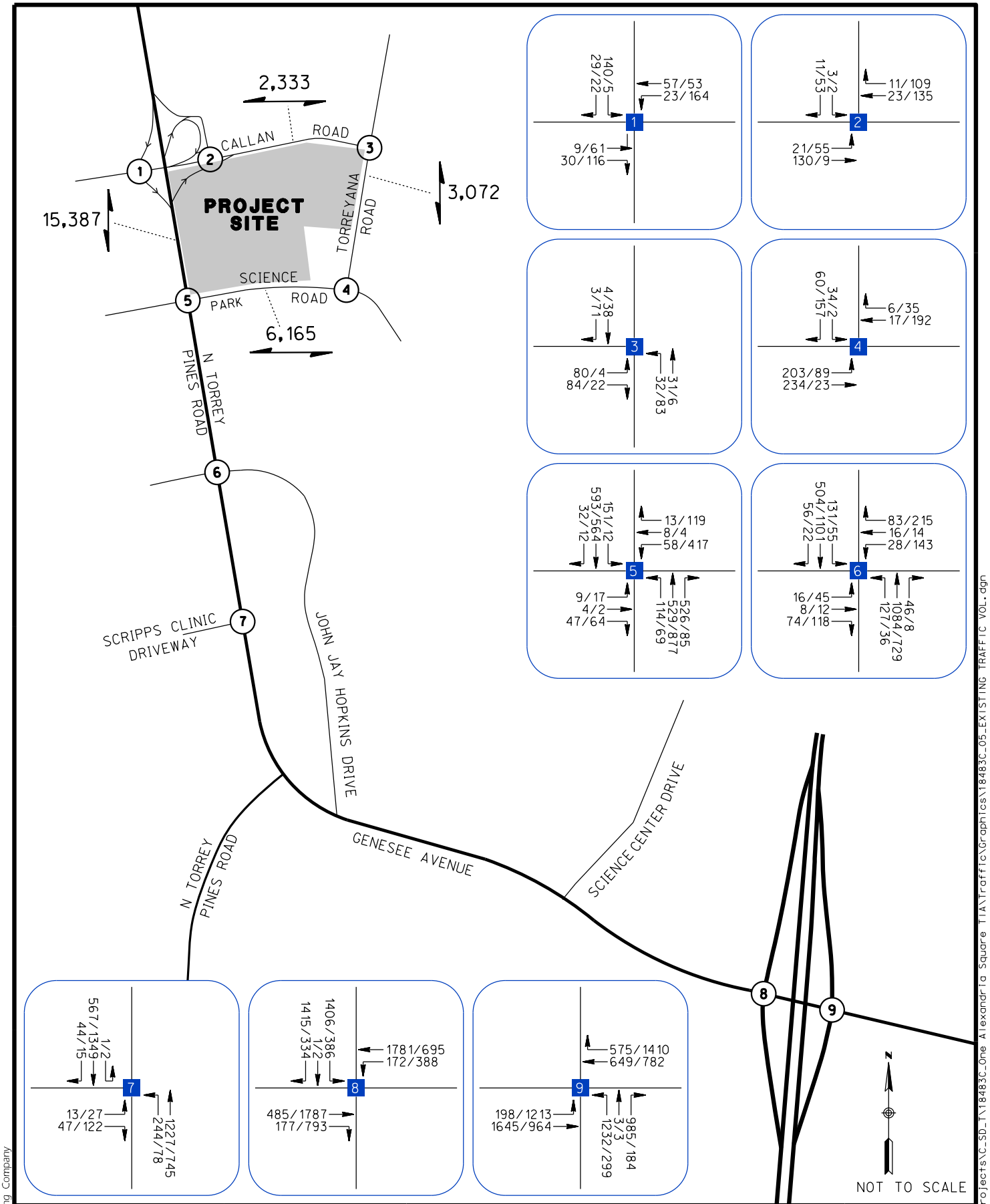

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EXHIBIT 5

EXISTING TRAFFIC VOLUMES

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

LEGEND

X,XXX =TWO-WAY ADT

AM/PM=PEAK HOUR VOLUMES

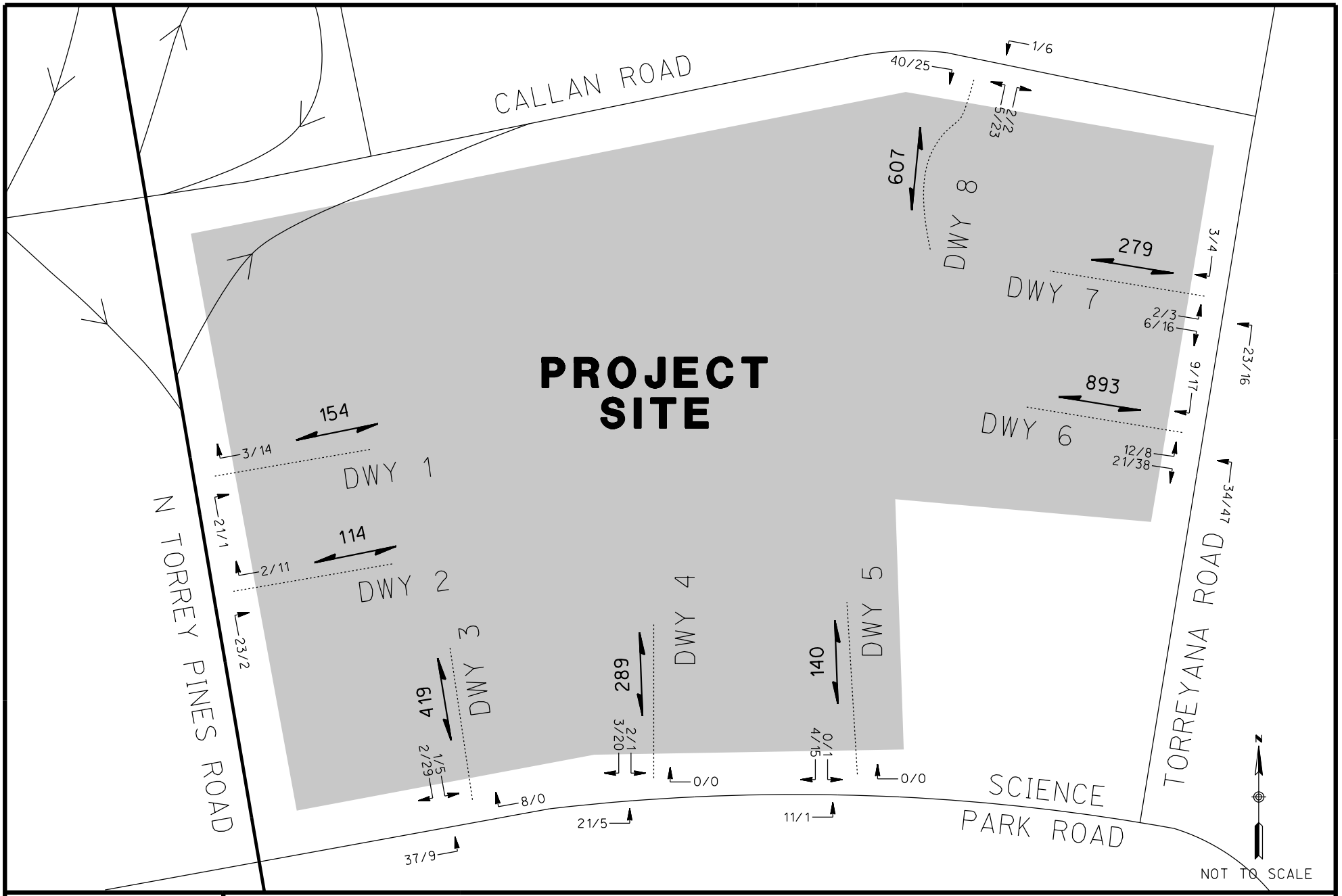

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EXHIBIT 6

EXISTING VEHICULAR TRIPS AT DRIVEWAYS

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

LEGEND

X,XXX =TWO-WAY ADT

AM/PM=PEAK HOUR VOLUMES

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Existing Intersection Operations

The existing intersection operations results are based on existing turning movement volumes collected, existing intersection geometry and existing signal timing.

Table 3 shows the existing conditions intersection operations during the peak hours. **Appendix D** contains the intersection operations worksheets. The existing signal timing data provided by the City of San Diego and by Caltrans is provided in **Appendix E**.

As shown in Table 3, the Genesee Avenue / I-5 Northbound Ramps intersection currently operates at LOS F during the PM peak hour. Review of the existing coordinated signal timing plan at the intersection revealed that the existing PM peak hour cycle length (90 seconds) is not long enough to adequately serve all movements at the intersection.

Existing Roadway Segment Operations

The existing roadway level of service results are based on existing daily traffic volumes collected and functional classification roadway capacity. **Table 4** summarizes the roadway segment capacity analysis results under Existing Conditions. As shown in the table, all study roadway segments currently operate at LOS D or better.

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TABLE 3
EXISTING INTERSECTION OPERATIONS

	INTERSECTION	EXISTING (2019)						
		CONTROL TYPE	AM PEAK HOUR			PM PEAK HOUR		
				DELAY [1]	LOS [2]		DELAY [1]	LOS [2]
1	N Torrey Pines Road SB Connector / Callan Road	(TWSC)[3]	SBL	10.3	B	SBL	14.0	B
2	N Torrey Pines Road NB Connector / Callan Road	(TWSC)[3]	SBL	8.8	A	SBL	9.8	A
3	Callan Road / Torreyana Road	(AWSC)	Overall	7.9	A	Overall	7.5	A
4	Science Park Road / Torreyana Road	(TWSC)[3]	WBT	8.4	A	WBT	9.5	A
5	N Torrey Pines Road / Science Park Road	(S)	Overall	20.0	C	Overall	21.7	C
6	N Torrey Pines Road / John Jay Hopkins Drive	(S)	Overall	39.8	D	Overall	41.2	D
7	N Torrey Pines Road / Scripps Clinic South Driveway[4]	(S)	Overall	10.2	B	Overall	10.5	B
8	Genesee Avenue / I-5 Southbound Ramps	(S)	Overall	45.9	D	Overall	18.7	B
9	Genesee Avenue / I-5 Northbound Ramps	(S)	Overall	32.2	C	Overall	**89.9**	**F**

FOOTNOTES:

1. Delay is measured in seconds per vehicle.

2. Level of Service

3. Delay and LOS being reported for the TWSC control type are taken from the movement with the worst delay.

4. HCM-6 in Synchro does not analyze U-turn movements. The southbound U-turn movement at the intersection was modeled in Synchro as a left-turn movement to provide delay for that movement. This was achieved by creating a “dummy” east leg of the intersection to receive the southbound left-turn movement.

Results calculated utilizing the methodologies described in Chapters 18, 19, and 20 of 6th edition of the Highway Capacity Manual (HCM 6).

(S)=Signalized, (TWSC)=Two-Way Stop Controlled, (AWSC)=All-Way Stop Controlled, (R)=Roundabout.

NB=Northbound, WB=Westbound, etc.

L=Left-turn movement, T=Thru movement, R=Right-turn movement, etc.

Deficient delay and LOS indicated in **bold**.

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TABLE 4
EXISTING ROADWAY SEGMENT OPERATIONS

	ROADWAY SEGMENT	EXISTING CLASSIFICATION	CAPACITY [a]	EXISTING (2019)		
				VOLUME	V/C [b]	LOS [c]
1	Callan Road, North Torrey Pines Road to Torreyana Road	2-Lane Collector	8,000	2,333	0.292	A
2	Science Park Road, North Torrey Pines Road to Torreyana Road	2-Lane Collector	8,000	6,165	0.771	D
3	Torreyana Road, Callan Road to Science Park Road	2-Lane Collector	8,000	3,072	0.384	B
4	North Torrey Pines Road, Callan Road to Science Park Road	6-Lane Primary Arterial	60,000	15,387	0.256	A

FOOTNOTES:

a. Roadway volume capacity and classification based on the City of San Diego *Transportation Study Manual* (September 29, 2020).

b. Volume to Capacity ratio.

c. Level of Service.

PROJECT TRIP GENERATION

The trip generation for the proposed project was calculated based on the published trip rates for a Scientific Research and Development use from the City of San Diego's *Trip Generation Manual* (May 2003).

Table 5A presents the trip generation of the existing 310,357 square-feet of research and development space, the existing 167,371 square-foot buildings (Buildings "A" and "B" in Appendix A) proposed to be demolished, and the proposed 285,175 square-feet of new research and development space (including 15,500 square-feet of buildings that will be used for the ancillary uses).

As shown in Table 5A, the existing site currently generates a total of 2,483 trips per day, with a total of 398 trips occurring during the AM peak hour (358 IN, 40 OUT), and a total of 348 trips occurring during the PM peak hour (35 IN, 313 OUT).

The table shows that the removal of the existing 167,371 square-feet of scientific research and development (Buildings "A" and "B") would result in a net decrease of 1,339 daily trips, a net decrease of 214 AM peak hour trips (-193 IN, -21 OUT), and a net decrease of 187 PM peak hour trips (-19 IN, -169 OUT).

Table 5A also shows that the net increase of 117,803 square-feet of research and development space associated with the proposed project would result in a net increase of 942 daily trips, 151 AM peak hour trips (136 IN, 15 OUT), and 132 peak hour trips (13 IN, 119 OUT).

However, to retain the project applicant's flexibility in design, the intersection and roadway segment analysis results, and all volume exhibits in this LMA are based on an earlier version of the project site plan that generated a slightly higher number of vehicular trips than what is currently proposed. **Table 5B** presents the trip generation of the previously proposed site plan upon which the analysis and volumes are based.

As shown in Table 5B, the net increase of 124,321 square-feet of research and development space associated with the previously proposed site plan would result in a net increase of 995 daily trips, 159 AM peak hour trips (143 IN, 16 OUT), and 139 peak hour trips (14 IN, 125 OUT).

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

The project trip distribution was developed based on the existing and proposed land uses, the project site's proximity to arterial roadways and freeway interchanges, and our knowledge of local traffic patterns in the surrounding area. The percent trip distribution of the four project driveways serving the redevelopment area of the project site was estimated based on a combination of the existing driveway counts, the locations and sizes of the proposed new buildings, and the locations of the proposed parking areas.

Exhibit 7 illustrates the project trip distribution percentages. **Exhibit 8** shows the trip distribution for the project driveways and the roadways immediately adjacent to the project site.

Based on the project trip generation and distribution, the project trips were assigned to the driveways, intersections and roadway segments in the study area. **Exhibit 9** illustrates the project trip assignment for the non-driveway study intersections. **Exhibit 10** shows the trip assignment on the study roadway segments and at each of the four project driveways serving the redevelopment area of the project site.

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TABLE 5A
PROJECT TRIP GENERATION: CURRENTLY PROPOSED SITE PLAN

LAND USE	UNIT	DAILY (PER UNIT)	AM PEAK HOUR			PM PEAK HOUR		
			TOTAL (OF DAILY)	INBOUND (% AM)	OUTBOUND (% AM)	TOTAL (OF DAILY)	INBOUND (% PM)	OUTBOUND (% PM)
Trip Generation Rates (City of San Diego)								
Research and Development	KSF	8.0	16%	90%	10%	14%	10%	90%
Forecast Project Generated Trips								
Land Use	**Size**	**Unit**	**Daily Trips**	**AM Peak Hour**			**PM Peak Hour**	
				Total	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**
Existing Trip Generation (Without Project)									
Research and Development	310.357	KSF	2,483	398	358	40	348	35	313
Removal of Existing Buildings "A" and "B"									
Research and Development	-167.371	KSF	-1,339	-214	-193	-21	-187	-19	-169
Trip Generation of Proposed New Buildings									
Research and Development	285.175	KSF	2,281	365	329	37	319	32	287
Total Combined Trip Generation of Existing + New Buildings									
Research and Development	428.160	KSF	3,425	549	494	55	480	48	432
Net Increase in Trip Generation (Total Combined Trips – Existing Trips)									
Research and Development	**117.803**	**KSF**	**942**	**151**	**136**	**15**	**132**	**13**	**119**

Source: *Trip Generation Manual*, City of San Diego Municipal Code Land Development Code (May 2003).

Notes: KSF = Thousand Square-Feet

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TABLE 5B
PROJECT TRIP GENERATION: PREVIOUSLY PROPOSED SITE PLAN

LAND USE	UNIT	DAILY (PER UNIT)	AM PEAK HOUR			PM PEAK HOUR		
			TOTAL (OF DAILY)	INBOUND (% AM)	OUTBOUND (% AM)	TOTAL (OF DAILY)	INBOUND (% PM)	OUTBOUND (% PM)
Trip Generation Rates (City of San Diego)								
Research and Development	KSF	8.0	16%	90%	10%	14%	10%	90%
Forecast Project Generated Trips								
Land Use	**Size**	**Unit**	**Daily Trips**	**AM Peak Hour**			**PM Peak Hour**	
				Total	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**
Existing Trip Generation (Without Project)									
Research and Development	310.148	KSF	2,481	397	357	40	347	35	313
Removal of Existing Building "A" and Building "B"									
Research and Development	-167.371	KSF	-1,339	-214	-193	-21	-187	-19	-169
Trip Generation of Proposed New Buildings (Excluding Ancillary Uses)									
Research and Development	291.692	KSF	2,334	373	336	37	327	33	294
Total Combined Trip Generation of Existing + New Buildings									
Research and Development	434.469	KSF	3,476	556	501	56	487	49	438
Net Increase in Trip Generation (Total Combined Trips – Existing Trips)									
Research and Development	**124.321**	**KSF**	**995**	**159**	**143**	**16**	**139**	**14**	**125**

Source: *Trip Generation Manual*, City of San Diego Municipal Code Land Development Code (May 2003).

Notes: KSF = Thousand Square-Feet

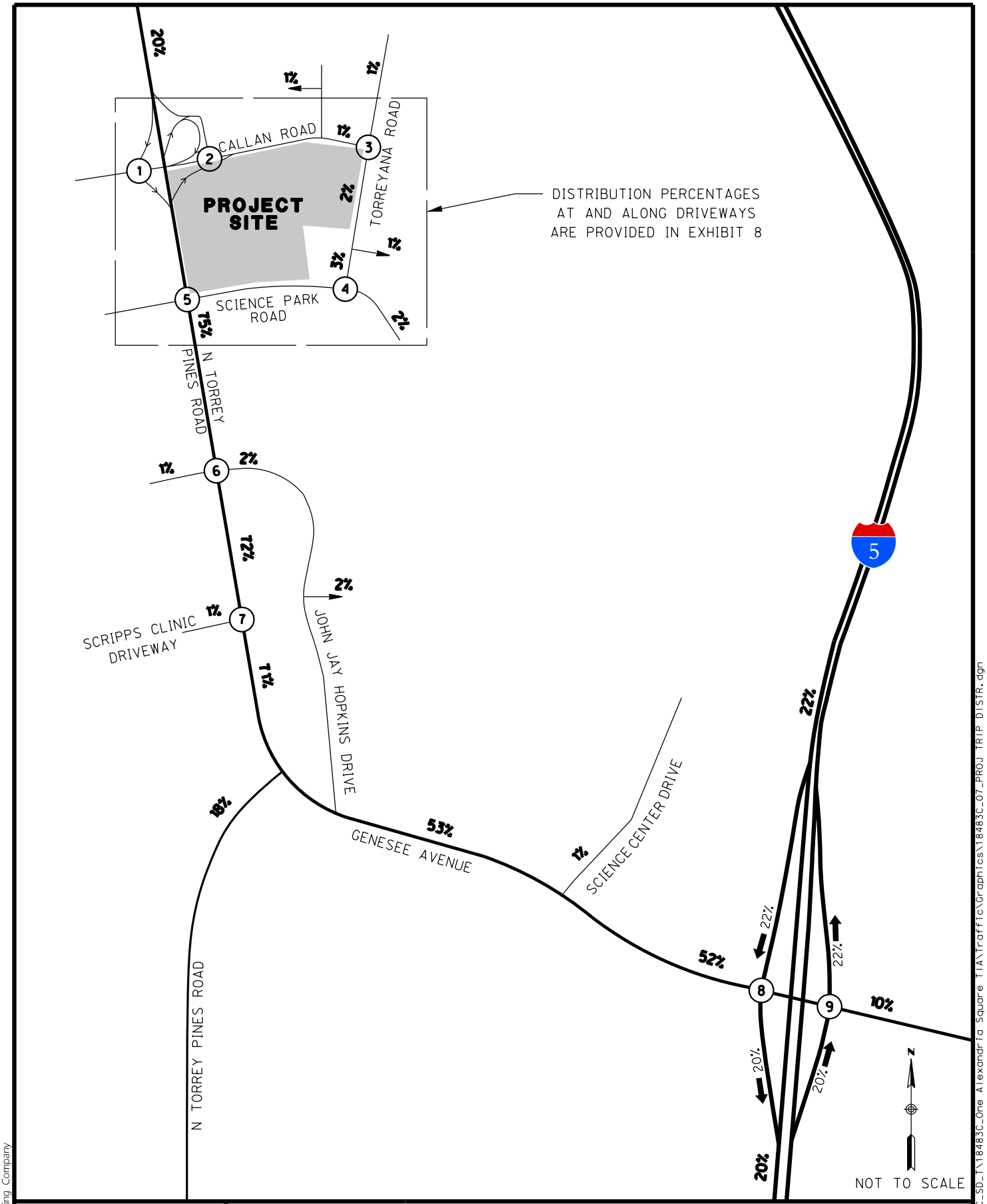

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EXHIBIT 7

PROJECT TRIP DISTRIBUTION

LEGEND: XX% = DISTRIBUTION PERCENTAGE

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

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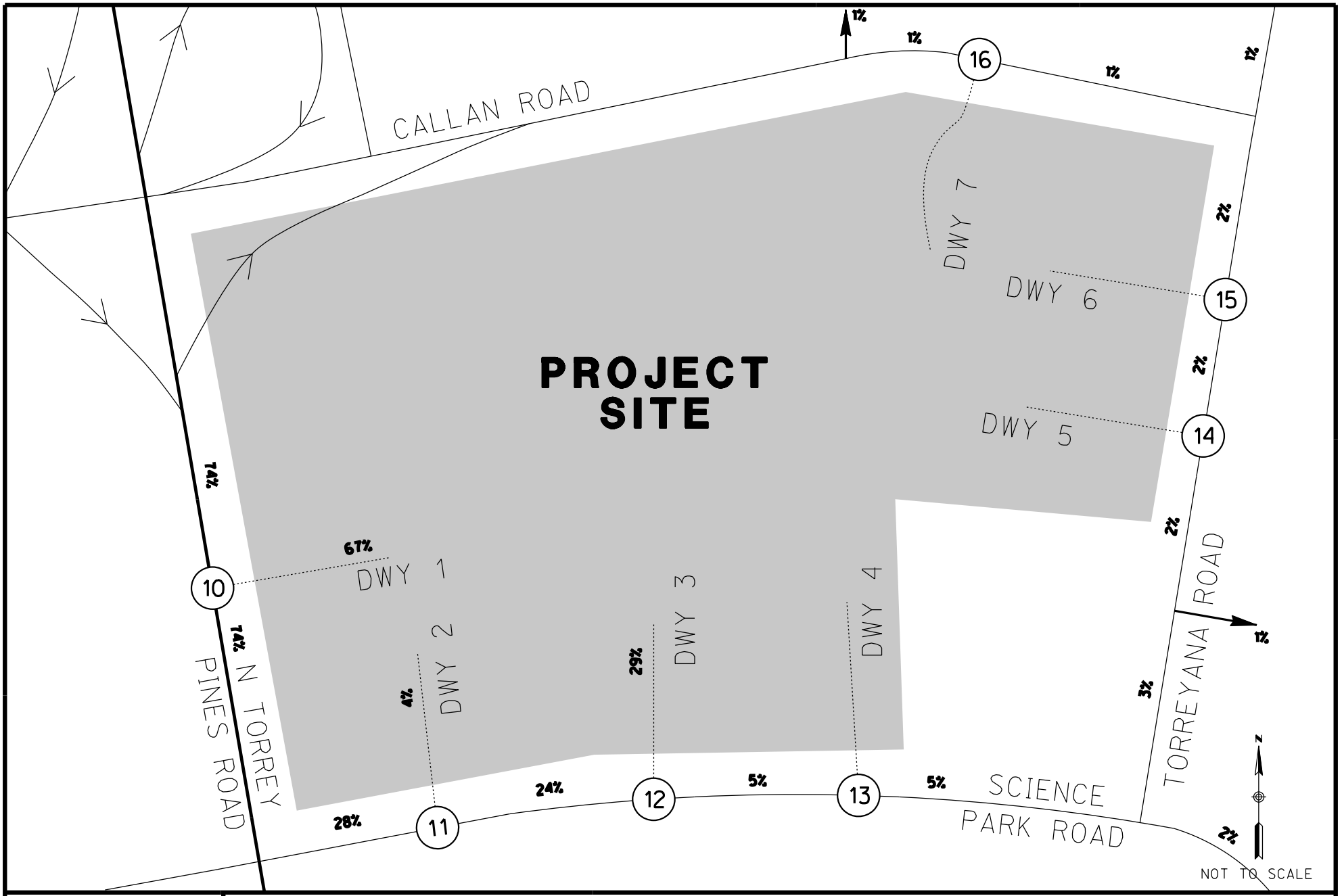

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EXHIBIT 8

PROJECT TRIP DISTRIBUTION AT DRIVEWAYS

LEGEND xx% =DISTRIBUTION PERCENTAGE

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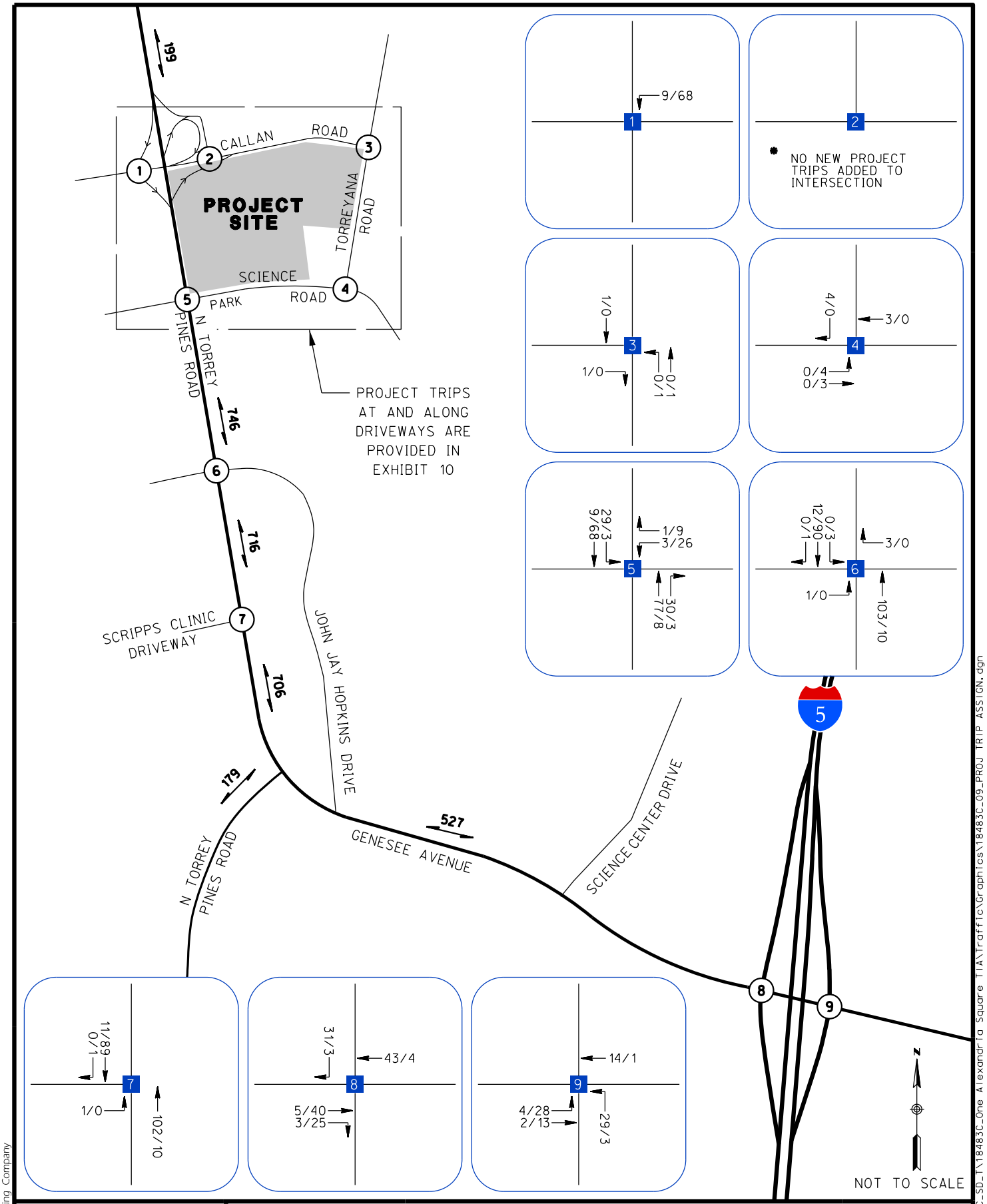

EXHIBIT 9

PROJECT TRIP ASSIGNMENT

LEGEND

AM/PM=PEAK HOUR VOLUMES

XXX =TWO-WAY ADT

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ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

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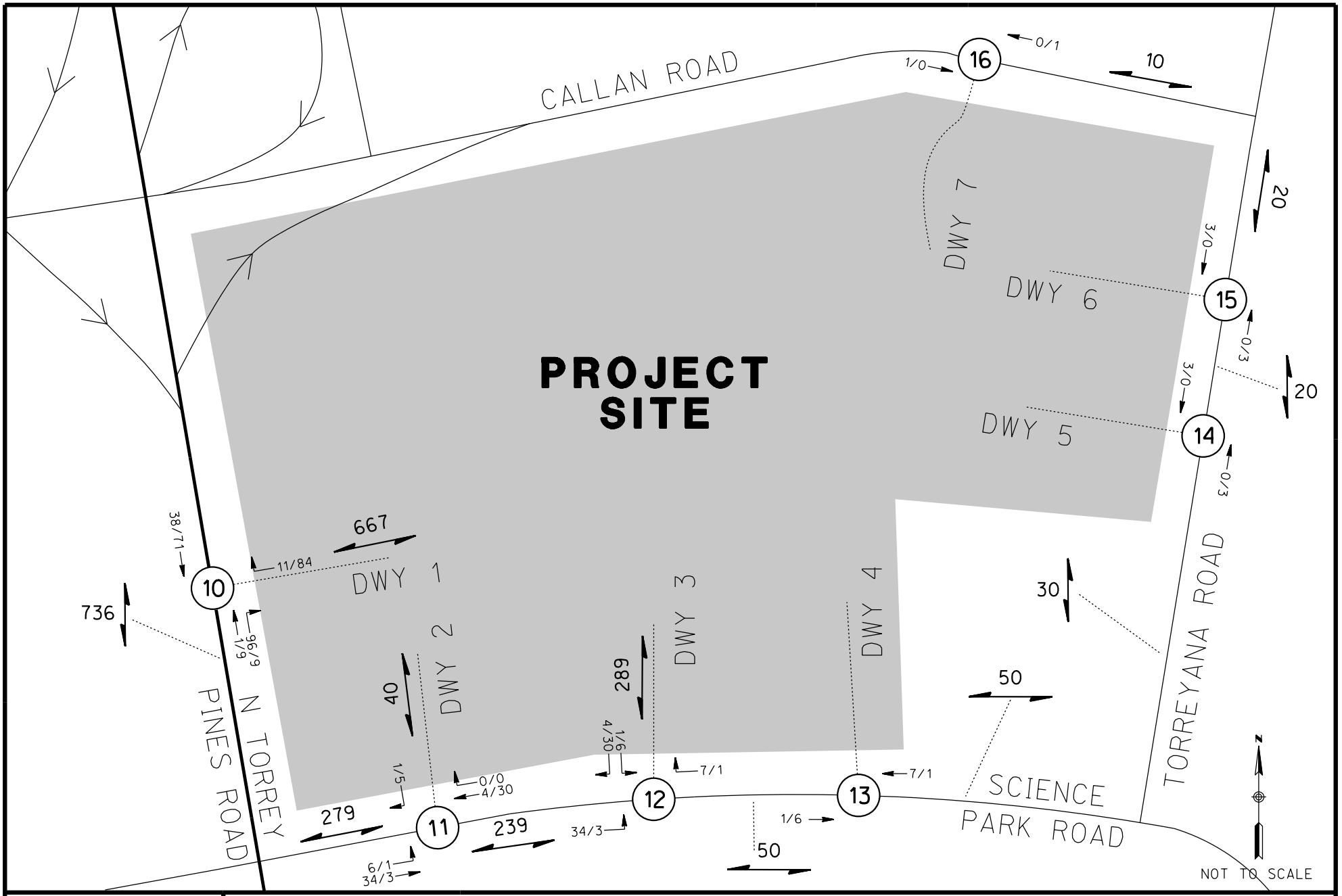

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EXHIBIT 10

PROJECT TRIP ASSIGNMENT AT DRIVEWAYS

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

LEGEND

X,XXX =TWO-WAY ADT

AM/PM=PEAK HOUR VOLUMES

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OPENING YEAR 2022 WITHOUT PROJECT MULTI-MODAL TRANSPORTATION CONDITIONS

Cumulative Projects

To determine the Opening Year 2022 conditions in the project study area, forecast project traffic associated with nearby approved or pending projects was added to existing traffic volumes. Information on the cumulative project was obtained from the "Open DSD" online interactive map search tool provided by the Development Services Department (DSD) on the City of San Diego's website (URL: https://opendsd.sandiego.gov/Web/Maps/ApprovalsDiscretionary). Information on the Spectrum V development was provided by the project applicant.

The research of the OpenDSD online map search tool and information provided by the project applicant revealed a total of six scientific research and development projects in or near the study area that are approved or are pending approval and that would generate additional traffic at the study intersections and roadway segments. **Table 6** presents the information and estimated trip generation of the six cumulative projects.

As shown in Table 6, the cumulative projects are expected to generate a combined total of 4,169 daily trips, 667 AM peak hour trips, and 583 PM peak hour trips.

The estimated trip generation for the cumulative projects was calculated based on the City of San Diego's trip rate for scientific research and development use. The trip distribution from the traffic study for the Spectrum III project (*Spectrum 3 Traffic Impact Analysis*, Urban Systems Associates, February 24, 2018) was used to distribute the cumulative traffic for the Spectrum III project. Traffic studies for the other cumulative projects were not available; therefore, the trip distribution for the other cumulative projects was developed manually. The trip distribution for the other cumulative projects was developed based on the trip distribution for the proposed project due to the similar scientific research and development land use. Trip distribution maps for the cumulative projects are provided in **Appendix F**, and the trip distribution map from the *Spectrum 3 Traffic Impact Analysis* is also provided in Appendix F.

Exhibit 11 shows the locations of the cumulative projects. **Exhibit 12** illustrates the peak hour and daily cumulative project trips at the study intersections and roadway segments. **Exhibit 13** shows the peak hour cumulative trips added to existing through traffic at the project driveway intersections.

Opening Year 2022 Without Project Conditions Roadway Network

The Opening Year 2022 roadway network is assumed to be the same as existing conditions except for the following improvement:

- All-way stop control was approved at the intersection of the Science Park Road / Torreyana Road by the University Community Planning Group on September 15, 2020 and was approved by City of San Diego City Council on October 8, 2020, and is expected to be installed in late 2021. A letter from Council President Pro Tem Barbara Bry approving the all-way stop at the Science Park Road / Torreyana Road intersection is provided in **Appendix G**.

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TABLE 6
CUMULATIVE PROJECTS TRIP GENERATION

	CUMULATIVE PROJECT	PTS #	ADDRESS	LAND USE	SIZE	STATUS	DAILY TRIPS	AM PEAK HOUR			PM PEAK HOUR		
								TOTAL	IN	OUT	TOTAL	IN	OUT
1	Touchstone EOT	560826	11099 North Torrey Pines Road	Research & Development	58.060 TSF	Approved	464	74	67	7	65	6	59
2	Healthpeak Campus CDP/SDP/PDP	658398	3020-3030 Callan Road	Research & Development	148.200 TSF	Under Review	1,186	190	171	19	166	17	149
3	Spectrum III and IV Amendment PDP (Spectrum IV is completed)	566056	3115 Merryfield Row	Research & Development	118.931 TSF	Under Construction (Spectrum III)	951	152	137	15	133	13	120
4	Spectrum V	N/A	3545 Cray Court	Research & Development	66.425 TSF	Under Construction	531	85	77	8	74	7	67
5	SBPMDI Building One SCR	548681	10901 North Torrey Pines Road	Research & Development	19.455 TSF	Approved	156	25	22	3	22	2	20
6	The Boardwalk (Torrey Pines Science Park SCR)	263900, 263915	10265, 10285 Science Center Drive	Research & Development	110.000 TSF	Under Construction	880	141	127	14	123	12	111
TOTAL CUMULATIVE PROJECT TRIPS							**4,169**	**667**	**600**	**66**	**583**	**57**	**526**

Source: City of San Diego Development Services Department "OpenDSD" interactive map search tool. (URL: https://opendsd.sandiego.gov/Web/Maps/ApprovalsDiscretionary)

N/A = Not Available

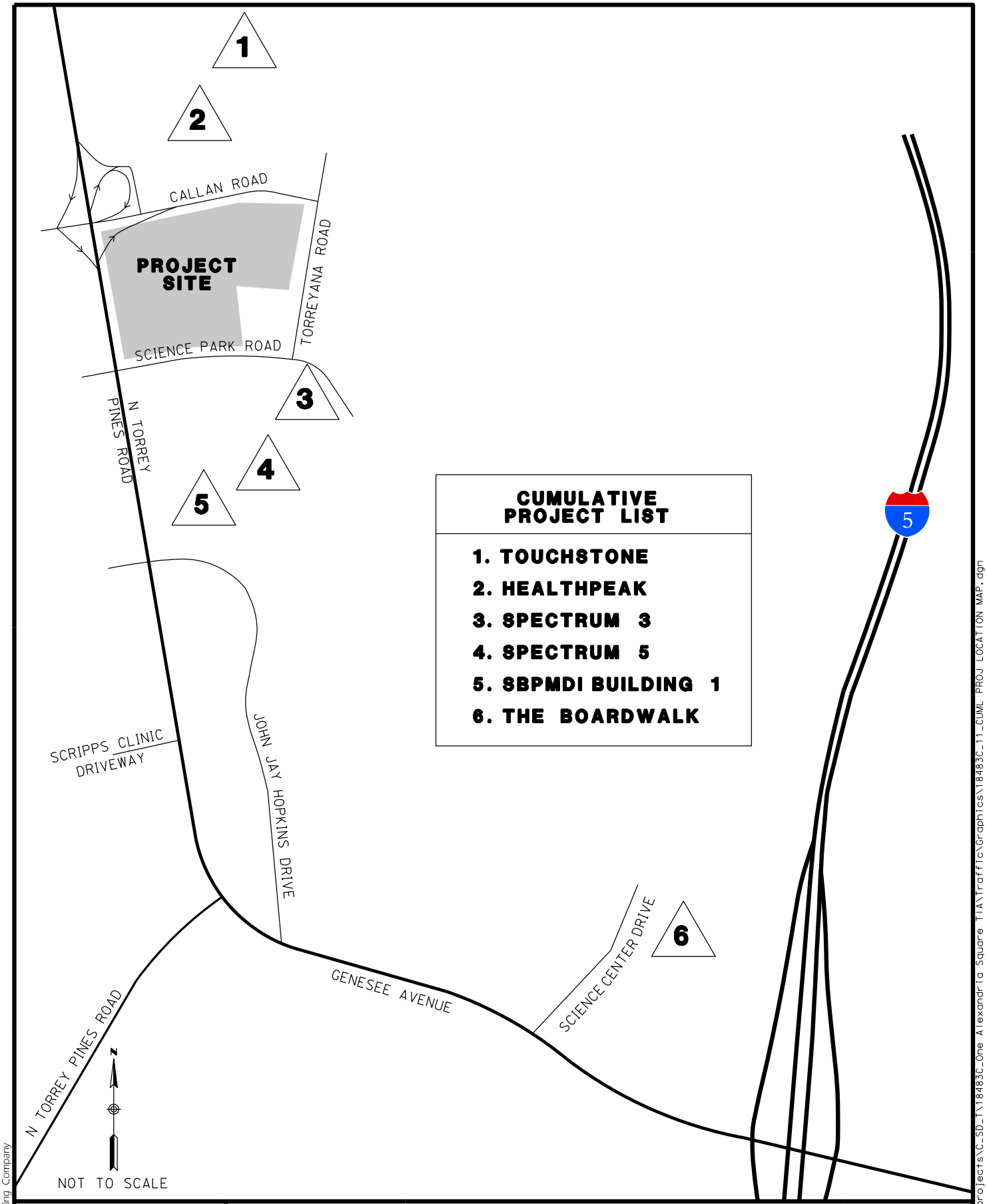

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EXHIBIT 11

CUMULATIVE PROJECTS LOCATION MAP

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

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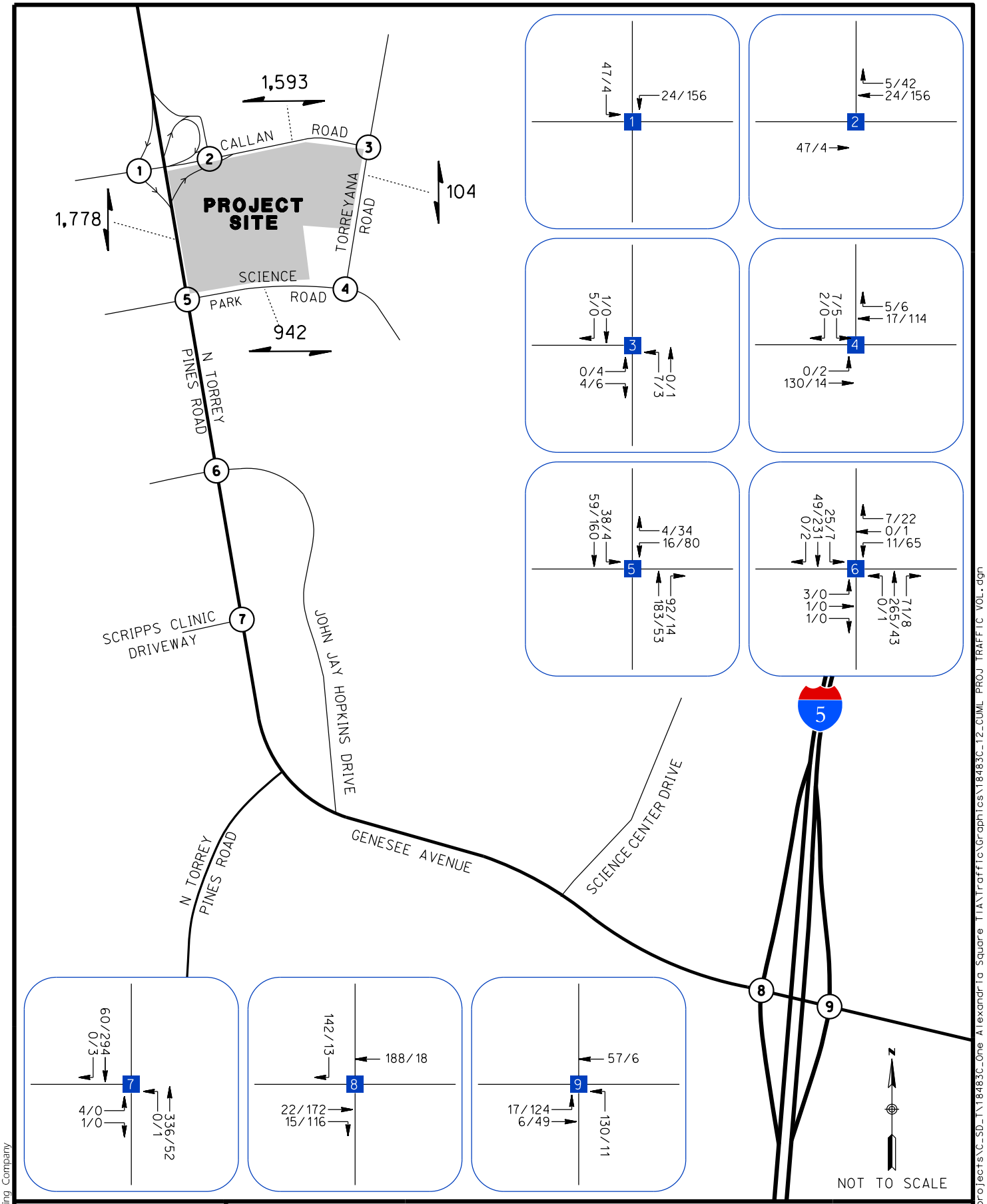

EXHIBIT 12

CUMULATIVE PROJECTS TRAFFIC VOLUMES

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

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LEGEND

AM/PM=PEAK HOUR VOLUMES

X,XXX =TWO-WAY ADT

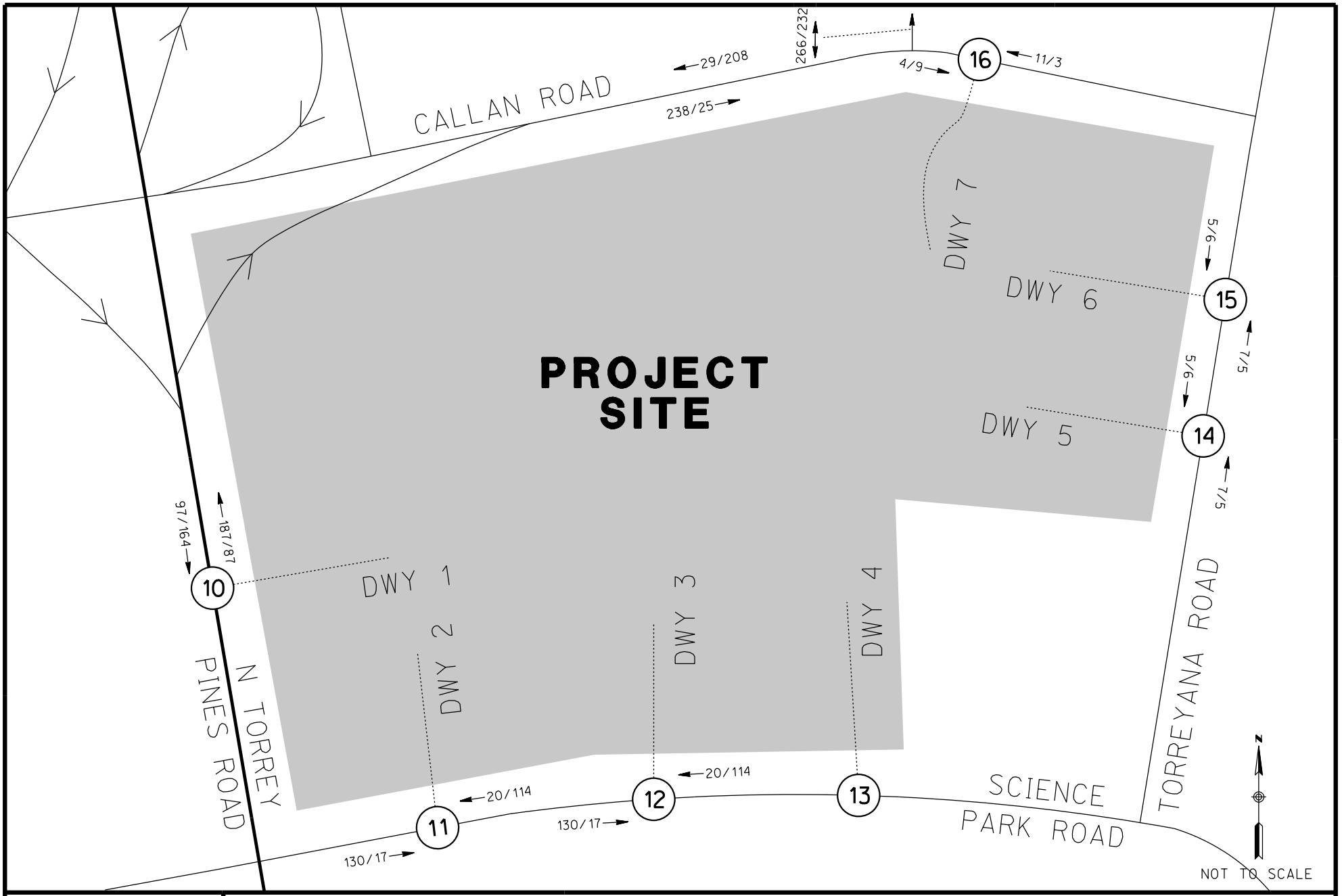

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EXHIBIT 13

CUMULATIVE PROJECTS TRAFFIC VOLUMES THROUGH PROJECT DRIVEWAY INTERSECTIONS

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

LEGEND AM/PM=PEAK HOUR VOLUMES

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Opening Year 2022 Without Project Conditions Pedestrian Network

A pedestrian bridge and path is planned to be constructed that will extend between Spectrum Building V (3545 Cray Court Drive) and Science Park Road near the intersection with Torreyana Road and Merryfield Row. A crosswalk will be striped across Science Park Road on the west leg of the intersection with Torreyana Road in conjunction with installation of all-way stop control at the intersection, which will be completed in late 2021.

Opening Year 2022 Without Project Conditions Bicycle Network

There are no planned bicycle improvements within the project study area, and the Opening Year 2022 bicycle network is assumed to be the same as existing conditions.

Opening Year 2022 Without Project Conditions Transit Network

There are no planned transit improvements within the project study area, and the Opening Year 2022 transit network is anticipated to be the same as existing conditions. However, the Mid-Coast Trolley Project just beyond the study area along I-5 is anticipated to be operational in late 2021. The nearest Mid-Coast Trolley Station would be located approximately 2 ¼ miles from the project site at the north end of UCSD near Voigt Drive.

Opening Year 2022 Without Project Conditions Traffic Volumes

To determine the Opening Year 2022 operating conditions in the study area, the trips generated by the cumulative projects were added to the existing traffic volumes at the study intersections and roadway segments. **Exhibit 14** illustrates the Opening Year 2022 traffic volumes at the study area intersections and roadway segments without the proposed project.

Opening Year 2022 Without Project Conditions Intersection Operations

Table 7 displays the operational analysis results for the study intersections under Opening Year 2022 conditions without the proposed project. Appendix D contains the intersection analysis worksheets.

As shown in Table 7, the Genesee Avenue / I-5 Southbound Ramps intersection is forecast to operate at LOS E during the AM peak hour under Opening Year 2022 conditions without the project. The Genesee Avenue / I-5 Northbound Ramps intersection is forecast to continue operating at LOS F under Opening Year 2022 conditions without the project.

Opening Year 2022 Without Project Conditions Roadway Segment Analysis

Table 8 summarizes the roadway segment capacity analysis results under Opening Year 2022 conditions without the proposed project. As shown in the table, the study segment of Science Park Road between North Torrey Pines Road and Torreyana Road is forecast to operate at LOS E under Opening Year 2022 conditions without the proposed project.

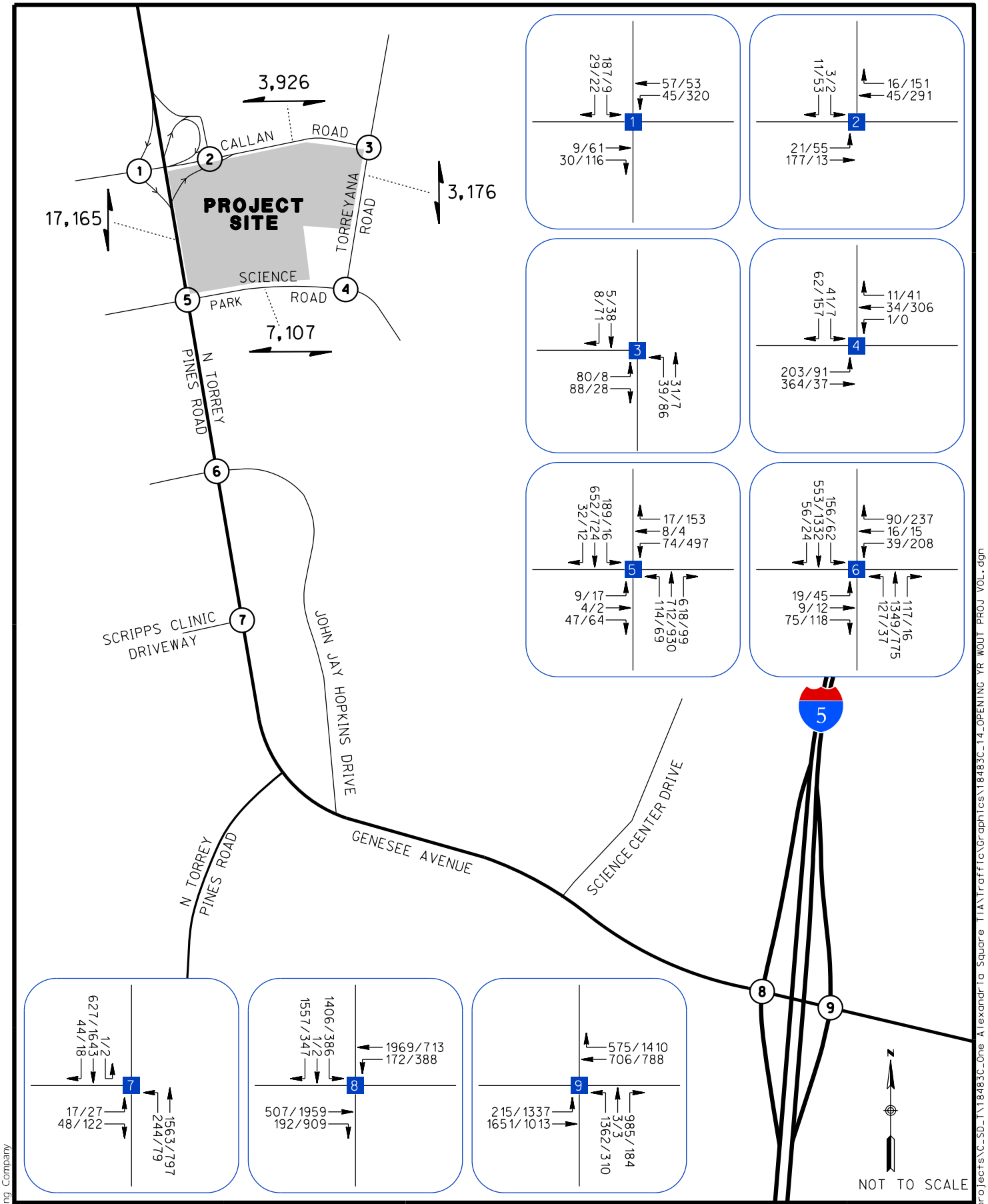

EXHIBIT 14

OPENING YEAR WITHOUT PROJECT TRAFFIC VOLUMES

LEGEND

X,XXX =TWO-WAY ADT

AM/PM=PEAK HOUR VOLUMES

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ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

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TABLE 7
OPENING YEAR 2022 WITHOUT PROJECT INTERSECTION OPERATIONS

	INTERSECTION	OPENING YEAR 2022 WITHOUT PROJECT						
		CONTROL TYPE	AM PEAK HOUR			PM PEAK HOUR		
				DELAY [1]	LOS [2]		DELAY [1]	LOS [2]
1	N Torrey Pines Road SB Connector / Callan Road	(TWSC)[3]	SBL	11.5	B	SBL	23.1	C
2	N Torrey Pines Road NB Connector / Callan Road	(TWSC)[3]	SBL	9.0	A	SBL	11.3	B
3	Callan Road / Torreyana Road	(AWSC)	Overall	8.0	A	Overall	7.6	A
4	Science Park Road / Torreyana Road	(AWSC)[4]	Overall	15.9	C	Overall	11.0	B
5	N Torrey Pines Road / Science Park Road	(S)	Overall	23.9	C	Overall	23.1	C
6	N Torrey Pines Road / John Jay Hopkins Drive	(S)	Overall	46.2	D	Overall	42.2	D
7	N Torrey Pines Road / Scripps Clinic South Driveway[5]	(S)	Overall	9.7	A	Overall	10.7	B
8	Genesee Avenue / I-5 Southbound Ramps	(S)	Overall	**67.7**	**E**	Overall	19.1	B
9	Genesee Avenue / I-5 Northbound Ramps	(S)	Overall	33.5	C	Overall	**103.1**	**F**

FOOTNOTES:

1. Delay is measured in seconds per vehicle.

2. Level of Service

3. Delay and LOS being reported for the TWSC control type are taken from the movement with the worst delay.

4. An all-way stop at the Science Park Road / Torreyana Road intersection was approved by the University Community Planning Group on September 15, 2020, approved by San Diego City Council on October 8, 2020, and is expected to be installed in late 2021.

5. HCM-6 in Synchro does not analyze U-turn movements. The southbound U-turn movement at the intersection was modeled in Synchro as a left-turn movement to provide delay for that movement. This was achieved by creating a "dummy" east leg of the intersection to receive the southbound left-turn movement.

Results calculated utilizing the methodologies described in Chapters 18, 19, and 20 of 6th edition of the Highway Capacity Manual (HCM 6).

(S)=Signalized, (TWSC)=Two-Way Stop Controlled, (AWSC)=All-Way Stop Controlled, (R)=Roundabout.

NB=Northbound, WB=Westbound, etc.

L=Left-turn movement, T=Thru movement, R=Right-turn movement, etc.

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TABLE 8
OPENING YEAR 2022 WITHOUT PROJECT ROADWAY SEGMENT ANALYSIS

	ROADWAY SEGMENT	EXISTING CLASSIFICATION	CAPACITY [a]	OPENING YEAR 2022 WITHOUT PROJECT		
				VOLUME	V/C [b]	LOS [c]
1	Callan Road, North Torrey Pines Road to Torreyana Road	2-Lane Collector	8,000	3,926	0.491	C
2	Science Park Road, North Torrey Pines Road to Torreyana Road	2-Lane Collector	8,000	**7,107**	**0.888**	**E**
3	Torreyana Road, Callan Road to Science Park Road	2-Lane Collector	8,000	3,176	0.397	B
4	North Torrey Pines Road, Callan Road to Science Park Road	6-Lane Primary Arterial	60,000	17,165	0.286	A

FOOTNOTES:

a. Roadway volume capacity and classification based on the City of San Diego *Transportation Study Manual* (September 29, 2020).

b. Volume to Capacity ratio.

c. Level of Service.

OPENING YEAR 2022 WITH PROJECT MULTI-MODAL TRANSPORTATION CONDITIONS

Opening Year 2022 With Project Driveway Configurations

The project driveways will provide full access (i.e. left and right turn access) to the site with the exception of the proposed project driveway on North Torrey Pines Road. Driveway 1 on North Torrey Pines Road will be restricted to right-in/right-out only access. **Exhibit 15** illustrates the intersection lane geometrics at the project driveways.

Opening Year 2022 With Project Conditions Roadway Network

Other than the proposed site access changes on the project site, there are no planned roadway improvements associated with the proposed project.

Opening Year 2022 With Project Conditions Pedestrian Network

The project will provide pedestrian connectivity between the existing and proposed buildings on-site. The project proposes to construct non-contiguous sidewalks along portions of the project frontage on the east side of North Torrey Pines Road and along portions of the project frontage on the north side of Science Park Road where existing street trees will be removed and replaced per Tree Evaluation. Non-contiguous sidewalk is not proposed along the project frontage on the south side of Callan Road, as this would require removal of extensive existing landscaping, which is inconsistent with the subarea requirement of retaining existing mature trees and having development occur around and in between them.

Opening Year 2022 With Project Conditions Bicycle Network

The project will provide a separated bicycle facility along one side of the internal private drive that extends from Driveway 1 at North Torrey Pines Road to Driveway 3 at Science Park Road. The project will also provide long-term bicycle parking and racks on-site.

Opening Year 2022 With Project Conditions Transit Network

The construction of the non-contiguous sidewalks along the project frontage on North Torrey Pines Road would also set back the existing transit stops farther from the curb, which would improve pedestrian conditions at the transit stops adjacent to the project site.

Opening Year 2022 With Project Conditions Traffic Volumes

Trips generated by the proposed project were added to the Opening Year 2022 Without Project traffic volumes to develop the Opening Year 2022 With Project traffic volumes. **Exhibit 16** illustrates the Opening Year 2022 With Project traffic volumes at the study area intersections and roadway segments. **Exhibit 17** shows the Opening Year 2022 With Project traffic volumes at the project driveway intersections.

Opening Year 2022 With Project Conditions Intersection Operations

Table 9 displays the operational analysis results for the study intersections under Opening Year 2022 conditions with the proposed project. Appendix D contains the intersection analysis worksheets. As shown in the table, the Genesee Avenue / I-5 Southbound Ramps intersection is forecast to continue operating at LOS E during the AM peak hour under Opening Year 2022 conditions with the project. The Genesee Avenue / I-5 Northbound Ramps intersection is forecast to continue operating at LOS F under Opening Year 2022 conditions with the project.

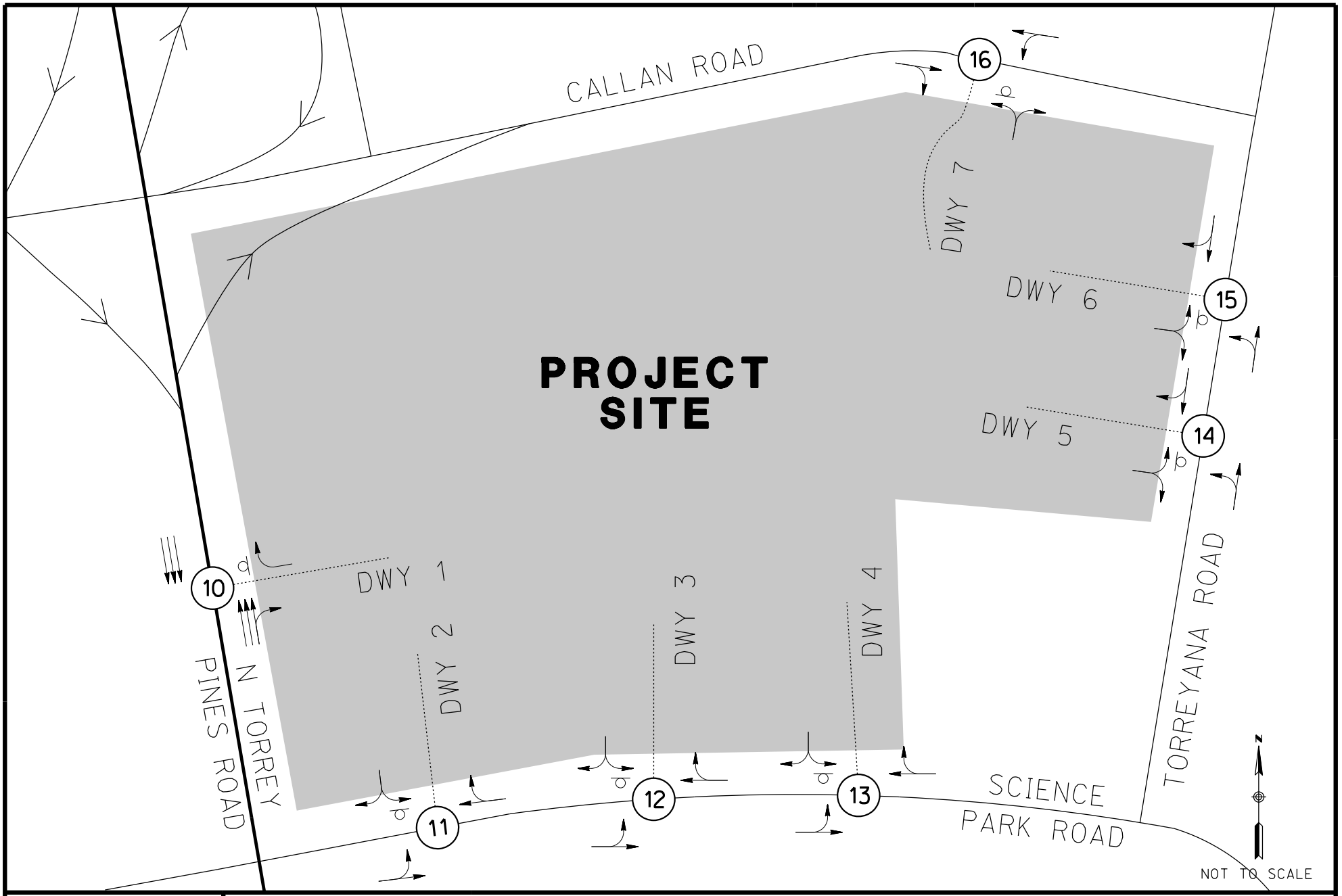

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EXHIBIT 15

PROJECT DRIVEWAY INTERSECTION LANE GEOMETRICS

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

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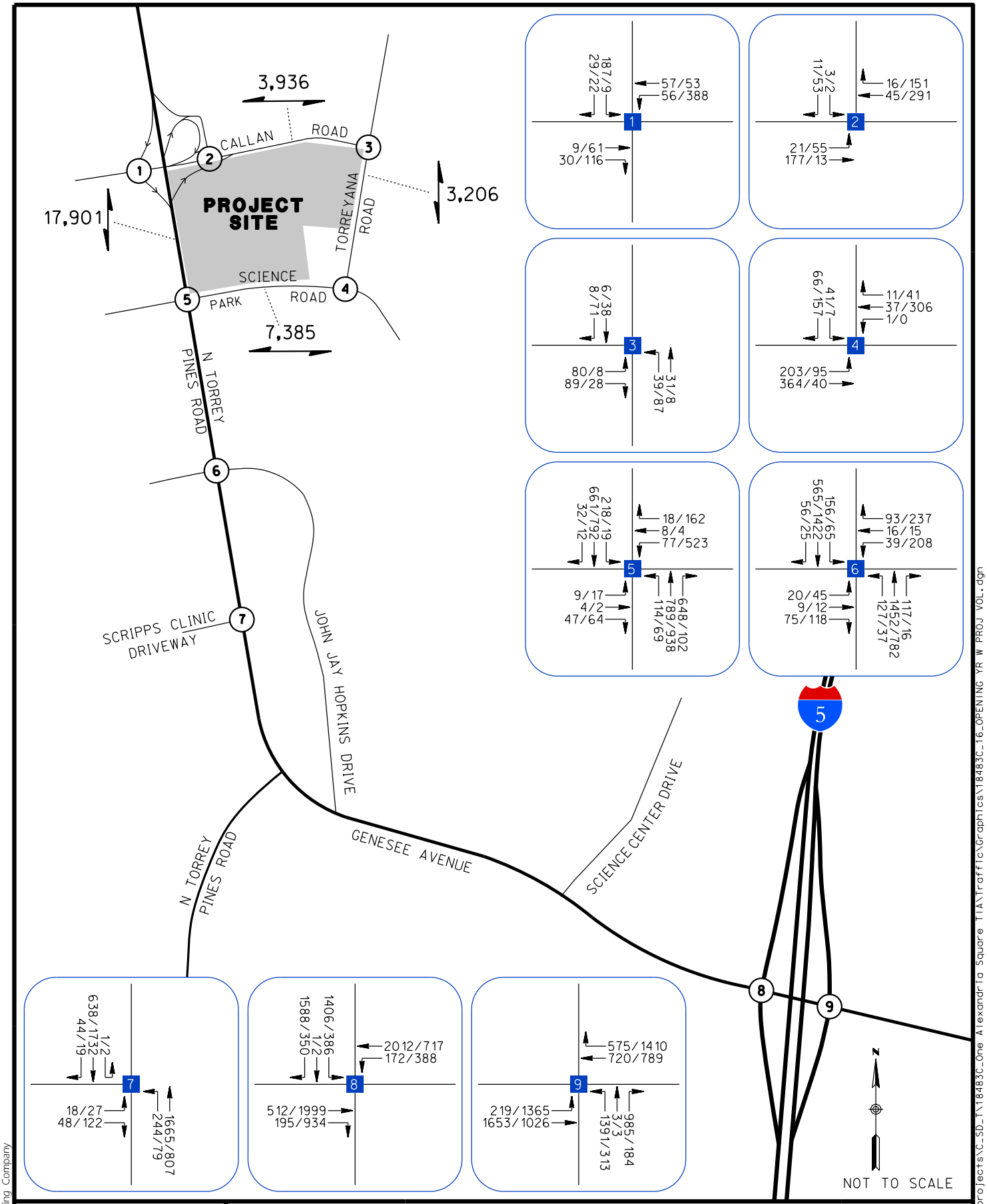

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EXHIBIT 16

OPENING YEAR WITH PROJECT TRAFFIC VOLUMES AT OFFSITE INTERSECTIONS AND ROADWAY SEGMENTS

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

LEGEND

X,XXX =TWO-WAY ADT

AM/PM=PEAK HOUR VOLUMES

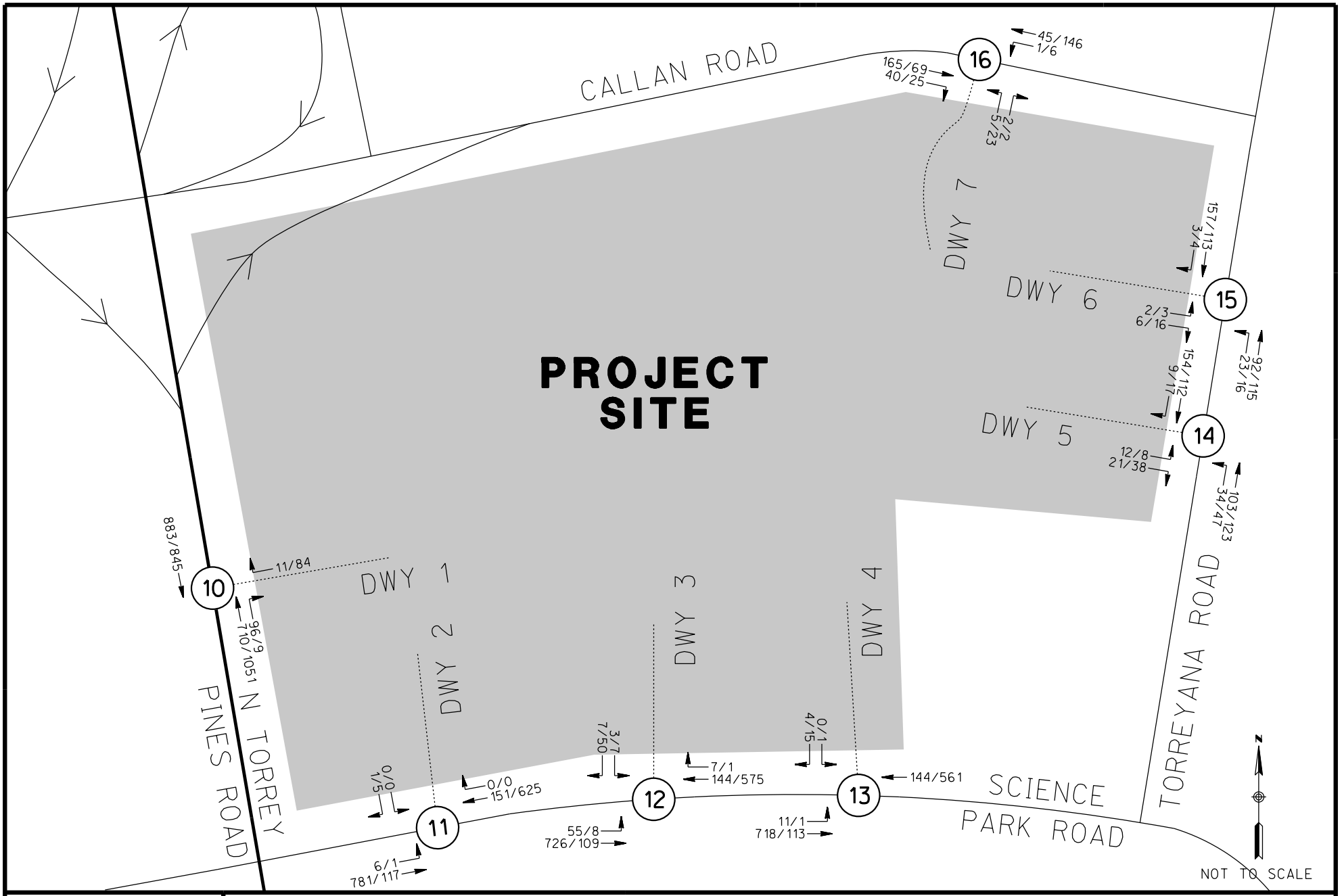

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EXHIBIT 17

OPENING YEAR WITH PROJECT TRAFFIC VOLUMES AT DRIVEWAYS

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

LEGEND AM/PM=PEAK HOUR VOLUMES

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TABLE 9
OPENING YEAR 2022 WITH PROJECT INTERSECTION OPERATIONS

	INTERSECTION	OPENING YEAR 2022 WITH PROJECT						
		CONTROL	AM PEAK HOUR			PM PEAK HOUR		
		TYPE		DELAY [1]	LOS [2]		DELAY [1]	LOS [2]
1	N Torrey Pines Road SB Connector / Callan Road	(TWSC)[3]	SBL	11.8	B	SBL	30.1	D
2	N Torrey Pines Road NB Connector / Callan Road	(TWSC)[3]	SBL	9.0	A	SBL	11.3	B
3	Callan Road / Torreyana Road	(AWSC)	Overall	8.0	A	Overall	7.6	A
4	Science Park Road / Torreyana Road	(AWSC)[4]	Overall	15.9	C	Overall	11.0	B
5	N Torrey Pines Road / Science Park Road	(S)	Overall	27.6	C	Overall	23.6	C
6	N Torrey Pines Road / John Jay Hopkins Drive	(S)	Overall	47.9	D	Overall	42.9	D
7	N Torrey Pines Road / Scripps Clinic South Driveway[5]	(S)	Overall	9.6	A	Overall	10.8	B
8	Genesee Avenue / I-5 Southbound Ramps	(S)	Overall	**73.2**	**E**	Overall	19.3	B
9	Genesee Avenue / I-5 Northbound Ramps	(S)	Overall	34.6	C	Overall	**106.4**	**F**
10	N Torrey Pines Road / Driveway 1	(TWSC)[3]	WBR	12.6	B	WBR	16.9	C
11	Science Park Road / Driveway 2	(TWSC)[3]	SBL	8.7	A	SBL	10.5	B
10	Science Park Road / Driveway 3	(TWSC)[3]	SBL	12.8	B	SBL	13.9	B
11	Science Park Road / Driveway 4	(TWSC)[3]	SBL	9.1	A	SBL	12.7	B
12	Torreyana Road / Driveway 5	(TWSC)[3]	EBL	10.0	B	EBL	9.5	A
13	Torreyana Road / Driveway 6	(TWSC)[3]	EBL	9.5	A	EBL	9.2	A
14	Callan Road / Driveway 7	(TWSC)[3]	NBL	9.8	A	NBL	10.1	B

FOOTNOTES:

1. Delay is measured in seconds per vehicle.

2. Level of Service

3. Delay and LOS being reported for the TWSC control type are taken from the movement with the worst delay.

4. An all-way stop at the Science Park Road / Torreyana Road intersection was approved by the University Community Planning Group on September 15, 2020 and approved by San Diego City Council on October 8, 2020, and is expected to be installed in late 2021.

5. HCM-6 in Synchro does not analyze U-turn movements. The southbound U-turn movement at the intersection was modeled in Synchro as a left-turn movement to provide delay for that movement. This was achieved by creating a "dummy" east leg of the intersection to receive the southbound left-turn movement.

Results calculated utilizing the methodologies described in Chapters 18, 19, and 20 of 6th edition of the Highway Capacity Manual (HCM 6).

(S)=Signalized, (TWSC)=Two-Way Stop Controlled, (AWSC)=All-Way Stop Controlled, (R)=Roundabout.

NB=Northbound, WB=Westbound, etc.

L=Left-turn movement, T=Thru movement, R=Right-turn movement, etc.

Opening Year 2022 With Project Conditions Roadway Segment Analysis

Table 10 summarizes the roadway segment capacity analysis results under Opening Year 2022 conditions with the proposed project. As shown in the table, the study segment of Science Park Road between North Torrey Pines Road and Torreyana Road is forecast to operate at LOS E under Opening Year 2022 conditions with the proposed project.

INTERSECTION QUEUING ANALYSIS

A queuing analysis was performed during the peak hours under Opening Year 2022 conditions without and with the project for the existing left-turn and right-turn lanes of the signalized study intersections to which project trips are added. This queuing analysis was conducted to determine if the additional traffic generated by the project would result in queue lengths that exceed the existing storage lengths of the left-turn or right-turn lanes of the signalized study intersections. The queuing analysis results are based on the 95th percentile queue lengths in feet for each turning movement or approach.

The SimTraffic application within the Synchro software program was used to perform the queuing analysis for the study intersections. However, the queuing analysis was run in Synchro for the Genesee Avenue / I-5 Southbound Ramps and Genesee Avenue / I-5 Northbound Ramps intersections during the AM peak hour due to SimTraffic simulation errors on the off-ramp approaches. The high off-ramp volumes for both left-turn and right-turn movements during the AM peak hour results in SimTraffic simulations in which right-turning vehicles are trapped in the far left-turn lane and block access to the far left-turn lane, and vice versa with left-turning vehicles being trapped in the far right-turn lane and blocking access to the far right-turn lane, with the result being that only one left-turn lane and one right-turn lane are utilized on the off-ramp approaches at both intersections. Several dozen iterations were attempted to correct the error but none were successful; therefore, Synchro was used instead to perform the AM peak hour queuing analysis for the two intersections at the I-5 / Genesee Avenue interchange.

The results of the queuing analysis under Opening Year 2022 conditions without and with the proposed project are displayed in **Table 11**. The SimTraffic and Synchro queuing worksheets are provided in **Appendix H.**

Table 11 shows that the 95th percentile queue length is expected to exceed the storage length for the westbound dual right-turn lanes at the Genesee Avenue / I-5 Northbound Ramps intersection during the PM peak hour under Opening Year 2022 conditions both without and with the proposed project. The queue length exceeding the storage for the westbound right-turn lanes during the PM peak hour is the result of both the cumulative projects and proposed project demand to enter the I-5 Northbound On-Ramp along with the eastbound left-turn movement. The additional trips from the proposed project to the Genesee Avenue / I-5 Northbound Ramps intersection during the PM peak hour (via the eastbound left-turn movement) is expected to increase the queue length of the westbound right-turn lanes by approximately one car length (increase of 22 feet).

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TABLE 10
OPENING YEAR 2022 WITH PROJECT ROADWAY SEGMENT ANALYSIS

	ROADWAY SEGMENT	EXISTING CLASSIFICATION	CAPACITY [a]	OPENING YEAR 2022 WITH PROJECT		
				VOLUME	V/C [b]	LOS [c]
1	Callan Road, North Torrey Pines Road to Torreyana Road	2-Lane Collector	8,000	3,936	0.492	C
2	Science Park Road, North Torrey Pines Road to Torreyana Road	2-Lane Collector	8,000	**7,385**	**0.923**	**E**
3	Torreyana Road, Callan Road to Science Park Road	2-Lane Collector	8,000	3,206	0.401	B
4	North Torrey Pines Road, Callan Road to Science Park Road	6-Lane Primary Arterial	60,000	17,901	0.298	A

FOOTNOTES:

a. Roadway volume capacity and classification based on the City of San Diego *Transportation Study Manual* (September 29, 2020).

b. Volume to Capacity ratio.

c. Level of Service.

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TABLE 11
OPENING YEAR 2022 QUEUING ANALYSIS

	Intersection	Lane / Movement	No. of Lanes/ Storage Length (feet)	Opening Year 2022 Without Project				Opening Year 2022 With Project			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Volume	*Queue Length (feet)*	Volume	*Queue Length (feet)*	Volume	*Queue Length (feet)*	Volume	*Queue Length (feet)*
5	N Torrey Pines Road / Science Park Road	WB left	1 / 300'	37	*59'*	248	*182'*	39	*72'*	261	*130'*
		WB shared left/ through	1 / 300'	45	*56'*	253	*184'*	46	*52'*	266	*207'*
		WB right	1 / 300'	17	*17'*	153	*50'*	18	*25'*	162	*55'*
		NB right	1 / 225'	618	*62'*	99	*41'*	648	*174'*	102	*36'*
		SB left	1 / 200'	189	*122'*	16	*15'*	218	*155'*	19	*63'*
6	N Torrey Pines Road / John Jay Hopkins Drive	EB left	1 / 75'	19	*52'*	45	*61'*	20	*28'*	45	*71'*
		WB right	1 / 160'	90	*44'*	237	*121'*	93	*47'*	237	*107'*
		SB left	1 / 215'	156	*133'*	62	*54'*	156	*210'*	65	*70'*
7	N Torrey Pines Road / Scripps Clinic Driveway	EB left	1 / 50'	17	*42'*	27	*41'*	18	*37'*	27	*26'*
8	Genesee Avenue /I-5 Southbound Ramps	SB left	2 / 810’	1,406	*722'*	386	*172'*	1,406	*722'*	386	*179'*
		SB right	2 / 810'	1,557	*847'*	347	*82'*	1,588	*871'*	350	*72'*
		SB off-ramp[1]	2 / 1,660’	2,963	*847'*	733	*172'*	2,994	*871'*	736	*179'*
		EB right	2 / 440'	192	*27'*	909	*88'*	195	*27'*	934	*113'*
		WB left	2 / 640'	172	*108'*	388	*126'*	172	*126'*	388	*138'*
9	Genesee Avenue / I-5 Northbound Ramps	NB left	2 / 840'	1,362	*679'*	310	*245'*	1,391	*701'*	313	*265'*
		NB right	2 / 750’	985	*360'*	184	*48'*	985	*360'*	184	*65'*
		NB off-ramp[1]	1 / 1,400’	2,347	*679'*	494	*245'*	2,376	*701'*	497	*265'*
		EB left	2 / 685'	215	*133'*	1,337	*592'*	219	*136'*	1,365	*601'*
		WB right	2 / 400'	575	*42'*	1,410	***416'***	575	*42'*	1,410	***438'***

Note: 95th percentile queue lengths shown from SimTraffic queuing analysis reports.
The total lengths, volumes and queue lengths of the off-ramps are shaded in gray.
Queue length shown in **bold** indicate queue exceeding the existing storage length for the movement.
[1]Total length of off-ramp from intersection stop bar to gore point where ramp diverges from freeway mainline lanes.

INTERSECTION TURN LANE EVALUATION

The need for left-turn or right-turn lanes at the signalized study intersections was also evaluated per the criteria identified in the City of San Diego's *Transportation Study Manual* (September 29, 2020). The turn lane evaluation was performed for the following signalized study intersections:

5. N Torrey Pines Road / Science Park Road
6. N Torrey Pines Road / John Jay Hopkins Drive
7. N Torrey Pines Road / Scripps Clinic South Driveway

The City of San Diego's *Transportation Study Manual* (September 29, 2020) recommends that a single left-turn lane, a second left-turn lane, a single right-turn lane or a second right-turn lane should be considered if a project adds traffic that causes the peak hour traffic volume to exceed the following:

- Single Left-Turn Lane: Over 100
- Second Left-Turn Lane: Over 300
- Single Right-Turn Lane: Over 500
- Second Right-Turn Lane: Over 800

Table 12 summarizes the results of the turn lane evaluation for the signalized study intersections listed above. As shown in Table 12, the addition of project traffic would not result in the need for a left-turn lane, a second left-turn lane or a right-turn lane on the approaches where these lanes are currently not provided.

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TABLE 12
INTERSECTION TURN LANE EVALUATION

Intersection		Lane / Movement	No. of Lanes	Opening Year 2022 Without Project		Opening Year 2022 With Project		Left-Turn Volume Thresholds		Right-Turn Volume Thresholds	
				AM Peak Hour Volume	PM Peak Hour Volume	AM Peak Hour Volume	PM Peak Hour Volume	Single Left-Turn Lane	Second Left-Turn Lane	Single Right-Turn Lane	Second Right-Turn Lane
5	N Torrey Pines Road / Science Park Road	EB left	N/A	9	17	9	17	100	300	500	800
		EB right	1	47	64	47	64				
		WB left	2	74	497	77	523				
		WB right	1	17	153	18	162				
		NB left	1	114	69	114	69				
		NB right	1	618	99	648	102				
		SB left	1	189	16	218	19				
		SB right	1	32	12	32	12				
6	N Torrey Pines Road / John Jay Hopkins Drive	EB left	1	19	45	20	45	100	300	500	800
		EB right	N/A	75	118	75	118				
		WB left	2	39	208	39	208				
		WB right	1	90	237	93	237				
		NB left	1	127	37	127	37				
		NB right	1	117	16	117	16				
		SB left	1	156	62	156	65				
		SB right	1	56	24	56	25				
7	N Torrey Pines Road / Scripps Clinic Driveway	EB left	1	17	27	18	27	100	300	500	800
		EB right	1	48	122	48	122				
		NB left	1	244	79	244	79				
		SB U-turn	1	1	2	1	2				
		SB right	N/A	44	18	44	19				

N/A = indicates shared left-turn/through lane or shared through/right-turn lane.

INTERSECTION SYSTEMIC SAFETY REVIEW

The City of San Diego's *Transportation Study Manual* (September 29, 2020) requires that a Systemic Safety Review be conducted to determine if any of the study intersections meet the criteria to be identified as a Systemic Hotspot for pedestrians, bicycles or vehicles. The *Systemic Safety The Data-Driven Path to Vision Zero* document does not contain Systemic Hotspot maps, but it does provide methodologies to identify pedestrian, bicycle and vehicle hotspots based on specific criteria at intersections.

City of San Diego Development Services Department (DSD) staff verified that a pedestrian Hot Spot map was available and that the study intersections did not meet any of the criteria to be identified as pedestrian hotspots. Therefore, the Systemic Safety Review was only conducted to identify bicycle and vehicle hotspots at the study intersections.

Table 13 summarizes the results of the Systemic Safety Review for Bicycle Hotspots. **Table 14** summarizes the results of the Systemic Safety Review for Vehicle Hotspot Scenarios #1 and #2, and **Table 15** summarizes the results of the Systemic Safety Review for Vehicle Hotspot Scenarios #3 and #4.

As shown in Table 13, none of the study intersections meet the criteria for Bicycle Hotspot Scenario #1, but the North Torrey Pines Road Northbound Ramp Connector / Callan Road intersection did meet the criteria for Bicycle Hotspot Scenario #2.

Table 14 shows that none of the study intersections meet the criteria for Vehicle Hotspot Scenarios #1 and #2, and Table 15 shows that none of the study intersections meet the criteria for Vehicle Hotspot Scenarios #3 and #4.

The *Systemic Safety The Data-Driven Path to Vision Zero* document recommends educational countermeasures to discourage bicyclists from "rolling" through stop signs at side-street stop-controlled intersections. In addition, the *Systemic Safety The Data-Driven Path to Vision Zero* document recommends target enforcement of bicyclists running stop signs at side-street stop-controlled intersections where higher volumes of bicyclists are present. These countermeasures are not feasible for a standalone project and therefore, neither countermeasure will be implemented by the project.

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TABLE 13
SYSTEMIC SAFETY REVIEW FOR BICYCLES

	Study Intersection	Bicycle Hotspot Scenario #1			Bicycle Hotspot Scenario #2	
		Signalized Intersection	4-Lane Road Intersects 2-Lane Road	4-Lane Road Intersects 4-Lane Road	Minor Street Stop Controlled Intersection	2-Lane Road Intersects 2-Lane Road
1	N Torrey Pines Road SB Connector / Callan Road	No	No	No	**Yes**	No[5]
2	N Torrey Pines Road NB Connector / Callan Road	No	No	No	**Yes**	**Yes**
3	Callan Road / Torreyana Road	No	No	No	No[3]	**Yes**
4	Science Park Road / Torreyana Road	No	No	No	No[4]	**Yes**
5	N Torrey Pines Road / Science Park Road	**Yes**	No[1]	No[2]	No	No
6	N Torrey Pines Road / John Jay Hopkins Drive	**Yes**	No[1]	No[2]	No	No
7	N Torrey Pines Road / Scripps Clinic South Driveway	**Yes**	No[1]	No[2]	No	No

FOOTNOTES:
Criteria shaded in grey indicates intersection meets criteria in hotspot scenario.

[1]The major roads at the signalized study intersections (North Torrey Pines Road and Genesee Avenue) have 6 travel lanes rather than 4 lanes; therefore do not meet this specific criteria.

[2]None of the minor roads at the signalized study intersections have 4 travel lanes; therefore do not meet this specific criteria.

[3]The intersection of Callan Road and Torreyana Road is currently all-way stop controlled.

[4]All-way stop control was recently approved for the Science Park Road/Torreyana Road intersection, and is expected to be installed in late 2021.

[5]This intersection has a one-way ramp connector from North Torrey Pines Road that intersects with Callan Road as a minor street stop controlled intersection, then proceeds south to connect back with North Torrey Pines Road.

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TABLE 14
SYSTEMIC SAFETY REVIEW FOR VEHICLES: HOTSPOT SCENARIOS #1 AND #2

	Study Intersection	Vehicle Hotspot Scenario #1				Vehicle Hotspot Scenario #2			
		Signalized Intersection	4-Lane Road Intersects 2-Lane Road	Major Road ADT: >15,000	Minor Road ADT: ≤7,000	Signalized Intersection	6-Lane Road Intersects 4-Lane Road	Major Road ADT: >15,000	Minor Road ADT: >7,000
1	N Torrey Pines Road SB Connector / Callan Road	No	No	No	**Yes**	No	No	No	No
2	N Torrey Pines Road NB Connector / Callan Road	No	No	No	**Yes**	No	No	No	No
3	Callan Road / Torreyana Road	No	No	No	**Yes**	No	No	No	No
4	Science Park Road / Torreyana Road	No	No	No	**Yes**	No	No	No	No
5	N Torrey Pines Road / Science Park Road	**Yes**	No[1]	**Yes**	No[2]	**Yes**	No[3]	**Yes**	**Yes**
6	N Torrey Pines Road / John Jay Hopkins Drive	**Yes**	No[1]	**Yes**	**Yes**	**Yes**	No[3]	**Yes**	No
7	N Torrey Pines Road / Scripps Clinic South Driveway	**Yes**	No[1]	**Yes**	**Yes**	**Yes**	No[3]	**Yes**	No

FOOTNOTES:

[1]The major roads at the signalized study intersections (North Torrey Pines Road and Genesee Avenue) have 6 travel lanes rather than 4 lanes; therefore do not meet this specific criteria.

[2]The ADT on Science Park Road is forecast to exceed 7,000 ADT under Opening Year 2022 conditions with the proposed project.

[3]None of the minor roads at the signalized study intersections have 4 travel lanes; therefore do not meet this specific criteria.

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TABLE 15
SYSTEMIC SAFETY REVIEW FOR VEHICLES: HOTSPOT SCENARIOS #3 AND #4

	Study Intersection	Vehicle Hotspot Scenario #3			Vehicle Hotspot Scenario #4			
		Signalized Intersection	4-Lane Road Intersects 4-Lane Road	Minor Road ADT: >7,000	Signalized Intersection	One-Way 3-Lane Road Intersects One-Way 3-Lane Road	Major Road ADT: ≤15,000	Minor Road ADT: >7,000
1	N Torrey Pines Road SB Connector / Callan Road	No	No	No	No	No	No	No
2	N Torrey Pines Road NB Connector / Callan Road	No	No	No	No	No	No	No
3	Callan Road / Torreyana Road	No	No	No	No	No	No	No
4	Science Park Road / Torreyana Road	No	No	No	No	No	No	No
5	N Torrey Pines Road / Science Park Road	**Yes**	No[1]	**Yes**	**Yes**	No	No	**Yes**
6	N Torrey Pines Road / John Jay Hopkins Drive	**Yes**	No[1]	No	**Yes**	No	No	No
7	N Torrey Pines Road / Scripps Clinic South Driveway	**Yes**	No[1]	No	**Yes**	No	No	No

FOOTNOTES:

[1]The major roads at the signalized study intersections (North Torrey Pines Road and Genesee Avenue) have 6 travel lanes rather than 4 lanes, and none of the minor roads at the signalized study intersections have 4 travel lanes; therefore do not meet this specific criteria.

SITE ACCESS, CIRCULATION AND PARKING

As discussed in the project description, the project site currently provides a total of eight driveways. Two driveways are currently provided on North Torrey Pines Road, three driveways on Science Park Road, two driveways on Torreyana Road, and one driveway on Callan Road. The project will remove the two existing driveways on North Torrey Pines Road and construct a new driveway (Driveway 1) that will serve as one of the project's two primary entrances (the other primary entrance will be Driveway 3 on Science Park Road). The project will also improve the existing driveways that will serve the new traffic to current standards per City of San Diego Standard Drawings.

The proposed redevelopment area of the project site will take access from Driveway 1 on North Torrey Pines Road and the two westerly driveways on Science Park Road (Driveway 2 and Driveway 3). Primary access to the redevelopment area will be taken from the new driveway on North Torrey Pines Road (Driveway 1) and from the middle driveway on Science Park Road (Driveway 3). The westerly driveway on Science Park Road (Driveway 2) would provide access to building B4 vehicle parking and loading area for buildings B3, B4 and B5.

The remaining four existing driveways will continue to provide access to the existing buildings on the project site, and will not provide access to the new redevelopment area of the project site.

A total of seven driveways will be provided for the project site. Full access will be provided at all driveways except for the new driveway located on North Torrey Pines Road. Driveway 1 on North Torrey Pines Road will be restricted to right-in/right-out access only.

The project will provide a separated bicycle facility along one side of the internal private drive that extends from Driveway 1 at North Torrey Pines Road to Driveway 3 at Science Park Road. The project will also provide long-term bicycle parking and short-term bicycle racks on-site.

The minimum driveway width of 24 feet and maximum of 25 feet for non-residential projects within a Parking Impact Overlay Zone per the City of San Diego Municipal Code Table 142-05M is accommodated at the existing and reconfigured project driveways.

The results of the intersection operations analysis showed that no operational deficiencies are expected to occur at the seven project driveways. The queuing analysis results for the project driveway intersections showed that the forecast queue lengths on the stop controlled intersection approaches are not expected to exceed the throat lengths provided for the project driveways.

The project will construct a parking structure that will provide a total of 968 parking stalls. The proposed parking structure would be located adjacent to North Torrey Pines Road near the northbound ramp connector to Callan Road. Access to the proposed parking structure would primarily be taken from Driveway 1 on North Torrey Pines Road.

Two existing surface parking lots will be reconfigured on the project site and two small surface lots will be constructed that will provide a total of 254 surface parking stalls. The two existing buildings that will remain on the project site currently provide a total of 117 parking stalls within subterranean garages. Three out of the eight new buildings that will be constructed on the project site will provide a total of 148 subterranean parking stalls.

A total of 1,487 parking stalls will be provided for the proposed project at an overall rate of approximately 3.03 spaces per thousand-square-feet, which include the existing and new parking facilities as described above. Internal drive aisles will provide connectivity between Driveways 1 and 3 within the redevelopment area and the proposed parking structure, surface parking lots, and subterranean parking garages. Two of the existing driveways (Driveway 4 on Science Park Road and Driveway 6 on Torreyana Road) provide direct access to subterranean garage parking within the existing buildings that will remain on the site.

Continuous pedestrian connections will be provided between both the existing and proposed new buildings and between the buildings and parking areas. Bicycle parking will be provided near the main entrances of all existing and new buildings on the site.

CONCLUSIONS AND RECOMMENDATIONS

This Local Mobility Analysis evaluated the potential operational deficiencies and transportation improvements that may need to be considered in association with the traffic generated by the proposed One Alexandria Square project. Below is a summary of the analysis findings and recommended transportation improvements:

Intersection Operations Analysis Findings

The results of the Existing Conditions intersection operations analysis showed that the Genesee Avenue / I-5 Northbound Ramps intersection currently operates at LOS F during the PM peak hour. Review of the existing signal timing at the intersection revealed that the existing cycle length (90 seconds) is not long enough to adequately serve all movements at the intersection during peak hours.

The Genesee Avenue / I-5 Southbound Ramps intersection is forecast to operate at LOS E during the AM peak hour under Opening Year 2022 conditions both without and with the project. The Genesee Avenue / I-5 Northbound Ramps intersection is forecast to continue operating at LOS F under Opening Year 2022 conditions both without and with the project.

Documentation of preliminary coordination with Caltrans regarding recommended signal timing improvements is provided in **Appendix I**, which contains email correspondence with Caltrans District 11 Signal Operations staff in which Caltrans states they are open to increasing cycle lengths at the Genesee Avenue / I-5 ramp intersections if traffic patterns in the future change in the area. Based on additional coordination with City staff and Caltrans, additional analysis (shown in Tables 16 & 17) was provided to demonstrate that an increase in cycle length to 110 seconds may reduce delays but would increase queue lengths at the southbound and northbound I-5 off-ramp movements. Therefore, improvements are not recommended at the two ramp intersections for the Genesee Avenue / I-5 interchange.

Roadway Segment Analysis Findings

The results of the Existing Conditions roadway segment operations analysis showed that all roadway segments currently operate at LOS D or better. Under Opening Year 2022 conditions, the segment of Science Park Road between North Torrey Pines Road and Torreyana Road is forecast to operate at LOS E both without and with the project. Improvements were recommended to improve traffic operations along Science Park Road.

Queuing Analysis Findings

The queuing analysis results also showed that the 95th percentile queue length is expected to exceed the storage length for the westbound right-turn movement at the Genesee Avenue / I-5 Northbound Ramps intersection during the PM peak hour under Opening Year 2022 conditions both without and with the proposed project. Although supplemental analysis had shown that the queue length of the westbound right-turn movement at the Genesee Avenue / I-5 Northbound Ramps intersection would decrease with an increase in cycle length to 110 seconds, the queue lengths of the off-ramps at both intersections would increase during the peak hours if a 110-second cycle length was implemented. Therefore, no signal timing adjustments were recommended at the two ramp intersections for the Genesee Avenue / I-5 interchange.

Pedestrian Network Evaluation Findings

Evaluation of the pedestrian network in the study area revealed that sidewalks are currently provided in both directions of travel along the study area roadways, and crosswalks are provided at the signalized study intersections and the all-way stop intersection of Callan Road / Torreyana Road. A pedestrian bridge is planned to be constructed between the Spectrum Campus Buildings III and V, with a pedestrian connection to Science Park Road. A crosswalk will be striped across Science Park Road on the west leg of the intersection with Torreyana Road in conjunction with installation of all-way stop control at the intersection, which will be completed in late 2021.

The proposed project will construct non-contiguous sidewalks along portions of the project frontage on the east side of North Torrey Pines Road and along portions of the project frontage on the north side of Science Park Road where existing street trees will be removed and replaced per Tree Evaluation. Non-contiguous sidewalk is not proposed along the project frontage on the south side of Callan Road, as this would require removal of extensive existing landscaping, which is inconsistent with the subarea requirement of retaining existing mature trees and having development occur around and in between them.

Bicycle Network Evaluation Findings

The findings of the bicycle network evaluation showed that there are currently Class II bike lanes provided along North Torrey Pines Road and along John Jay Hopkins Drive in both directions of travel through the study area. The Class II bike lanes along North Torrey Pines Road include enhancements such as buffers and high-visibility green paint in the conflict zones. There are currently no bicycle facilities provided along Science Park Road, Torreyana Road, or Callan Road.

Transit Network Evaluation Findings

Evaluation of the transit network in the study area revealed that there are currently three (3) transit bus stops provided along North Torrey Pines Road within ¼ mile walking distance of the project site for NTCD Route 101. There are four (4) transit bus stops provided for MTS Route 978 along Science Park Road, Torreyana Road, and Callan Road within ¼ mile walking distance of the project site. Amenities such as a shelter, bench and trash receptable are provided at only one (1) of the seven (7) transit stops within walking distance of the project site.

Turn Lane Evaluation Findings

The need for left-turn or right-turn lanes at the signalized study intersections was also evaluated per the criteria identified in the City of San Diego's *Transportation Study Manual* (September 29, 2020). The results of the turn lane evaluation showed that the addition of project traffic would not result in the need for a left-turn lane, a second left-turn lane or a right-turn lane on the approaches of the signalized study intersections where these lanes are currently not provided.

Systemic Safety Review Findings

A Systemic Safety Review was performed at the study intersections to determine if any of the study intersections meet the criteria to be identified as a Systemic Hotspot for pedestrians, bicycles or vehicles per the *Systemic Safety The Data-Driven Path to Vision Zero* document. City of San Diego staff had verified that the study intersections did not meet any of the criteria to be identified as pedestrian hotspots. Therefore, the Systemic Safety Review was only conducted to identify bicycle and vehicle hotspots at the study intersections.

The results of the Systemic Safety Review for Bicycle Hotspots showed that none of the study intersections met the criteria for Bicycle Hotspot Scenario #1, but the North Torrey Pines Road Northbound Ramp Connector / Callan Road intersection did meet the criteria for Bicycle Hotspot Scenario #2.

Systemic Safety The Data-Driven Path to Vision Zero recommends a public messaging campaign or target enforcement of bicyclists running stop signs as countermeasures to discourage bicyclists from "rolling" through stop signs at side-street stop-controlled intersections. These countermeasures are not feasible for a standalone project and therefore, neither countermeasure will be implemented by the project.

The results of the Systemic Safety Review for Vehicle Hotspots showed that none of the study intersections met the criteria for Vehicle Hotspot Scenarios #1 through #4.

Recommended Transportation Improvements

The following improvements are recommended to improve conditions for all transportation modes in the immediate vicinity of the project site and within the study area:

<u>Roadway Conditions</u>

- Restripe Science Park Road from 300 feet east of North Torrey Pines Road to Torreyana Road to provide a continuous two-way left-turn lane. This improvement will require removing the existing on-street parking along Science Park Road and will also include proposed buffered Class II bike lanes.
- Stripe a 75-foot left-turn lane on the eastbound approach of the Science Park Road-Merryfield Row / Torreyana Road intersection.

<u>Pedestrian Conditions</u>

- Install a continental-style crosswalk across the northbound off-ramp at the North Torrey Pines Road / Callan Road interchange at the location where pedestrian curb ramps with truncated domes are currently provided. Install R1-5 or R1-5a signage per California MUTCD 2014 Edition (Revision 5, March 27, 2020) requiring vehicles to yield to pedestrians in crosswalk. These improvements are recommended to improve pedestrian connectivity between the project site and the existing transit bus stop located on northbound North Torrey Pines Road approximately 300 feet north of Callan Road.

Bicycle Conditions

- Restripe Science Park Road from North Torrey Pines Road to Torreyana Road to provide a buffered Class II bike lane in the eastbound direction, and restripe Science Park Road from Torreyana Road to 300 feet east of North Torrey Pines Road to provide a buffered Class II bike lane in the westbound direction. This improvement will require removing the existing on-street parking along Science Park Road to also include the proposed continuous two-way left-turn lane. In addition, install bicycle "sharrow" pavement markings along Torreyana Road and Callan Road in both directions of travel to provide a circuitous bicycle route around the One Alexandria Square project site. Although the City of San Diego's Bicycle Master Plan (December 2013) does not identify bicycle network improvements along Science Park Road, Torreyana Road, or Callan Road, the area in which the project site is located is identified as a high bicycle generator per the City's Bicycle Master Plan.

Transit Conditions

- Coordinate with MTS to provide the following amenities for the transit bus stops located within a quarter-mile walking distance of the project site:
    - Provide a bus shelter, bench and a trash receptable for the transit bus stop located along northbound North Torrey Pines Road approximately 100 feet north of Science Park Road.
    - Provide a bench and a trash receptable for the transit bus stop located along northbound North Torrey Pines Road approximately 300 feet north of Callan Road.
    - Provide route signage and benches for the four (4) existing MTS Route 978 transit bus stops located along Science Park Road (one stop), Torreyana Road (two stops), and Callan Road (one stop).

The recommended transportation improvements as described above are also illustrated graphically in **Exhibit 18**. A conceptual design plan for the recommended improvements on Science Park Road is provided in **Appendix J**.

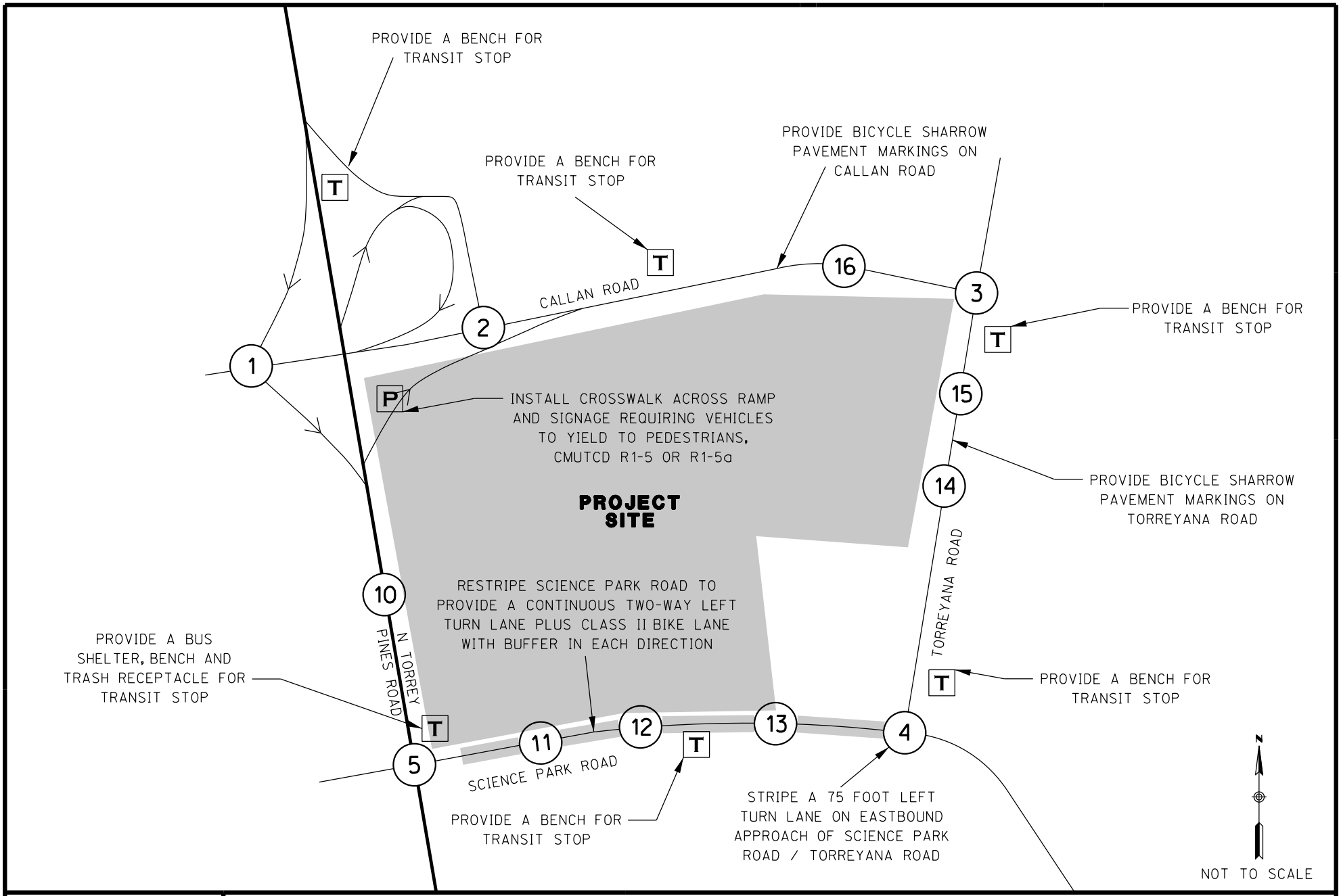

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EXHIBIT 18

RECOMMENDED TRANSPORTATION IMPROVEMENTS

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

LEGEND

- =RECOMMENDED TWLTL AND CLASS II BIKE LANES
- T =TRANSIT STOP
- P =PEDESTRIAN IMPROVEMENT

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Supplemental Analysis With Signal Timing Adjustments

Based on coordination with the City of San Diego and Caltrans, a supplemental analysis was conducted at the Genesee Avenue / I-5 Southbound Ramps and Genesee Avenue / I-5 Northbound Ramps intersections to determine if signal timing adjustments would improve operations and queuing during the peak hours. Caltrans had indicated that the maximum signal cycle length that they would consider is 110 seconds. Therefore, the supplemental analysis was conducted using a 110-second cycle length during both the AM and PM peak hours.

Table 16 shows the intersection operations at the Genesee Avenue / I-5 Southbound Ramps and Genesee Avenue / I-5 Northbound Ramps intersections if signal timing adjustments were implemented during the peak hours under Opening Year 2022 conditions with the project. As shown, implementing a 110-second signal cycle length would improve delay and LOS during both the AM and PM peak hours. Operations would improve from LOS F to LOS E at the Genesee Avenue / I-5 Northbound Ramps intersection during the PM peak hour if a 110-second cycle length was implemented.

Table 17 shows the 95th percentile queue lengths at the Genesee Avenue / I-5 Southbound Ramps and Genesee Avenue / I-5 Northbound Ramps intersections if a 110-second cycle length was implemented during the peak hours under Opening Year 2022 conditions with the project. As shown, queue lengths would increase for all movements during the AM peak hour including the approaches on the off-ramps of both intersections. Queue lengths would also increase during the PM peak hour for the approaches on the off-ramps of both intersections. Table 17 also shows that if a 110-second cycle length was implemented, the queue length of the westbound right-turn movement at the Genesee Avenue / I-5 Northbound Ramps intersection would be reduced to less than the storage length during the PM peak hour.

Caltrans has indicated that they would not accept signal timing adjustments that would result in an increase in queue lengths on the off-ramps. Because the queuing analysis results with signal timing adjustments had shown that the queue lengths on the off-ramps would increase during both the AM and PM peak hours, no signal timing adjustments are recommended at the Genesee Avenue / I-5 Southbound Ramps and Genesee Avenue / I-5 Northbound Ramps intersections.

The HCM operations and queuing analysis worksheets with the signal timing adjustments are provided in **Appendix K.** Appendix K also provides the SimTraffic worksheet for the Science Park Road-Merryfield Row / Torreyana Road intersection with the recommended eastbound left-turn lane, which shows that 75 feet of storage would accommodate the expected 95th percentile queue length during the peak hours.

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TABLE 16
INTERSECTION OPERATIONS WITH SIGNAL TIMING ADJUSTMENTS

INTERSECTION	OPENING YEAR 2022 WITH PROJECT						
	CONTROL TYPE	AM Peak Hour			PM Peak Hour		
			DELAY [1]	LOS [2]		DELAY [1]	LOS [2]
WITHOUT SIGNAL TIMING ADJUSTMENTS							
8 Genesee Avenue / I-5 SB Ramps	(S)	Overall	**73.2**	**E**	Overall	19.3	B
9 Genesee Avenue / I-5 NB Ramps	(S)	Overall	34.6	C	Overall	**106.4**	**F**
WITH SIGNAL TIMING ADJUSTMENTS							
8 Genesee Avenue / I-5 SB Ramps	(S)	Overall	**56.9**	**E**	Overall	29.3	C
9 Genesee Avenue / I-5 NB Ramps	(S)	Overall	26.3	C	Overall	**70.3**	**E**

FOOTNOTES:

1. Delay is measured in seconds per vehicle.

2. Level of Service

Results calculated utilizing the methodologies described in Chapters 18, 19, and 20 of 6th edition of the Highway Capacity Manual (HCM 6).

(S)=Signalized

Deficient LOS indicated in **bold**.

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TABLE 17
QUEUING ANALYSIS WITH SIGNAL TIMING ADJUSTMENTS

Intersection		Lane / Movement	No. of Lanes/ Storage Length (feet)	OPENING YEAR 2022 WITH PROJECT WITHOUT SIGNAL TIMING ADJUSTMENTS				OPENING YEAR 2022 WITH PROJECT WITH SIGNAL TIMING ADJUSTMENTS			
				AM Peak Hour		PM Peak Hour		AM Peak Hour[1]		PM Peak Hour	
				Volume	*Queue Length (feet)*	Volume	*Queue Length (feet)*	Volume	*Queue Length (feet)*	Volume	*Queue Length (feet)*
8	Genesee Avenue / I-5 Southbound Ramps	SB left	2 / 810’	1,406	*722'*	386	*179'*	1,406	***804'***	386	***354'***
		SB right	2 / 810'	1,557	*847'*	350	*72'*	1,557	***1,007'***	350	***81'***
		SB off-ramp[2]	2 / 1,660’	2,963	*847'*	736	*179'*	2,963	***1,007'***	736	***354'***
		EB right	2 / 440'	192	*27'*	934	*113'*	192	***31'***	934	*66'*
		WB left	2 / 640'	172	*108'*	388	*138'*	172	***111'***	388	***208'***
9	Genesee Avenue / I-5 Northbound Ramps	NB left	2 / 840'	1,362	*679'*	313	*265'*	1,362	***766'***	313	***339'***
		NB right	2 / 750’	985	*360'*	184	*65'*	985	***400'***	184	*64'*
		NB off-ramp[2]	1 / 1,400’	2,347	*679'*	497	*265'*	2,347	***766'***	497	***339'***
		EB left	2 / 685'	215	*133'*	1,365	*601'*	215	***140'***	1,365	*448'*
		WB right	2 / 400'	575	*42'*	1,410	***438'***	575	***47'***	1,410	*385'*

Note: 95th percentile queue lengths shown from SimTraffic and Synchro queuing analysis reports.
The total lengths, volumes and queue lengths of the off-ramps are shaded in gray.
Queue length shown in **bold** indicate queue exceeding the existing storage length for the movement, or movements where queue lengths increase with signal timing adjustments.
[2]Total length of off-ramp from intersection stop bar to gore point where ramp diverges from freeway mainline lanes.

REFERENCES

1. City of San Diego, Transportation Study Manual, September 29, 2020.

2. Transportation Research Board, Highway Capacity Manual 6th Edition, Washington, D.C., 2016

3. City of San Diego, University Community Plan, Amended December 5, 2016.

4. City of San Diego, Trip Generation Manual, City of San Diego Municipal Code Land Development Code (May 2003).

5. City of San Diego Development Services Department, OpenDSD Website (URL: https://opendsd.sandiego.gov/Web/Maps/ApprovalsDiscretionary)

6. Trafficware LLC, Synchro, Version 10.3, Build 28, Sugar Land, Texas, 2017.

7. Trafficware LLC, SimTraffic, Version 10.3, Build 28, Sugar Land, Texas, 2017.

8. Alta Planning & Design, City of San Diego Bicycle Master Plan, December 2013.

9. City of San Diego, Systemic Safety The Data-Driven Path to Vision Zero, April 2019.

10. City of San Diego Street Design Manual, March 2017.

11. California Department of Transportation, California Manual on Uniform Traffic Control Devices (MUTCD), 2014 Edition, Revision 5 (March 27, 2020).

APPENDIX A

SITE PLAN OF EXISTING ON-SITE BUILDINGS

SDP 151106 — LOTS 1 THROUGH 4 INCLUSIVE AND LOT "A" OF ALEXANDRIA TECHNOLOGY CENTER, IN THE CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 15437, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, ON SEPTEMBER 19, 2006 AS FILE NO. 0666754.

SDP 9829 — LOT 12 UNIT # 2 TORREY PINES, IN THE CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF 8434 ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO.

EXISTING DEVELOPMENT	
SDP 15116	
BUILDING A: (E) 2-STORY	45,371 SF
BUILDING B: (E) 1-STORY	122,000 SF
BUILDING C: (E) 2 STORY	74,111 SF
REMAINING UNBUILT ENTITLEMENTS	44,118 SF
TOTAL	**285,600 SF**
SDP 9829	
BUILDING D: (E) 2-STORY	**81,895 SF**
REMAINING UNBUILT ENTITLEMENTS	**60,674 SF**
TOTAL	**142,569 SF**
COMBINED ENTITLEMENTS:	**428,169 SF**

EXISTING PARKING			
SDP 15116			
	(STANDARD)	ACCESSIBLE	
ON GRADE	460	15	
BLDG. A SUBTERRANEAN	50	3	
BLDG. C SUBTERRANEAN	79	4	
TOTAL	**609**	**22**	**= 631**
SDP 9829			
	(STANDARD)	ACCESSIBLE	
ON GRADE	159	6	
PARKING STRUCTURE	165	4	
TOTAL	**324**	**10**	**= 334**

SDP 151106 + SDP 9829 EXISTING DEVELOPMENT
SCALE: 1" = 50'-0"

1

Alexandria Real Estate Equities, Inc.
10996 Torreyana Road
San Diego CA 92121

Gensler
225 Broadway
Suite 1600
San Diego CA 92101
Tel: 619.557.2500
Fax: 619.557.2529

Issue	Date & Issue Description	By	Check
1	01/24/2014		DesignerChecker
2	02/21/2014		

Seal/Signature

APPROVED EXHIBIT "A"
Approval Date 02/24/2014
Permit No. SDR # 150085
PTS # 344643

Project Name
Torreyana / Sunrise

Project Number
55.7106.016

Description
SDP 151106 + SDP 9829 EXISTING DEVELOPMENT

Scale
1" = 50'-0"

A0.05

APPENDIX B

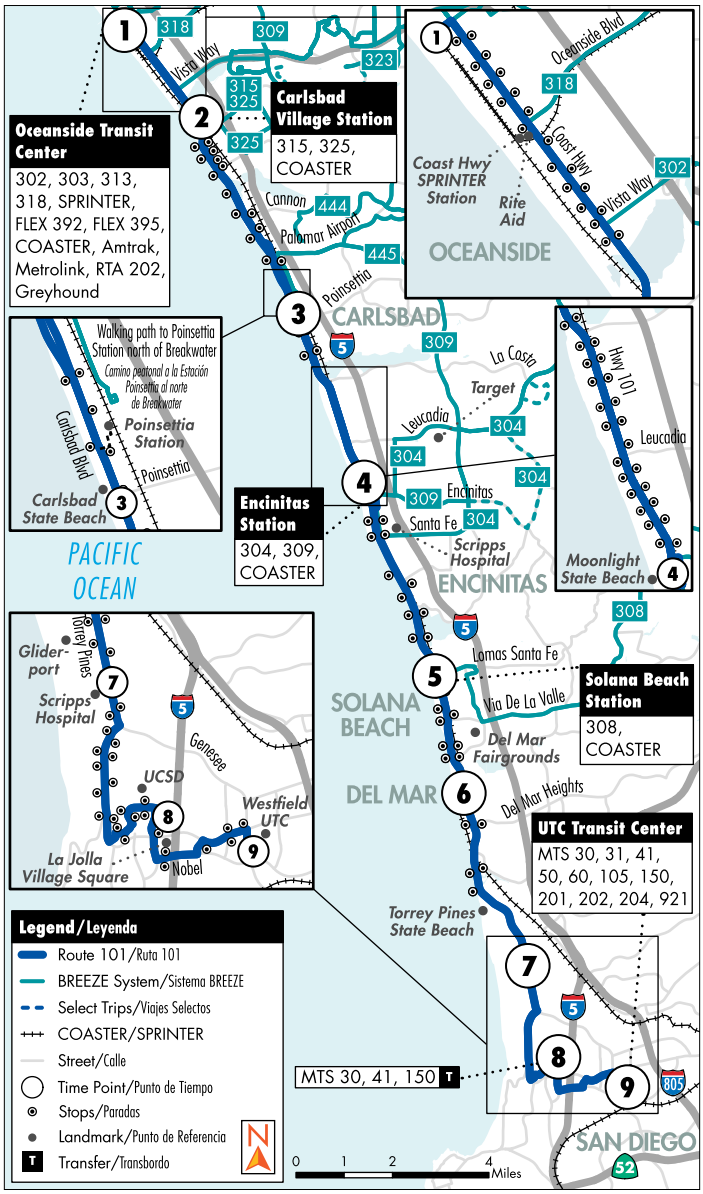
NTCD/MTS TRANSIT ROUTES AND SCHEDULES

101 Oceanside to VA/UCSD/UTC via Highway 101

Oceanside a VA/UCSD/UTC a través de la autopista 101

M-F • SA • SU
L-V • SÁ • DO

Destinations/Destinos
- University of California, San Diego
- VA Medical Center
- Scripps Green Hospital
- Carlsbad State Beach
- Del Mar Fairgrounds & Racetrack
- Birch Aquarium
- Salk Institute



101 Oceanside to VA/UCSD/UTC via Highway 101

Oceanside a VA/UCSD/UTC a través de la autopista 101

See pg. 6 for Holiday schedules/Ver pág. 244 para obtener los horarios de días festivos

Monday - Friday
Southbound to VA Medical Center/UCSD/UTC
Lunes a Viernes • Dirección hacia el sur a VA Medical Center/UCSD/UTC

Oceanside Transit Center	Carlsbad Village Station	Carlsbad Blvd. & Poinsettia Ln.	Encinitas Station	Highway 101 & Lomas Santa Fe Dr.	Camino Del Mar & 15th St.	Torrey Pines & Scripps	VA Medical Center	Westfield UTC
1	2	3	4	5	6	7	8	9
5:07	5:17	5:27	5:40	5:50	5:56	6:07	6:21	6:33a
5:37	5:47	5:57	6:10	6:20	6:26	6:37	6:52	7:05
6:07	6:17	6:29	6:43	6:56	7:02	7:14	7:30	7:43
6:37	6:48	7:00	7:14	7:27	7:33	7:45	8:01	8:15
7:07	7:19	7:33	7:52	8:05	8:12	8:26	8:43	8:57
7:37	7:49	8:03	8:22	8:35	8:42	8:56	9:13	9:27
8:07	8:19	8:33	8:51	9:04	9:11	9:24	9:41	9:55
8:37	8:49	9:03	9:21	9:34	9:41	9:54	10:11	10:25
9:07	9:19	9:33	9:50	10:03	10:10	10:23	10:40	10:54
9:37	9:49	10:03	10:20	10:33	10:40	10:53	11:10	11:24
10:07	10:21	10:35	10:52	11:05	11:12	11:25	11:43	11:59
10:37	10:51	11:05	11:22	11:35	11:42	11:55	**12:13**	**12:29p**
11:07	11:21	11:35	11:52	**12:05**	**12:12**	**12:26**	**12:44**	**1:00**
11:37	11:51	**12:05**	**12:22**	**12:35**	**12:42**	**12:56**	**1:14**	**1:30**
12:07	**12:21**	**12:35**	**12:52**	**1:05**	**1:12**	**1:27**	**1:47**	**2:04**
12:37	**12:51**	**1:05**	**1:22**	**1:35**	**1:42**	**1:57**	**2:17**	**2:34**
1:07	**1:21**	**1:35**	**1:52**	**2:05**	**2:12**	**2:27**	**2:47**	**3:04**
1:37	**1:51**	**2:05**	**2:22**	**2:35**	**2:42**	**2:57**	**3:17**	**3:34**
2:07	**2:21**	**2:35**	**2:52**	**3:05**	**3:12**	**3:27**	**3:48**	**4:05**
2:37	**2:51**	**3:05**	**3:22**	**3:35**	**3:42**	**3:57**	**4:18**	**4:35**
3:07	**3:21**	**3:35**	**3:52**	**4:06**	**4:13**	**4:28**	**4:49**	**5:06**
3:37	**3:51**	**4:05**	**4:22**	**4:36**	**4:43**	**4:58**	**5:19**	**5:36**
4:07	**4:22**	**4:36**	**4:53**	**5:07**	**5:14**	**5:29**	**5:50**	**6:07**
4:37	**4:52**	**5:06**	**5:23**	**5:37**	**5:44**	**5:59**	**6:20**	**6:37**
5:07	**5:21**	**5:35**	**5:51**	**6:05**	**6:12**	**6:25**	**6:43**	**6:59**
5:37	**5:51**	**6:04**	**6:20**	**6:34**	**6:41**	**6:54**	**7:11**	**7:27**
6:07	**6:19**	**6:32**	**6:48**	**7:00**	**7:07**	**7:19**	**7:36**	**7:50**
6:37	**6:49**	**7:02**	**7:18**	**7:30**	**7:37**	**7:49**	**8:06**	**8:20**
7:36	**7:48**	**8:01**	**8:17**	**8:29**	**8:36**	**8:48**	**9:05**	**9:18**
9:07	**9:19**	**9:30**	**9:44**	**9:56**	**10:02**	**10:12**	**10:26**	**10:39**
10:07	**10:18**	**10:28**	**10:40**	–	–	–	–	–

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101 Oceanside to VA/UCSD/UTC via Highway 101

Oceanside a VA/UCSD/UTC vía Highway 101

See pg. 6 for Holiday schedules/Ver pág. 244 para obtener los horarios de días festivos

Monday - Friday
Northbound to Oceanside
Lunes a Viernes • Dirección hacia el norte a Oceanside

Westfield UTC	VA Medical Center	Torrey Pines & Scripps	Camino Del Mar & 15th St.	Highway 101 & Lomas Santa Fe Dr.	Encinitas Station	Carlsbad Blvd. & Poinsettia Ln.	Carlsbad Village Station	Oceanside Transit Center
9	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**
–	–	–	–	–	5:47	5:59	6:10	6:21a
5:28	5:36	5:48	5:57	6:04	6:17	6:29	6:40	6:51
5:56	6:04	6:17	6:26	6:33	6:46	6:58	7:09	7:21
6:17	6:27	6:42	6:53	7:00	7:13	7:27	7:39	7:51
6:42	6:54	7:10	7:22	7:29	7:43	7:57	8:09	8:21
7:06	7:20	7:38	7:50	7:58	8:12	8:26	8:38	8:51
7:36	7:50	8:08	8:20	8:28	8:42	8:56	9:08	9:21
8:05	8:19	8:37	8:49	8:57	9:11	9:25	9:37	9:51
8:35	8:49	9:07	9:19	9:27	9:41	9:55	10:07	10:21
9:04	9:18	9:36	9:48	9:56	10:10	10:24	10:37	10:51
9:34	9:48	10:06	10:18	10:26	10:40	10:54	11:07	11:21
10:02	10:16	10:34	10:46	10:54	11:08	11:22	11:36	11:51
10:32	10:46	11:04	11:16	11:24	11:38	11:52	**12:06**	**12:21p**
11:01	11:15	11:33	11:45	11:53	**12:07**	**12:22**	**12:36**	**12:51**
11:28	11:42	**12:00**	**12:12**	**12:22**	**12:37**	**12:52**	**1:06**	**1:21**
11:58	**12:12**	**12:30**	**12:42**	**12:52**	**1:07**	**1:22**	**1:36**	**1:51**
12:28	**12:42**	**1:00**	**1:12**	**1:22**	**1:37**	**1:52**	**2:06**	**2:21**
12:58	**1:12**	**1:30**	**1:42**	**1:52**	**2:07**	**2:22**	**2:36**	**2:51**
1:25	**1:39**	**1:57**	**2:09**	**2:19**	**2:35**	**2:51**	**3:06**	**3:21**
1:55	**2:09**	**2:27**	**2:39**	**2:49**	**3:05**	**3:21**	**3:36**	**3:51**
2:20	**2:34**	**2:52**	**3:06**	**3:17**	**3:33**	**3:49**	**4:05**	**4:21**
2:48	**3:03**	**3:22**	**3:36**	**3:47**	**4:03**	**4:19**	**4:35**	**4:51**
3:12	**3:27**	**3:46**	**4:02**	**4:16**	**4:32**	**4:48**	**5:04**	**5:21**
3:42	**3:57**	**4:16**	**4:32**	**4:46**	**5:02**	**5:18**	**5:34**	**5:51**
4:18	**4:33**	**4:52**	**5:08**	**5:20**	**5:36**	**5:52**	**6:07**	**6:21**
4:49	**5:04**	**5:23**	**5:39**	**5:51**	**6:06**	**6:22**	**6:37**	**6:51**
5:28	**5:43**	**6:02**	**6:15**	**6:25**	**6:39**	**6:53**	**7:08**	**7:21**
6:08	**6:21**	**6:38**	**6:50**	**6:59**	**7:13**	**7:27**	**7:39**	**7:51**
6:38	**6:51**	**7:08**	**7:20**	**7:29**	**7:43**	**7:57**	**8:09**	**8:21**
7:09	**7:22**	**7:39**	**7:51**	**8:00**	**8:14**	**8:27**	**8:39**	**8:51**
8:17	**8:27**	**8:42**	**8:53**	**9:00**	**9:14**	**9:27**	**9:39**	**9:51**
9:22	**9:32**	**9:46**	**9:56**	**10:03**	**10:17**	**10:30**	**10:42**	**10:52**

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101 Oceanside to VA/UCSD/UTC via Highway 101

Oceanside a VA/UCSD/UTC vía Highway 101

See pg. 6 for Holiday schedules/Ver pág. 244 para obtener los horarios de días festivos

Saturday & Sunday
Southbound to VA Medical Center/UCSD/UTC
Sábado y Domingo • Dirección hacia el sur a VA Medical Center/UCSD/UTC

Oceanside Transit Center	Carlsbad Village Station	Carlsbad Blvd. & Poinsettia Ln.	Encinitas Station	Highway 101 & Lomas Santa Fe Dr.	Camino Del Mar & 15th St.	Torrey Pines & Scripps	VA Medical Center	Westfield UTC
1	2	3	4	5	6	7	8	9
5:11	5:21	5:31	5:46	5:56	6:02	6:12	6:24	6:34a
5:38	5:48	5:58	6:13	6:23	6:29	6:39	6:51	7:01
6:41	6:52	7:03	7:19	7:30	7:37	7:48	8:00	8:11
7:11	7:22	7:34	7:50	8:01	8:08	8:19	8:32	8:43
7:41	7:52	8:05	8:21	8:33	8:40	8:51	9:04	9:16
8:11	8:23	8:36	8:52	9:04	9:11	9:22	9:36	9:48
8:41	8:53	9:07	9:24	9:36	9:43	9:54	10:08	10:21
9:13	9:26	9:40	9:57	10:09	10:16	10:27	10:42	10:56
9:41	9:54	10:09	10:26	10:38	10:46	10:57	11:12	11:27
10:11	10:25	10:40	10:57	11:10	11:18	11:29	11:44	11:59
10:41	10:55	11:10	11:27	11:40	11:48	11:59	**12:16**	**12:31p**
11:11	11:26	11:41	11:58	**12:11**	**12:19**	**12:30**	**12:47**	**1:02**
11:41	11:56	**12:11**	**12:28**	**12:42**	**12:50**	**1:01**	**1:18**	**1:33**
12:11	**12:26**	**12:41**	**12:59**	**1:13**	**1:21**	**1:32**	**1:50**	**2:05**
12:41	**12:56**	**1:12**	**1:30**	**1:44**	**1:52**	**2:04**	**2:22**	**2:37**
1:11	**1:26**	**1:42**	**2:00**	**2:14**	**2:21**	**2:33**	**2:51**	**3:06**
1:41	**1:56**	**2:12**	**2:30**	**2:44**	**2:51**	**3:03**	**3:21**	**3:36**
2:10	**2:25**	**2:41**	**2:59**	**3:13**	**3:20**	**3:32**	**3:50**	**4:05**
2:41	**2:56**	**3:11**	**3:29**	**3:43**	**3:50**	**4:02**	**4:20**	**4:35**
3:11	**3:26**	**3:41**	**3:58**	**4:11**	**4:18**	**4:30**	**4:48**	**5:03**
3:41	**3:56**	**4:11**	**4:28**	**4:41**	**4:48**	**5:00**	**5:18**	**5:33**
4:11	**4:26**	**4:40**	**4:57**	**5:10**	**5:17**	**5:29**	**5:47**	**6:02**
4:41	**4:55**	**5:08**	**5:25**	**5:37**	**5:44**	**5:56**	**6:14**	**6:29**
5:11	**5:25**	**5:38**	**5:55**	**6:07**	**6:14**	**6:26**	**6:43**	**6:57**
5:41	**5:54**	**6:07**	**6:23**	**6:35**	**6:42**	**6:54**	**7:10**	**7:24**
6:11	**6:24**	**6:37**	**6:53**	**7:04**	**7:10**	**7:22**	**7:37**	**7:51**
6:41	**6:54**	**7:07**	**7:23**	**7:34**	**7:40**	**7:51**	**8:05**	**8:19**
7:41	**7:53**	**8:05**	**8:21**	**8:32**	**8:38**	**8:49**	**9:03**	**9:17**
8:41	**8:53**	**9:05**	**9:21**	**9:32**	**9:38**	**9:49**	**10:03**	**10:16**

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101 Oceanside to VA/UCSD/UTC via Highway 101

Oceanside a VA/UCSD/UTC vía Highway 101

See pg. 6 for Holiday schedules/Ver pág. 244 para obtener los horarios de días festivos

Saturday & Sunday
Northbound to Oceanside
Sábado y Domingo • Dirección hacia el norte a Oceanside

Westfield UTC	VA Medical Center	Torrey Pines & Scripps	Camino Del Mar & 15th St.	Highway 101 & Lomas Santa Fe Dr.	Encinitas Station	Carlsbad Blvd. & Poinsettia Ln.	Carlsbad Village Station	Oceanside Transit Center
9	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**
–	–	–	–	–	5:44	5:55	6:07	6:18a
5:49	5:56	6:07	6:17	6:25	6:44	6:55	7:07	7:18
6:16	6:23	6:34	6:44	6:52	7:11	7:23	7:36	7:47
6:45	6:52	7:04	7:14	7:22	7:41	7:54	8:08	8:19
7:10	7:18	7:30	7:41	7:49	8:08	8:21	8:35	8:47
7:39	7:48	8:00	8:11	8:19	8:39	8:52	9:06	9:18
8:05	8:14	8:26	8:37	8:46	9:06	9:19	9:34	9:47
8:35	8:44	8:56	9:07	9:16	9:36	9:49	10:04	10:18
9:03	9:12	9:24	9:35	9:44	10:04	10:17	10:33	10:48
9:30	9:40	9:53	10:04	10:13	10:33	10:47	11:03	11:18
10:00	10:10	10:23	10:34	10:43	11:03	11:17	11:33	11:48
10:29	10:39	10:52	11:03	11:12	11:32	11:46	**12:03**	**12:18p**
10:58	11:08	11:21	11:32	11:41	**12:01**	**12:16**	**12:33**	**12:48**
11:26	11:36	11:50	**12:02**	**12:11**	**12:31**	**12:46**	**1:03**	**1:18**
11:56	**12:06**	**12:20**	**12:32**	**12:41**	**1:01**	**1:16**	**1:33**	**1:48**
12:25	**12:36**	**12:50**	**1:02**	**1:11**	**1:31**	**1:46**	**2:03**	**2:18**
12:55	**1:06**	**1:20**	**1:32**	**1:41**	**2:01**	**2:16**	**2:33**	**2:48**
1:25	**1:36**	**1:50**	**2:02**	**2:11**	**2:31**	**2:46**	**3:03**	**3:18**
1:55	**2:06**	**2:20**	**2:32**	**2:41**	**3:01**	**3:16**	**3:33**	**3:48**
2:25	**2:36**	**2:50**	**3:02**	**3:11**	**3:31**	**3:46**	**4:03**	**4:18**
2:55	**3:06**	**3:20**	**3:32**	**3:41**	**4:01**	**4:16**	**4:33**	**4:48**
3:25	**3:36**	**3:50**	**4:02**	**4:11**	**4:31**	**4:46**	**5:03**	**5:18**
3:55	**4:06**	**4:20**	**4:32**	**4:41**	**5:01**	**5:16**	**5:33**	**5:48**
4:26	**4:37**	**4:51**	**5:03**	**5:12**	**5:32**	**5:46**	**6:03**	**6:18**
4:58	**5:09**	**5:23**	**5:34**	**5:42**	**6:02**	**6:16**	**6:33**	**6:48**
5:32	**5:43**	**5:56**	**6:07**	**6:15**	**6:34**	**6:47**	**7:04**	**7:18**
6:35	**6:46**	**6:59**	**7:10**	**7:18**	**7:36**	**7:48**	**8:04**	**8:18**
7:38	**7:49**	**8:01**	**8:12**	**8:19**	**8:36**	**8:48**	**9:04**	**9:18**
8:43	**8:53**	**9:05**	**9:15**	**9:22**	**9:39**	**9:51**	**10:05**	**10:18**
9:45	**9:55**	**10:06**	**10:16**	**10:23**	**10:40**	**10:52**	**11:05**	**11:18**

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Effective JUNE 28, 2020

COASTER CONNECTION

Sorrento Valley COASTER Station

972 Sorrento Mesa

973 Carroll Canyon

974 UC San Diego

978 Torrey Pines

979 North University City

06/20

sdmts.com
Route Alerts, Updated Schedules, Connections & More

CASH FARES / *Tarifas en efectivo*

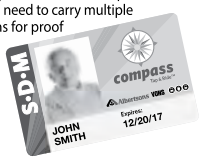
The Sorrento Valley COASTER Connection is a free service for COASTER passengers! This service is provided as a courtesy by the Metropolitan Transit System and the North County Transit District.

¡El Sorrento Valley COASTER Connection es un servicio gratuito para los pasajeros del COASTER! Este servicio es proveído como cortesía por el Metropolitan Transit System y el North County Transit District.

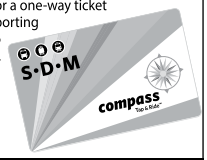
compass card

S/D/M and Youth Compass Card
All riders using reduced fares must comply with one of the following options:

Option 1 *(Recommended by MTS)*
MTS offers a picture ID on a Compass Card to eliminate the need to carry multiple identifications for proof of eligibility.



Option 2
Riders using a standard S/D/M or Youth Compass Card or a one-way ticket must carry supporting identification to prove eligibility.



For additional benefits of **Option 1** *and or list of valid forms of ID for* **Option 2** *go to:* *sdmts.com/reduced-fares*

DIRECTORY /

MTS Informatic
MTS Informació

TTY/TDD (telet
Teletipo para sor

InfoExpress (24-
Información las

Customer Servi
Servicio al client

MTS Security
MTS Seguridad

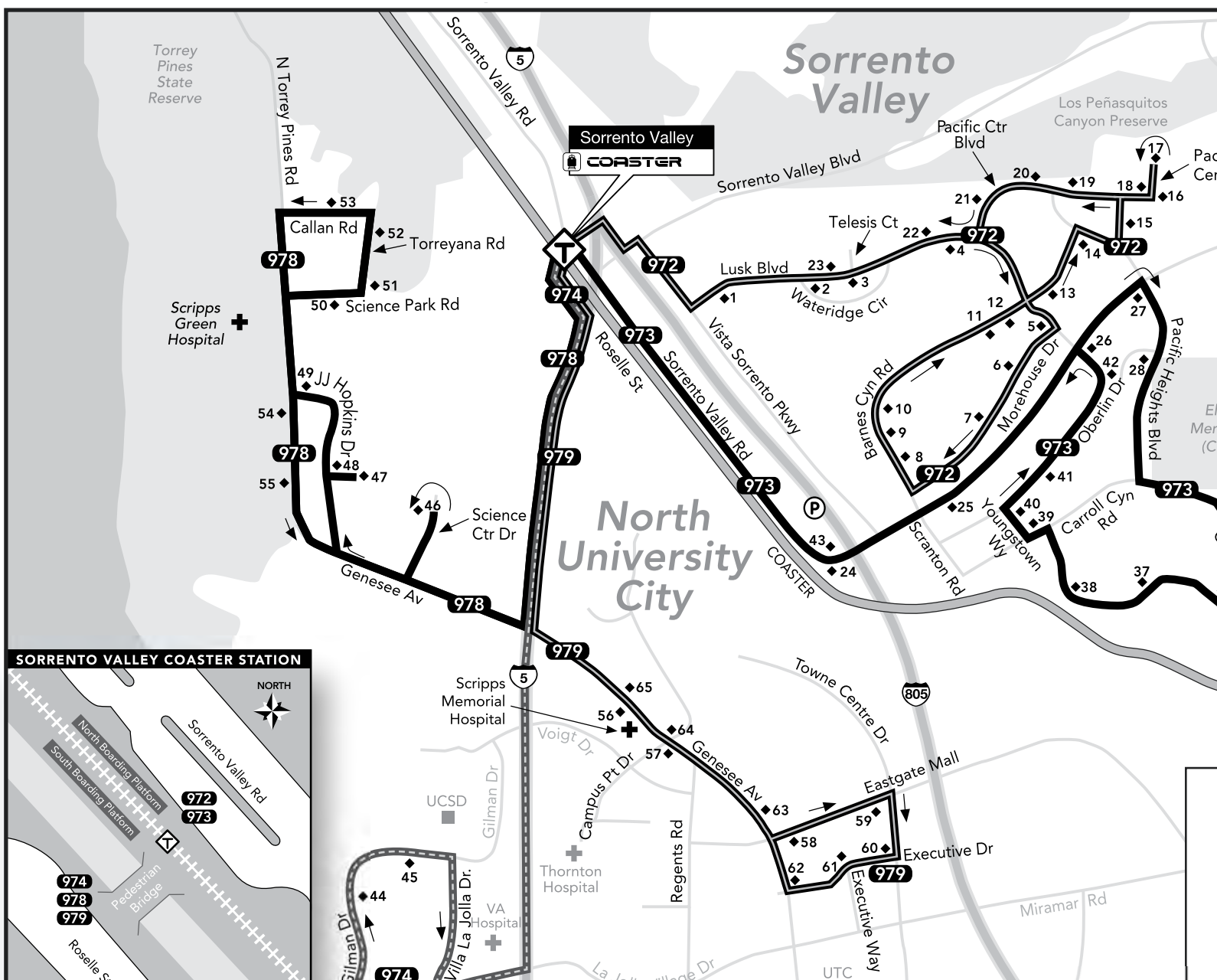
Lost & Found
Objetos extravi

Transit Store

For MTS online
Planificación de

For more informa
Guide on a bus o
Para obtener más
MTS, recoja un 'R
Store, o visita a s

Thank you for ri



Alternative formats available upon request. Please call: (619) 557-4555 / *Formato alternativo disponible al preguntar.*

Route 972 – Monday through Friday / *lunes a viernes*

Sorrento Mesa ➡ Sorrento Valley COASTER Station

		Morning (AM)		Afternoon/Evening (PM)	
ⓣ	Sorrento Valley COASTER Station **DEPART***	7:10a	8:16a	—	**4:40p**
1	10525 Vista Sorrento				
2	EB Lusk Blvd & Wateridge Circle (after intersection)				
3	EB Lusk Blvd & Telesis Ct. (after intersection)				
4	Across from 6455 Lusk Blvd.	7:17	8:23	**4:14p**	**4:49**
5	10225 Lusk Blvd. (electrical boxes)				
6	Across from 5525 Morehouse Drive				
7	5510 Morehouse Drive				
8	5424 Scranton Road				
9	9605 Scranton Road				
10	9805 Scranton Road				
11	10055 Barnes Canyon Road				
12	10225 Barnes Canyon Road				
13	EB Barnes Canyon Road & Lusk Blvd. (after intersection)	7:23	8:29	**4:20**	**4:55**
14	EB Barnes Canyon Road & Pacific Heights Blvd. (before turn)				
15	10211 Pacific Mesa Blvd.				
16	10309 Pacific Center Ct.				
17	10450 Pacific Center Ct.				
18	5910 Pacific Center Blvd.				
19	5788 Pacific Center Blvd.				
20	5764 Pacific Center Blvd.				
21	WB Pacific Center Blvd & McKellar Ct. (after intersection)				
22	Qualcomm Design Center (45 mph sign)	7:31	8:37	**4:28**	**5:03**
23	WB Lusk Blvd & Telesis Ct. (after intersection)				
ⓣ	Sorrento Valley COASTER Station **ARRIVE**	7:37	—	**4:37**	**5:12**

Route 973 – Monday through Friday / *lunes a viernes*

Carroll Canyon ➡ Sorrento Valley COASTER Station

		Morning (AM)		Afternoon/Evening (PM)	
ⓣ	Sorrento Valley COASTER Station **DEPART***	7:10a	8:22a	—	**4:41p**
24	10240 Sorrento Valley Road				
25	EB Mira Mesa Blvd. & Scranton Road (after intersection)				
26	EB Mira Mesa Blvd. & Oberlin Drive (after intersection)				
27	Pacific Heights Blvd. & Mira Mesa Blvd. (after turn, electrical boxes)	7:18	8:30	**4:14p**	**4:49**
28	Pacific Heights Blvd. & Cornerstone Ct. (after intersection)				
29	Brown Deer Road & Ferris Square (at pedestrian crossing sign)				
30	9215 Brown Deer Road				
31	9339 Carroll Park Drive				
32	9449 Carroll Park Drive				
33	Nancy Ridge Drive & Carroll Road (after turn, Carroll Ridge Bus. Park)	7:27	8:39	**4:23**	**4:58**
34	6868 Nancy Ridge Drive				
35	6650 Nancy Ridge Drive				
36	6310 Nancy Ridge Drive				
37	6150 Nancy Ridge Drive (Sorrento Ridge Business Park)				
38	5960 Nancy Ridge Drive (Sorrento Vista Industrial Park)				
39	5280 Carroll Canyon Road				
40	Youngstown Way & Oberlin Drive (before turn, at fire hydrant)				
41	5807 Oberlin Drive				
42	5871 Oberlin Drive (mailboxes)	7:31	8:43	**4:27**	**5:02**
43	Across street from 10260 Sorrento Valley Rd.				
ⓣ	Sorrento Valley COASTER Station **ARRIVE**	7:40	—	**4:37**	**5:12**

Route 974 – Monday through Friday / *lunes a viernes*

UC San Diego ➡ Sorrento Valley COASTER Station

		Morning (AM)		Afternoon/Evening (PM)	
ⓣ	Sorrento Valley COASTER Station **DEPART***	7:10a	8:19a	—	**4:47p**
44	Gilman Drive & Eucalyptus Grove Lane				
45	Gilman Transit Center (UCSD)	7:20	8:29	**4:23p**	**4:59**
ⓣ	Sorrento Valley COASTER Station **ARRIVE**	7:32	—	**4:37**	**5:13**

Route 978 – Monday through Friday / *lunes a viernes*

Torrey Pines ➡ Sorrento Valley COASTER Station

		Morning (AM)		Afternoon/Evening (PM)	
ⓣ	Sorrento Valley COASTER Station **DEPART***	7:14a	8:24a	—	**4:40p**

APPENDIX C

VEHICLE, PEDESTRIAN AND BICYCLE COUNTS

Prepared by National Data & Surveying Services

N Torrey Pines Rd SB & Callan Rd

Peak Hour Turning Movement Count

ID: 19-04447-001
City: La Jolla

Day: Wednesday
Date: 11/13/2019

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

N Torrey Pines Rd SB — SOUTHBOUND

	Right	Thru	Left	U-Turn	Exit (NB)
AM	29	0	140	0	0
NOON	0	0	0	0	0
PM	22	0	5	0	0
Lanes	0.5	0.5	1	0	

Callan Rd — EASTBOUND

	AM	NOON	PM	Lanes
Exit (WB)	86	0	75	
U-Turn	0	0	0	0
Left	0	0	0	0
Thru	9	0	61	1
Right	30	0	116	0

Callan Rd — WESTBOUND

	Lanes	PM	NOON	AM
Right	0	0	0	0
Thru	1	53	0	57
Left	0	164	0	22
U-Turn	0	0	0	1
Exit (EB)		66	0	150

N Torrey Pines Rd SB — NORTHBOUND

	Exit (SB)	U-Turn	Left	Thru	Right
Lanes		0	0	0	0
PM	280	0	0	0	0
NOON	0	0	0	0	0
AM	52	0	0	0	0

CONTROL

1-Way Stop(SB)

	AM	NOON	PM
TEV	288	0	421
PHF	0.89		0.86

Total Vehicles (AM)

Approach	Left	Thru	Right
SB	140	0	29
EB	0	9	30
WB	22	57	0
NB	0	0	0

Total Vehicles (Noon)

All movements: N/A

Total Vehicles (PM)

Approach	Left	Thru	Right
SB	5	0	22
EB	0	61	116
WB	164	53	0
NB	0	0	0

Bikes (AM)

Approach	Left	Thru	Right
SB	2	0	0
EB	0	0	0
WB	1	0	0
NB	0	0	0

Bikes (NOON)

All movements: N/A

Bikes (PM)

Approach	Left	Thru	Right
SB	0	0	0
EB	0	1	0
WB	0	0	0
NB	0	0	0

Pedestrians (Crosswalks)

Crosswalk	Direction	AM	NOON	PM
North	westward	2	0	1
North	eastward	3	0	4
South	westward	0	0	0
South	eastward	1	0	0
West	southward	12	0	6
West	northward	5	0	8
East	southward	1	0	0
East	northward	0	0	0
Diagonals (all corners)		0	0	0

Prepared by National Data & Surveying Services

N Torrey Pines Rd NB & Callan Rd

Peak Hour Turning Movement Count

ID: 19-04447-002
City: La Jolla

Day: Wednesday
Date: 11/13/2019

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

N Torrey Pines Rd NB — SOUTHBOUND

	Right	Through	Left	U-Turn	Departing
AM	11	0	3	0	35
NOON	0	0	0	0	0
PM	53	0	2	0	164
Lanes	1	1	0	0	

Callan Rd — EASTBOUND

	AM	NOON	PM	Lanes
Departing	34	0	188	
U-Turn	0	0	0	0
Left	21	0	55	0
Through	130	0	9	1
Right	0	0	0	0

Callan Rd — WESTBOUND

	Lanes	PM	NOON	AM
Right	0	109	0	11
Through	1	135	0	23
Left	0	0	0	0
U-Turn	0	0	0	0
Departing		45	0	254

N Torrey Pines Rd NB — NORTHBOUND

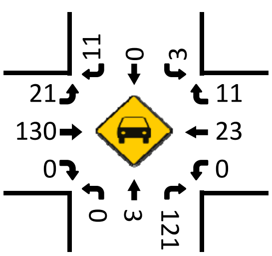
	Departing	U-Turn	Left	Through	Right
Lanes		0	0	0	1
PM	0	0	0	0	34
NOON	0	0	0	0	0
AM	0	0	0	3	121

CONTROL

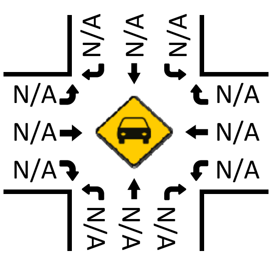
1-Way Stop(SB)

	AM	NOON	PM
TEV	323	0	397
PHF	0.95		0.89

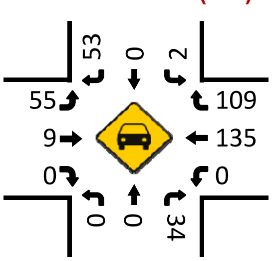
Total Vehicles (AM)



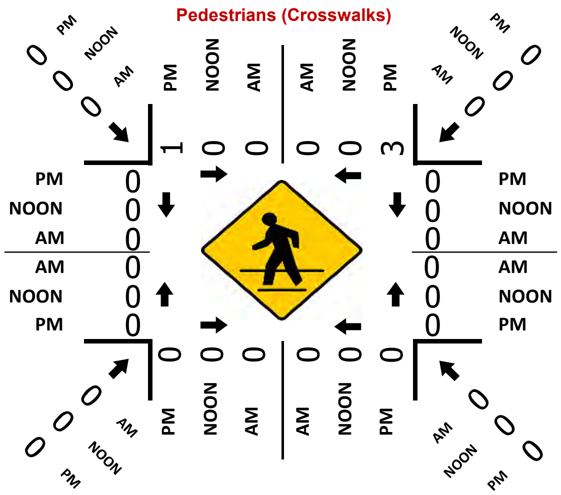
Total Vehicles (Noon)



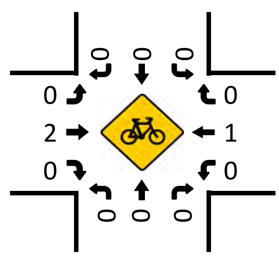
Total Vehicles (PM)



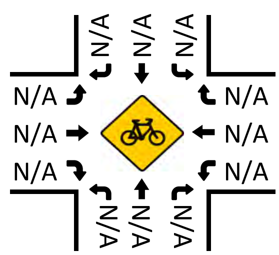
Pedestrians (Crosswalks)



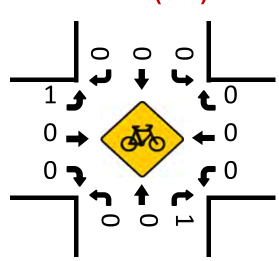
Bikes (AM)



Bikes (NOON)



Bikes (PM)



Prepared by National Data & Surveying Services

Torreyana Rd & Callan Rd

Peak Hour Turning Movement Count

ID: 19-04420-001
City: San Diego

Day: Tuesday
Date: 10/29/2019

PEAK HOURS

AM	08:00 AM - 09:00 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

Torreyana Rd — SOUTHBOUND

AM	3	4	0	0	111	AM
NOON	0	0	0	0	0	NOON
PM	71	38	0	0	10	PM

Callan Rd — EASTBOUND

AM	NOON	PM	
35	0	154	
0	0	0	0
80	0	4	0
0	0	0	1
84	0	22	0

Callan Rd — WESTBOUND

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

CONTROL

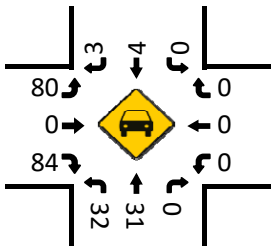
3-Way Stop(NB/SB/EB)

TEV	234 AM	0 NOON	224 PM
PHF	0.86		0.82

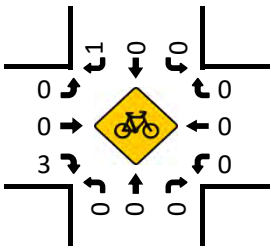
Torreyana Rd — NORTHBOUND

PM	60	0	83	6	0	PM
NOON	0	0	0	0	0	NOON
AM	88	0	32	31	0	AM

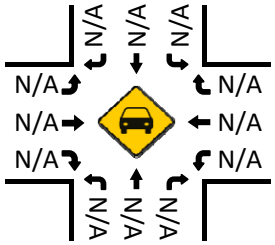
Total Vehicles (AM)



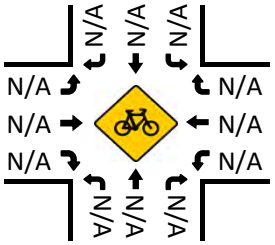
Bikes (AM)



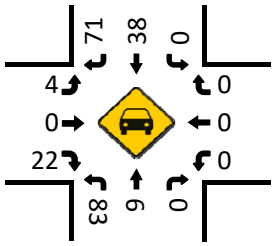
Total Vehicles (Noon)



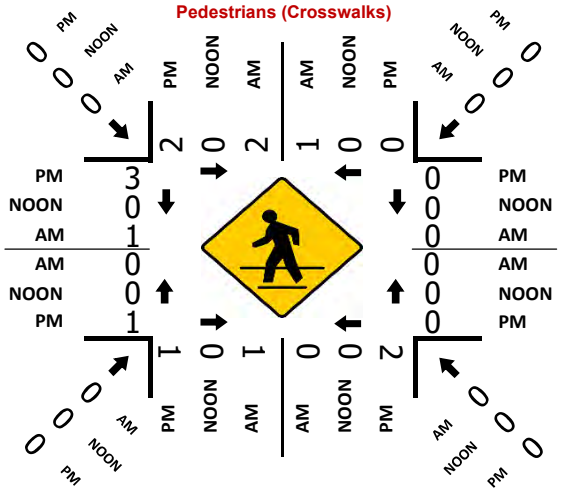
Bikes (NOON)



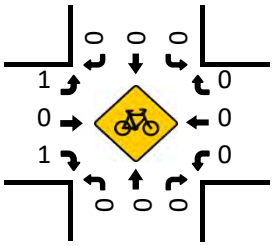
Total Vehicles (PM)



Pedestrians (Crosswalks)



Bikes (PM)



Prepared by National Data & Surveying Services

Torreyana Rd & Science Park Rd

Peak Hour Turning Movement Count

ID: 19-04420-002
City: San Diego

Day: Tuesday
Date: 10/29/2019

PEAK HOURS

AM: 08:00 AM - 09:00 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

Torreyana Rd — SOUTHBOUND

AM	60	0	34	0	208	AM
NOON	0	0	0	0	0	NOON
PM	157	0	2	0	123	PM

Science Park Rd — EASTBOUND

AM	NOON	PM	
78	0	350	⇦
1	0	1	↶ 0
202	0	88	↱ 0
234	0	23	→ 1
0	0	0	↷ 0

Science Park Rd — WESTBOUND

PM	NOON	AM	
35	0	6	0 ↶
192	0	17	1 ←
0	0	0	0 ↰
0	0	1	0 ↷
25	0	269	⇨

Torreyana Rd — NORTHBOUND

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

0	1	0	0

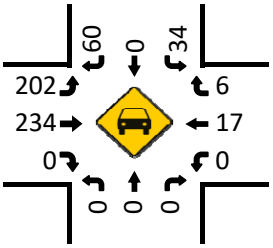
0	0	0	0

CONTROL

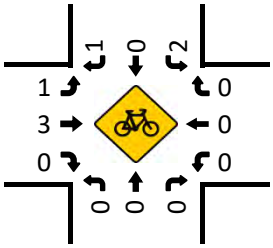
1-Way Stop(WB)

TEV	555 AM	0 NOON	498 PM
PHF	0.95		0.84

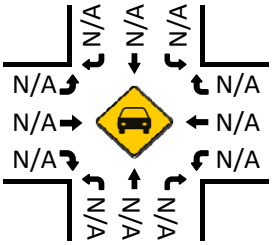
Total Vehicles (AM)



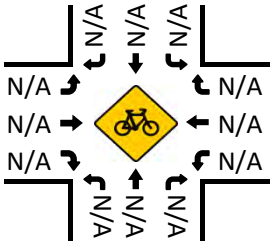
Bikes (AM)



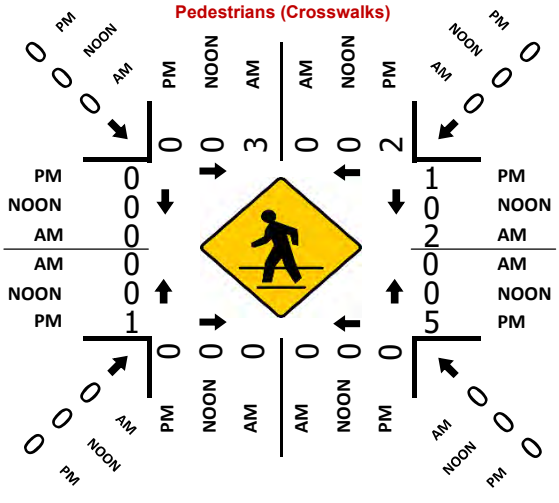
Total Vehicles (Noon)



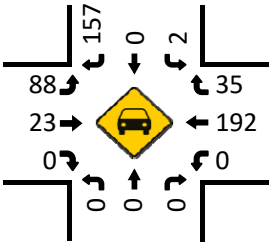
Bikes (NOON)



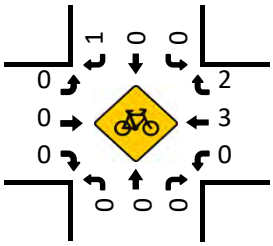
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Torrey Pines Rd & Science Park Rd

Peak Hour Turning Movement Count

ID: 19-04420-003
City: San Diego

Day: Tuesday
Date: 10/29/2019

PEAK HOURS

AM: 08:00 AM - 09:00 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

Torrey Pines Rd — SOUTHBOUND

AM	32	593	132	19	570	AM
NOON	0	0	0	0	0	NOON
PM	12	564	8	4	1017	PM

EASTBOUND — Science Park Rd

AM	NOON	PM	
94	0	70	
0	0	0	0
9	0	17	0.5
4	0	2	0.5
47	0	64	1
AM	NOON	PM	

WESTBOUND — Science Park Rd

PM	NOON	AM	
119	0	13	1
4	0	8	0.5
417	0	58	1.5
0	0	0	0
95	0	662	
PM	NOON	AM	

CONTROL

Signalized

TEV	2084 AM	0 NOON	2242 PM
PHF	0.89		0.95

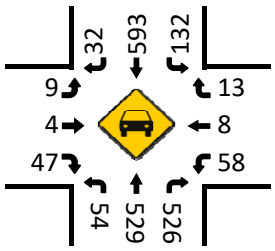
Turning movements at the intersection:

	1	3	1	0
	0	1	3	1

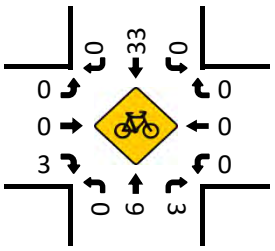
Torrey Pines Rd — NORTHBOUND

PM	1060	15	54	877	85	PM
NOON	0	0	0	0	0	NOON
AM	758	60	54	529	526	AM

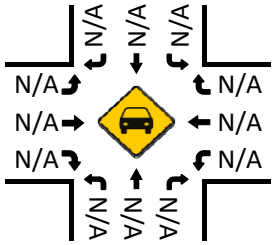
Total Vehicles (AM)



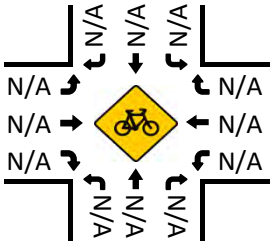
Bikes (AM)



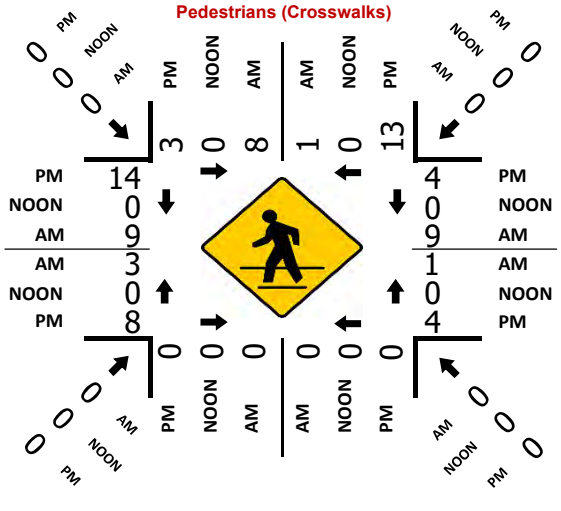
Total Vehicles (Noon)



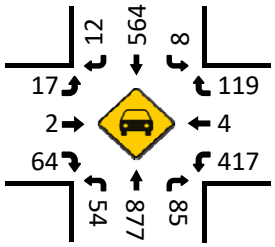
Bikes (NOON)



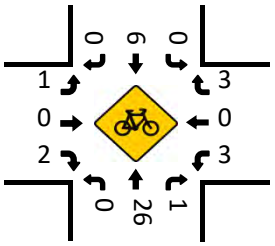
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Torrey Pines Rd & John J Hopkins Dr

Peak Hour Turning Movement Count

ID: 19-04420-004
City: San Diego

Day: Tuesday
Date: 10/29/2019

PEAK HOURS

AM: 08:00 AM - 09:00 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

SOUTHBOUND — Torrey Pines Rd

AM	56	504	113	18	1201	AM
NOON	0	0	0	0	0	NOON
PM	22	1101	16	39	1028	PM
	1	3	1	0		

EASTBOUND — John J Hopkins Dr

AM	NOON	PM	
192	0	70	
0	0	0	0
16	0	45	1
8	0	12	0.5
74	0	118	0.5

WESTBOUND — John J Hopkins Dr

PM	NOON	AM	
215	0	83	1
14	0	16	0.5
143	0	28	1.5
0	0	0	0
36	0	167	

CONTROL

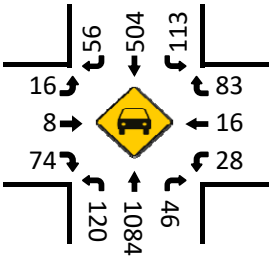
Signalized

TEV	2173 AM	0 NOON	2498 PM
PHF	0.92		0.95

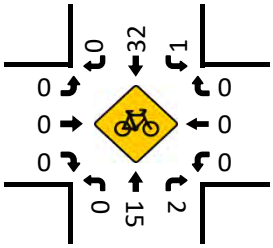
NORTHBOUND — Torrey Pines Rd

	0	1	3	1		
PM	1364	2	34	729	8	PM
NOON	0	0	0	0	0	NOON
AM	613	7	120	1084	46	AM

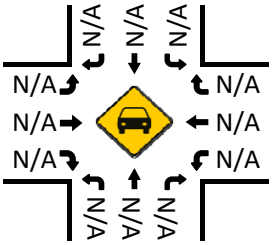
Total Vehicles (AM)



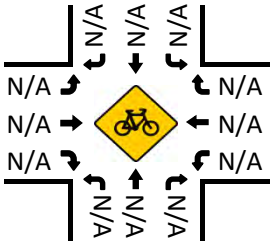
Bikes (AM)



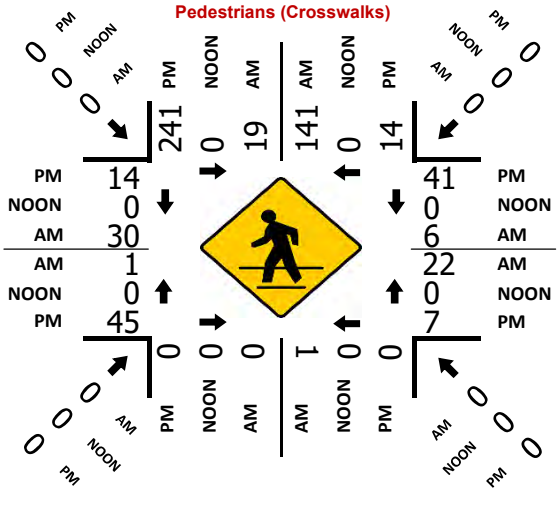
Total Vehicles (Noon)



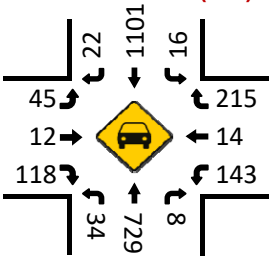
Bikes (NOON)



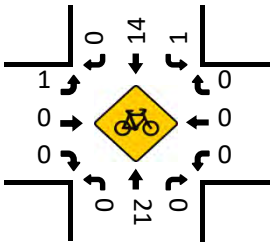
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Torrey Pines Rd & Scripps Clinic South Dwy

Peak Hour Turning Movement Count

ID: 19-04420-005
City: San Diego

Day: Tuesday
Date: 10/29/2019

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

Torrey Pines Rd — SOUTHBOUND

	Right	Through	Left	U-Turn	Departing (northbound)
AM	44	567	0	1	1241
NOON	0	0	0	0	0
PM	15	1349	0	2	774
Bikes	0	3	1	0	

Scripps Clinic South Dwy — EASTBOUND

	AM	NOON	PM	Bikes
Departing (westbound)	222	0	82	
U-Turn	0	0	0	0
Left	13	0	27	1
Through	0	0	0	0
Right	47	0	122	1

Scripps Clinic South Dwy — WESTBOUND

	PM	NOON	AM	Bikes
Right	0	0	0	0
Through	0	0	0	0
Left	0	0	0	0
U-Turn	0	0	0	0
Departing (eastbound)	0	0	0	

CONTROL

Signalized

	AM	NOON	PM
TEV	2143	0	2338
PHF	0.90		0.95

Torrey Pines Rd — NORTHBOUND

	Departing (southbound)	U-Turn	Left	Through	Right
Bikes		0	1	3	0
PM	1482	11	67	745	0
NOON	0	0	0	0	0
AM	680	66	178	1227	0

Total Vehicles (AM)

Approach	Left / U-Turn	Through	Right
Southbound	44 (right)	567	0
Eastbound	13	0	47
Westbound	0	0	0
Northbound	178	1227	0

Total Vehicles (Noon)

All movements: N/A

Total Vehicles (PM)

Approach	Left / U-Turn	Through	Right
Southbound	15 (right)	1349	0
Eastbound	27	0	122
Westbound	0	0	0
Northbound	67	745	0

Bikes (AM)

Approach			
Southbound	0	34	0
Eastbound	0	0	0
Westbound	0	0	0
Northbound	5	17	0

Bikes (NOON)

All movements: N/A

Bikes (PM)

Approach			
Southbound	1	13	0
Eastbound	1	0	1
Westbound	0	0	0
Northbound	0	19	0

Pedestrians (Crosswalks)

Crosswalk		AM	NOON	PM
North leg	westbound direction	0	0	0
North leg	eastbound direction	0	0	0
West leg	southbound direction	5	0	12
West leg	northbound direction	4	0	8
East leg	southbound direction	0	0	0
East leg	northbound direction	0	0	0
South leg	eastbound direction	0	0	2
South leg	westbound direction	11	0	3
NW diagonal		0	0	0
NE diagonal		0	0	0
SW diagonal		0	0	0
SE diagonal		0	0	0

Prepared by National Data & Surveying Services

I-5 SB Ramps & Genesee Ave

Peak Hour Turning Movement Count

ID: 19-04420-009
City: San Diego

Day: Tuesday
Date: 10/29/2019

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

SOUTHBOUND — I-5 SB Ramps

AM	1415	1	1406	0	0	AM
NOON	0	0	0	0	0	NOON
PM	334	2	386	0	0	PM
	2	0.5	1.5	0		

EASTBOUND — Genesee Ave

AM	NOON	PM	
3196	0	1029	
0	0	0	0
0	0	0	0
485	0	1787	5
177	0	793	2
AM	NOON	PM	

WESTBOUND — Genesee Ave

PM	NOON	AM	
0	0	0	0
695	0	1781	3
386	0	171	2
2	0	1	0
2175	0	1892	
PM	NOON	AM	

CONTROL

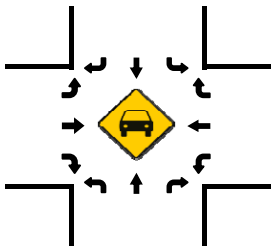
Signalized

TEV	5437	0	4385
	AM	NOON	PM
PHF	0.91		0.94

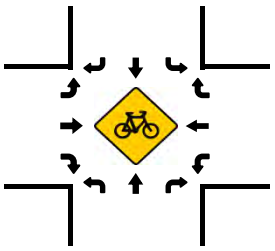
NORTHBOUND — I-5 SB Ramps

	0	0	0	0		
PM	1181	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	349	0	0	0	0	AM

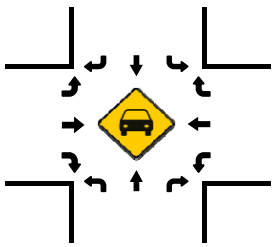
Total Vehicles (AM)



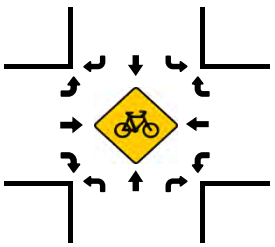
Bikes (AM)



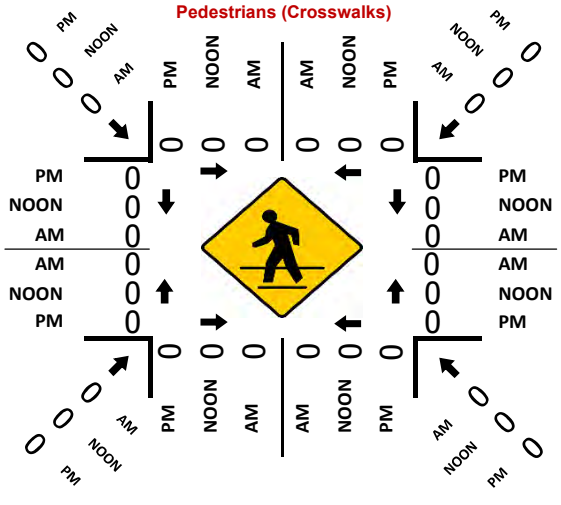
Total Vehicles (Noon)



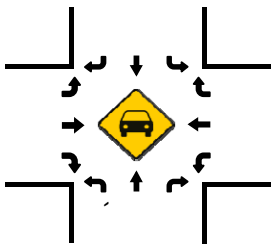
Bikes (NOON)



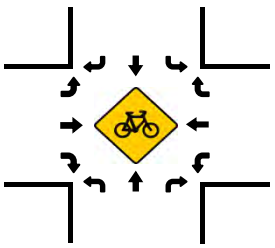
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

I-5 NB Ramps & Genesee Ave

Peak Hour Turning Movement Count

ID: 19-04420-010
City: San Diego

Day: Tuesday
Date: 10/29/2019

PEAK HOURS

AM: 07:30 AM - 08:30 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

I-5 NB Ramps — SOUTHBOUND

AM	0	0	0	0	776	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	2625	PM

Genesee Ave — EASTBOUND

AM	NOON	PM		
1881	0	1082	⇦	
0	0	1	↶	0
198	0	1212	↱	2
1645	0	964	→	3
0	0	0	↷	0
AM	NOON	PM		

CONTROL

Signalized

TEV	5287	0	4855
	AM	NOON	PM
PHF	0.92		0.94

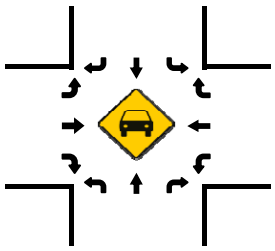
WESTBOUND — Genesee Ave

PM	NOON	AM		
1410	0	575	↰	2
782	0	649	←	5
0	0	0	↰	0
0	0	0	↶	0
1148	0	2630	⇨	
PM	NOON	AM		

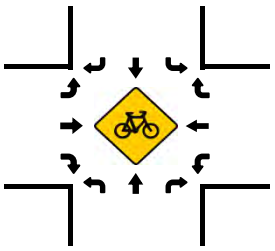
I-5 NB Ramps — NORTHBOUND

PM	0	0	299	3	184	PM
NOON	0	0	0	0	0	NOON
AM	0	0	1232	3	985	AM
		0	1.5	0	1.5	

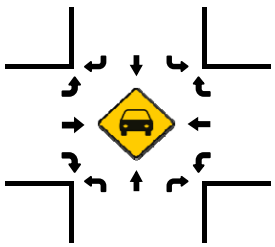
Total Vehicles (AM)



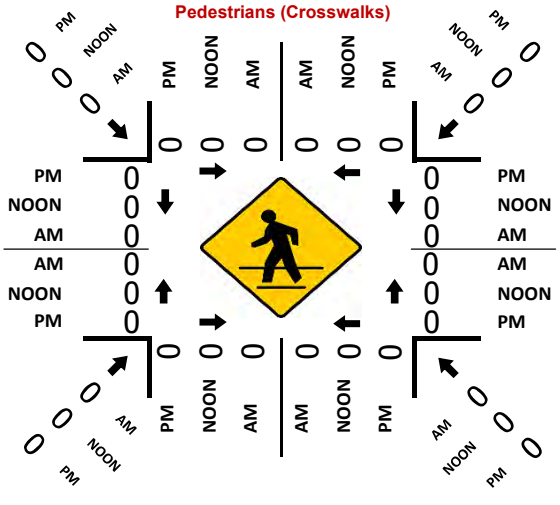
Bikes (AM)



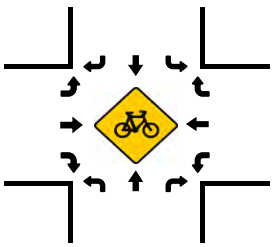
Total Vehicles (Noon)



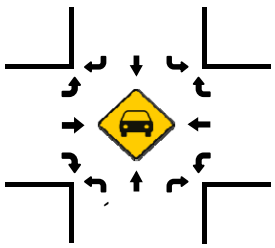
Pedestrians (Crosswalks)



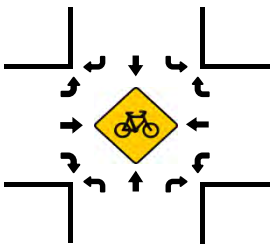
Bikes (NOON)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

VOLUME

Callan Rd Bet. N Torrey Pines Rd & Torreyana Rd

Day: Tuesday
Date: 10/29/2019

City: La Jolla
Project #: CA19_4418_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,183	1,150	2,333

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			0		0		0		12:00			17		22		39	
00:15			1		0		1		12:15			23		22		45	
00:30			1		1		2		12:30			20		13		33	
00:45			0	2	0	1	0	3	12:45			17	77	19	76	36	153
01:00			0		0		0		13:00			17		16		33	
01:15			1		0		1		13:15			19		17		36	
01:30			0		0		0		13:30			18		27		45	
01:45			1	2	0		1	2	13:45			15	69	25	85	40	154
02:00			0		0		0		14:00			18		19		37	
02:15			1		0		1		14:15			12		26		38	
02:30			0		1		1		14:30			11		18		29	
02:45			0	1	1	2	1	3	14:45			14	55	21	84	35	139
03:00			1		1		2		15:00			9		29		38	
03:15			0		1		1		15:15			12		36		48	
03:30			0		0		0		15:30			14		40		54	
03:45			1	2	0	2	1	4	15:45			17	52	39	144	56	196
04:00			0		0		0		16:00			21		34		55	
04:15			0		3		3		16:15			26		49		75	
04:30			1		0		1		16:30			20		39		59	
04:45			5	6	0	3	5	9	16:45			18	85	43	165	61	250
05:00			2		2		4		17:00			10		45		55	
05:15			10		0		10		17:15			14		44		58	
05:30			3		2		5		17:30			18		48		66	
05:45			7	22	3	7	10	29	17:45			11	53	32	169	43	222
06:00			12		3		15		18:00			14		26		40	
06:15			12		2		14		18:15			10		29		39	
06:30			19		6		25		18:30			10		23		33	
06:45			27	70	4	15	31	85	18:45			9	43	10	88	19	131
07:00			32		9		41		19:00			3		16		19	
07:15			21		5		26		19:15			6		18		24	
07:30			30		8		38		19:30			3		12		15	
07:45			48	131	6	28	54	159	19:45			1	13	5	51	6	64
08:00			37		4		41		20:00			1		5		6	
08:15			55		10		65		20:15			1		5		6	
08:30			48		15		63		20:30			2		6		8	
08:45			60	200	10	39	70	239	20:45			1	5	2	18	3	23
09:00			43		16		59		21:00			0		3		3	
09:15			26		7		33		21:15			2		5		7	
09:30			31		3		34		21:30			0		0		0	
09:45			23	123	6	32	29	155	21:45			1	3	2	10	3	13
10:00			19		10		29		22:00			4		0		4	
10:15			12		14		26		22:15			0		2		2	
10:30			22		14		36		22:30			0		1		1	
10:45			21	74	10	48	31	122	22:45			2	6	2	5	4	11
11:00			21		8		29		23:00			0		0		0	
11:15			21		19		40		23:15			0		1		1	
11:30			26		32		58		23:30			0		2		2	
11:45			21	89	16	75	37	164	23:45			0		0	3	0	3
TOTALS				722		252		**974**	**TOTALS**				461		898		**1359**
SPLIT %				74.1%		25.9%		**41.7%**	**SPLIT %**				33.9%		66.1%		**58.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,183	1,150	2,333

AM Peak Hour			08:15	11:30	**08:15**	**PM Peak Hour**			16:00	16:45	**16:00**
AM Pk Volume			206	92	**257**	**PM Pk Volume**			85	180	**250**
Pk Hr Factor			0.858	0.719	**0.918**	**Pk Hr Factor**			0.817	0.938	**0.833**
7 - 9 Volume	0	0	331	67	**398**	**4 - 6 Volume**	0	0	138	334	**472**
7 - 9 Peak Hour			08:00	08:00	**08:00**	**4 - 6 Peak Hour**			16:00	16:45	**16:00**
7 - 9 Pk Volume	0	0	200	39	**239**	**4 - 6 Pk Volume**	0	0	85	180	**250**
Pk Hr Factor	0.000	0.000	0.833	0.650	**0.854**	**Pk Hr Factor**	0.000	0.000	0.817	0.938	**0.833**

Prepared by National Data & Surveying Services

VOLUME

Science Park Rd Bet. N Torrey Pines Rd & Torreyana Rd

Day: Tuesday
Date: 10/29/2019

City: La Jolla
Project #: CA19_4418_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,877	3,288	6,165

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			0		1		1		12:00			45		71		116	
00:15			0		2		2		12:15			32		56		88	
00:30			1		2		3		12:30			30		47		77	
00:45			0	1	2	7	2	8	12:45			54	161	37	211	91	372
01:00			1		5		6		13:00			44		54		98	
01:15			1		3		4		13:15			45		42		87	
01:30			1		6		7		13:30			30		51		81	
01:45			0	3	3	17	3	20	13:45			27	146	41	188	68	334
02:00			0		0		0		14:00			25		72		97	
02:15			0		1		1		14:15			30		68		98	
02:30			0		0		0		14:30			19		94		113	
02:45			1	1	0	1	1	2	14:45			23	97	79	313	102	410
03:00			2		0		2		15:00			20		79		99	
03:15			0		0		0		15:15			13		69		82	
03:30			5		1		6		15:30			26		75		101	
03:45			1	8	0	1	1	9	15:45			21	80	86	309	107	389
04:00			2		0		2		16:00			22		122		144	
04:15			5		0		5		16:15			19		126		145	
04:30			11		0		11		16:30			29		104		133	
04:45			23	41	1	1	24	42	16:45			27	97	129	481	156	578
05:00			11		2		13		17:00			28		167		195	
05:15			13		2		15		17:15			36		138		174	
05:30			26		2		28		17:30			19		104		123	
05:45			46	96	14	20	60	116	17:45			10	93	69	478	79	571
06:00			47		16		63		18:00			13		93		106	
06:15			41		10		51		18:15			13		99		112	
06:30			47		10		57		18:30			6		53		59	
06:45			74	209	17	53	91	262	18:45			8	40	50	295	58	335
07:00			66		18		84		19:00			7		58		65	
07:15			76		14		90		19:15			2		34		36	
07:30			87		15		102		19:30			0		28		28	
07:45			123	352	20	67	143	419	19:45			6	15	19	139	25	154
08:00			149		27		176		20:00			5		17		22	
08:15			129		34		163		20:15			2		16		18	
08:30			175		29		204		20:30			2		15		17	
08:45			164	617	37	127	201	744	20:45			1	10	4	52	5	62
09:00			144		40		184		21:00			2		4		6	
09:15			131		48		179		21:15			3		5		8	
09:30			93		23		116		21:30			0		5		5	
09:45			85	453	31	142	116	595	21:45			1	6	5	19	6	25
10:00			61		37		98		22:00			0		6		6	
10:15			49		37		86		22:15			1		3		4	
10:30			27		37		64		22:30			0		2		2	
10:45			40	177	37	148	77	325	22:45			2	3	4	15	6	18
11:00			30		41		71		23:00			0		3		3	
11:15			42		49		91		23:15			3		5		8	
11:30			44		53		97		23:30			3		4		7	
11:45			49	165	48	191	97	356	23:45			0	6	1	13	1	19
TOTALS				2123		775		**2898**	**TOTALS**				754		2513		**3267**
SPLIT %				73.3%		26.7%		**47.0%**	**SPLIT %**				23.1%		76.9%		**53.0%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	2,877	3,288	6,165

AM Peak Hour			08:00	11:30	**08:30**	**PM Peak Hour**			12:30	16:30	**16:30**
AM Pk Volume			617	228	**768**	**PM Pk Volume**			173	538	**658**
Pk Hr Factor			0.881	0.803	**0.941**	**Pk Hr Factor**			0.801	0.805	**0.844**
7 - 9 Volume	0	0	969	194	**1163**	**4 - 6 Volume**	0	0	190	959	**1149**
7 - 9 Peak Hour			08:00	08:00	**08:00**	**4 - 6 Peak Hour**			16:30	16:30	**16:30**
7 - 9 Pk Volume	0	0	617	127	**744**	**4 - 6 Pk Volume**	0	0	120	538	**658**
Pk Hr Factor	0.000	0.000	0.881	0.858	**0.912**	**Pk Hr Factor**	0.000	0.000	0.833	0.805	**0.844**

Prepared by National Data & Surveying Services

VOLUME

N Torrey Pines Rd Bet. Callan Rd & Science Park Rd

Day: Tuesday
Date: 10/29/2019

City: La Jolla
Project #: CA19_4418_005

DAILY TOTALS	NB	SB	EB	WB	Total
	7,813	7,574	0	0	15,387

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	4		8				12		12:00	135		138				273	
00:15	4		6				10		12:15	100		138				238	
00:30	6		4				10		12:30	111		129				240	
00:45	5	19	3	21			8	40	12:45	107	453	125	530			232	983
01:00	2		3				5		13:00	98		137				235	
01:15	2		2				4		13:15	130		125				255	
01:30	0		3				3		13:30	102		171				273	
01:45	4	8	2	10			6	18	13:45	113	443	132	565			245	1008
02:00	1		2				3		14:00	108		140				248	
02:15	2		1				3		14:15	141		139				280	
02:30	3		1				4		14:30	169		139				308	
02:45	1	7	3	7			4	14	14:45	162	580	155	573			317	1153
03:00	2		2				4		15:00	189		148				337	
03:15	4		0				4		15:15	182		118				300	
03:30	6		1				7		15:30	200		177				377	
03:45	12	24	0	3			12	27	15:45	202	773	129	572			331	1345
04:00	7		7				14		16:00	238		153				391	
04:15	10		2				12		16:15	249		151				400	
04:30	13		6				19		16:30	239		152				391	
04:45	31	61	8	23			39	84	16:45	229	955	154	610			383	1565
05:00	15		13				28		17:00	238		139				377	
05:15	23		13				36		17:15	237		152				389	
05:30	39		15				54		17:30	197		155				352	
05:45	48	125	17	58			65	183	17:45	166	838	111	557			277	1395
06:00	43		32				75		18:00	172		155				327	
06:15	51		55				106		18:15	119		121				240	
06:30	77		56				133		18:30	97		126				223	
06:45	102	273	83	226			185	499	18:45	65	453	86	488			151	941
07:00	89		87				176		19:00	54		53				107	
07:15	98		122				220		19:15	46		53				99	
07:30	106		168				274		19:30	32		41				73	
07:45	105	398	192	569			297	967	19:45	17	149	33	180			50	329
08:00	104		168				272		20:00	27		49				76	
08:15	138		188				326		20:15	23		34				57	
08:30	135		198				333		20:30	31		30				61	
08:45	166	543	194	748			360	1291	20:45	22	103	19	132			41	235
09:00	148		185				333		21:00	19		21				40	
09:15	121		152				273		21:15	21		22				43	
09:30	133		138				271		21:30	18		14				32	
09:45	122	524	112	587			234	1111	21:45	19	77	24	81			43	158
10:00	111		98				209		22:00	28		21				49	
10:15	100		115				215		22:15	15		27				42	
10:30	106		111				217		22:30	11		12				23	
10:45	100	417	117	441			217	858	22:45	9	63	11	71			20	134
11:00	140		114				254		23:00	8		13				21	
11:15	127		122				249		23:15	3		9				12	
11:30	109		114				223		23:30	4		14				18	
11:45	129	505	130	480			259	985	23:45	7	22	6	42			13	64
TOTALS		2904		3173				6077	TOTALS		4909		4401				9310
SPLIT %		47.8%		52.2%				39.5%	SPLIT %		52.7%		47.3%				60.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	7,813	7,574	0	0	15,387

AM Peak Hour	08:15	08:15			08:15	PM Peak Hour	16:00	15:30			16:00
AM Pk Volume	587	765			1352	PM Pk Volume	955	610			1565
Pk Hr Factor	0.884	0.966			0.939	Pk Hr Factor	0.959	0.862			0.978
7 - 9 Volume	941	1317	0	0	2258	4 - 6 Volume	1793	1167	0	0	2960
7 - 9 Peak Hour	08:00	08:00			08:00	4 - 6 Peak Hour	16:00	16:00			16:00
7 - 9 Pk Volume	543	748	0	0	1291	4 - 6 Pk Volume	955	610	0	0	1565
Pk Hr Factor	0.818	0.944	0.000	0.000	0.897	Pk Hr Factor	0.959	0.990	0.000	0.000	0.978

Prepared by National Data & Surveying Services

VOLUME

Torreyana Rd Bet. Callan Rd & Science Park Rd

Day: Tuesday
Date: 10/29/2019

City: La Jolla
Project #: CA19_4418_003

DAILY TOTALS	NB	SB	EB	WB	Total
	1,338	1,734	0	0	3,072

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	0		1						1		12:00	26		35						61	
00:15	0		0						0		12:15	21		26						47	
00:30	0		0						0		12:30	24		38						62	
00:45	0		1	2					1	2	12:45	24	95	24	123					48	218
01:00	1		0						1		13:00	18		36						54	
01:15	0		1						1		13:15	15		31						46	
01:30	0		1						1		13:30	11		30						41	
01:45	1	2	3	5					4	7	13:45	18	62	26	123					44	185
02:00	0		0						0		14:00	20		35						55	
02:15	0		0						0		14:15	26		22						48	
02:30	0		0						0		14:30	22		29						51	
02:45	0		0						0		14:45	21	89	28	114					49	203
03:00	0		0						0		15:00	15		27						42	
03:15	2		2						4		15:15	30		22						52	
03:30	0		0						0		15:30	32		22						54	
03:45	3	5	1	3					4	8	15:45	30	107	12	83					42	190
04:00	1		0						1		16:00	26		38						64	
04:15	0		0						0		16:15	41		44						85	
04:30	0		1						1		16:30	54		30						84	
04:45	1	2	1	2					2	4	16:45	41	162	32	144					73	306
05:00	4		2						6		17:00	43		52						95	
05:15	6		4						10		17:15	36		34						70	
05:30	12		9						21		17:30	24		34						58	
05:45	18	40	13	28					31	68	17:45	20	123	26	146					46	269
06:00	24		20						44		18:00	24		41						65	
06:15	13		14						27		18:15	15		39						54	
06:30	17		15						32		18:30	7		22						29	
06:45	30	84	30	79					60	163	18:45	8	54	21	123					29	177
07:00	16		38						54		19:00	11		15						26	
07:15	22		27						49		19:15	3		38						41	
07:30	18		27						45		19:30	1		25						26	
07:45	25	81	32	124					57	205	19:45	0	15	13	91					13	106
08:00	33		38						71		20:00	3		12						15	
08:15	26		39						65		20:15	4		4						8	
08:30	40		44						84		20:30	0		6						6	
08:45	31	130	46	167					77	297	20:45	1	8	5	27					6	35
09:00	37		37						74		21:00	0		2						2	
09:15	17		26						43		21:15	3		6						9	
09:30	26		30						56		21:30	0		0						0	
09:45	19	99	26	119					45	218	21:45	0	3	1	9					1	12
10:00	19		29						48		22:00	0		3						3	
10:15	16		15						31		22:15	1		1						2	
10:30	12		14						26		22:30	0		1						1	
10:45	17	64	28	86					45	150	22:45	1	2	3	8					4	10
11:00	11		24						35		23:00	0		0						0	
11:15	28		27						55		23:15	1		0						1	
11:30	37		37						74		23:30	0		1						1	
11:45	34	110	39	127					73	237	23:45	0	1	0	1					0	2
TOTALS		617		742						1359	TOTALS		721		992						1713
SPLIT %		45.4%		54.6%						44.2%	SPLIT %		42.1%		57.9%						55.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	1,338	1,734	0	0	3,072

AM Peak Hour	08:15	08:00			08:15	PM Peak Hour	16:15	16:15			16:15
AM Pk Volume	134	167			300	PM Pk Volume	179	158			337
Pk Hr Factor	0.838	0.908			0.893	Pk Hr Factor	0.829	0.760			0.887
7 - 9 Volume	211	291	0	0	502	4 - 6 Volume	285	290	0	0	575
7 - 9 Peak Hour	08:00	08:00			08:00	4 - 6 Peak Hour	16:15	16:15			16:15
7 - 9 Pk Volume	130	167	0	0	297	4 - 6 Pk Volume	179	158	0	0	337
Pk Hr Factor	0.813	0.908	0.000	0.000	0.884	Pk Hr Factor	0.829	0.760	0.000	0.000	0.887

Prepared by National Data & Surveying Services

N Torrey Pines Rd & Ambrx Dwy N

Peak Hour Turning Movement Count

ID: 19-04421-001
City: San Diego

Day: Tuesday
Date: 10/29/2019

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

N Torrey Pines Rd — SOUTHBOUND

AM	0	0	0	0	3	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	14	PM

Ambrx Dwy N — EASTBOUND

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

Ambrx Dwy N — WESTBOUND

PM	NOON	AM	
14	0	3	0
0	0	0	1
0	0	0	0
0	0	0	0
1	0	21	
PM	NOON	AM	

N Torrey Pines Rd — NORTHBOUND

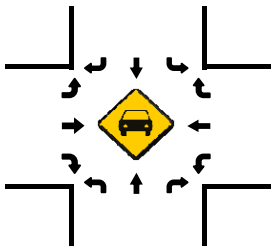
PM	0	0	0	0	1	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	21	AM

	0	3	0	0
	0	0	0	3

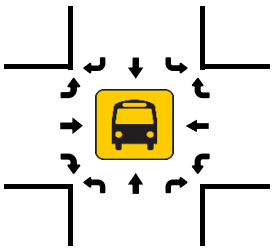
CONTROL: No Control

TEV	24	0	15
	AM	NOON	PM
PHF	0.86		0.63

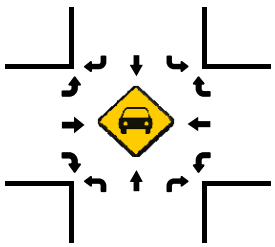
Total Vehicles (AM)



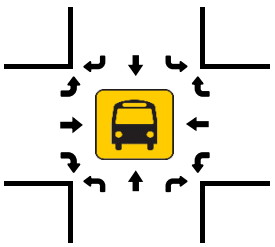
Total Vehicles (AM)



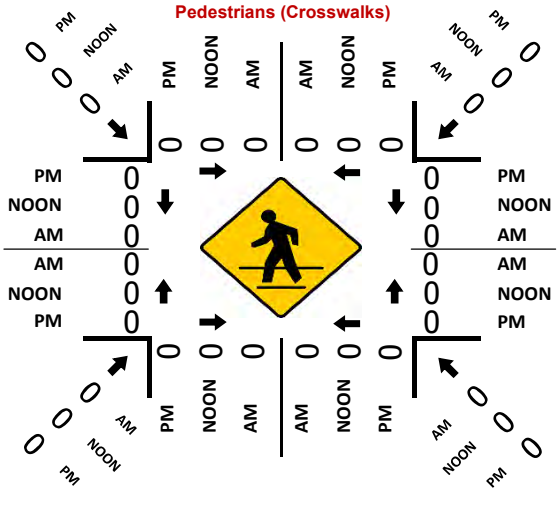
Total Vehicles (NOON)



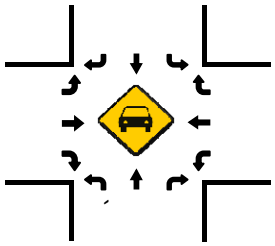
Total Vehicles (NOON)



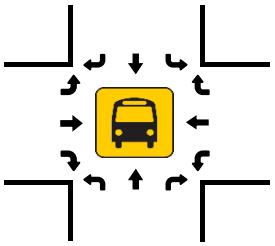
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

N Torrey Pines Rd & Ambrx Dwy S

Peak Hour Turning Movement Count

ID: 19-04421-002
City: San Diego

Day: Tuesday
Date: 10/29/2019

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

N Torrey Pines Rd — SOUTHBOUND

	Right	Thru	Left	U-Turn	Departing
AM	0	0	0	0	2
NOON	0	0	0	0	0
PM	0	0	0	0	11
Peak	0	3	0	0	

Ambrx Dwy S — EASTBOUND

	Peak	AM	NOON	PM
Departing		0	0	0
U-Turn	0	0	0	0
Left	0	0	0	0
Thru	0	0	0	0
Right	0	0	0	0

Ambrx Dwy S — WESTBOUND

	Peak	PM	NOON	AM
Right	0	11	0	2
Thru	1	0	0	0
Left	0	0	0	0
U-Turn	0	0	0	0
Departing		3	0	23

N Torrey Pines Rd — NORTHBOUND

	Departing	U-Turn	Left	Thru	Right
Peak		0	0	3	0
PM	0	0	0	0	3
NOON	0	0	0	0	0
AM	0	0	0	0	23

CONTROL

No Control

	AM	NOON	PM
TEV	25	0	14
PHF	0.69		0.70

Total Vehicles (AM)

Total Vehicles (NOON)

Total Vehicles (PM)

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg (west side)	0	0	0
North leg (east side)	0	0	0
West leg (north side)	0	0	0
West leg (south side)	0	0	0
East leg (north side)	0	0	0
East leg (south side)	0	0	0
South leg (west side)	0	0	0
South leg (east side)	0	0	0
NW diagonal	0	0	0
NE diagonal	0	0	0
SW diagonal	0	0	0
SE diagonal	0	0	0

Prepared by National Data & Surveying Services

Ambrx Dwy & Science Park Rd

Peak Hour Turning Movement Count

ID: 19-04421-003
City: San Diego

Day: Tuesday
Date: 10/29/2019

PEAK HOURS

AM	08:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 05:00 PM

COUNT PERIODS

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

Ambrx Dwy — SOUTHBOUND

AM	2	0	1	0	45	AM
NOON	0	0	0	0	0	NOON
PM	29	0	5	0	9	PM
	0	1	0	0		

Science Park Rd — EASTBOUND

AM	NOON	PM	
2	0	29	
0	0	0	0
37	0	9	0
0	0	0	2
0	0	0	0
AM	NOON	PM	

Science Park Rd — WESTBOUND

PM	NOON	AM	
0	0	8	1
0	0	0	0.5
0	0	0	1.5
0	0	0	0
5	0	1	
PM	NOON	AM	

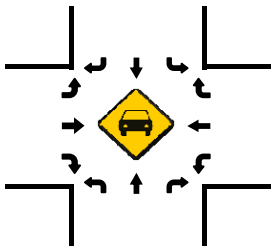
CONTROL: No control

TEV	48	0	43
	AM	NOON	PM
PHF	0.71		0.67

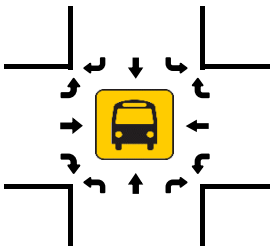
Ambrx Dwy — NORTHBOUND

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

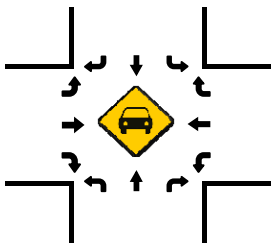
Total Vehicles (AM)



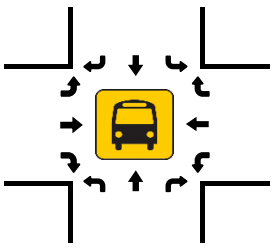
Total Vehicles (AM)



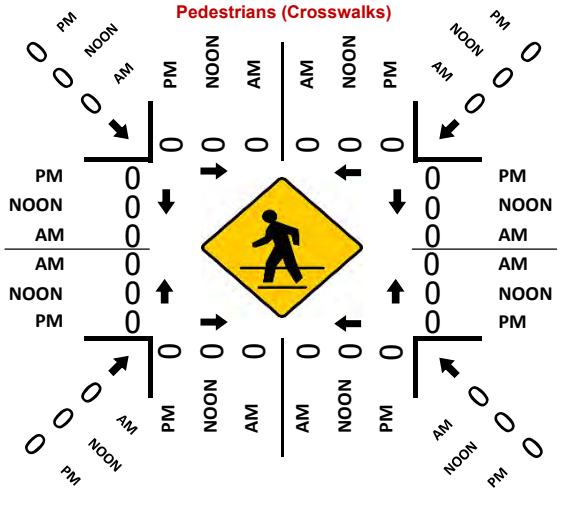
Total Vehicles (NOON)



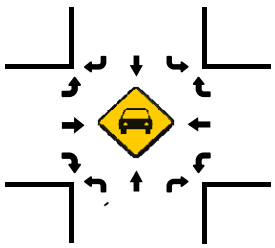
Total Vehicles (NOON)



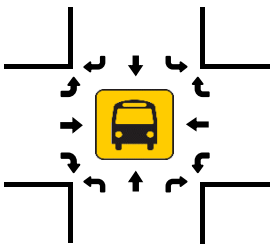
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

Shipping & Receiving 3010 W Dwy & Science Park Rd

Peak Hour Turning Movement Count

ID: 19-04421-004
City: San Diego

Day: Tuesday
Date: 10/29/2019

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

Shipping & Receiving 3010 W Dwy — SOUTHBOUND

AM	3	0	2	0	21	AM
NOON	0	0	0	0	0	NOON
PM	20	0	1	0	5	PM

Science Park Rd — EASTBOUND

AM	NOON	PM	
3	0	20	
0	0	0	0
21	0	5	0
0	0	0	1
0	0	0	0
AM	NOON	PM	

Science Park Rd — WESTBOUND

PM	NOON	AM	
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
1	0	2	
PM	NOON	AM	

CONTROL

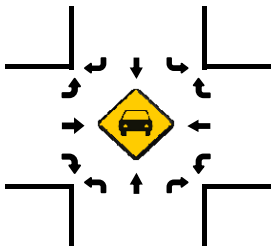
No Control

TEV	26	0	26
	AM	NOON	PM
PHF	0.81		0.65

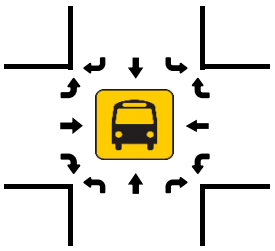
Shipping & Receiving 3010 W Dwy — NORTHBOUND

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

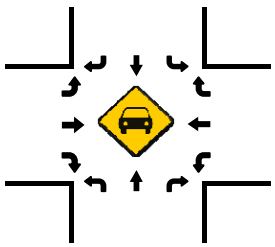
Total Vehicles (AM)



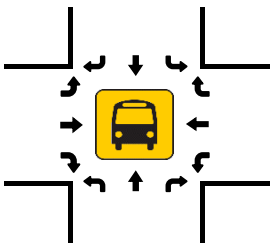
Total Vehicles (AM)



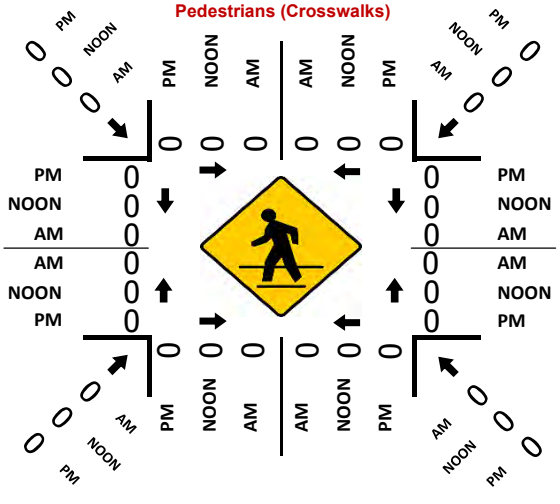
Total Vehicles (NOON)



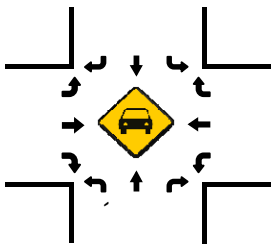
Total Vehicles (NOON)



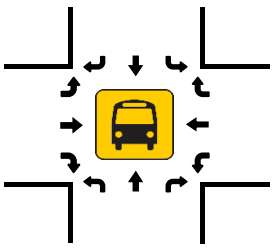
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

Shipping & Receiving 3010 E Dwy & Science Park Rd

Peak Hour Turning Movement Count

ID: 19-04421-005
City: San Diego

Day: Tuesday
Date: 10/29/2019

PEAK HOURS	
AM	07:45 AM - 08:45 AM
NOON	NONE
PM	04:00 PM - 05:00 PM

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

Shipping & Receiving 3010 E Dwy — SOUTHBOUND

AM	4	0	0	0	11	AM
NOON	0	0	0	0	0	NOON
PM	15	0	1	0	1	PM

Science Park Rd — EASTBOUND

AM	NOON	PM	
4	0	15	⇦
0	0	0	↶ 0
11	0	1	↱ 0
0	0	0	→ 1
0	0	0	↴ 0
AM	NOON	PM	

Science Park Rd — WESTBOUND

PM	NOON	AM	
0	0	0	0 ↰
0	0	0	1 ←
0	0	0	0 ↰
0	0	0	0 ↰
1	0	0	⇨
PM	NOON	AM	

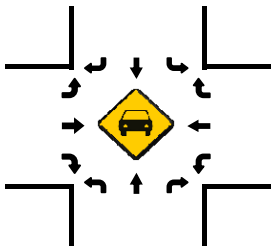
CONTROL: No Control

TEV	15 AM	0 NOON	17 PM
PHF	0.75		0.53

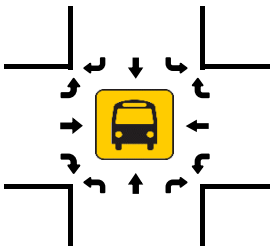
Shipping & Receiving 3010 E Dwy — NORTHBOUND

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

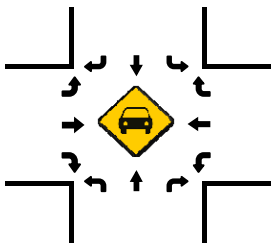
Total Vehicles (AM)



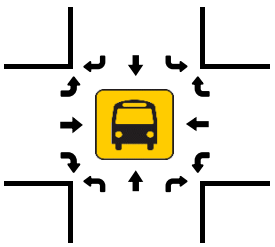
Total Vehicles (AM)



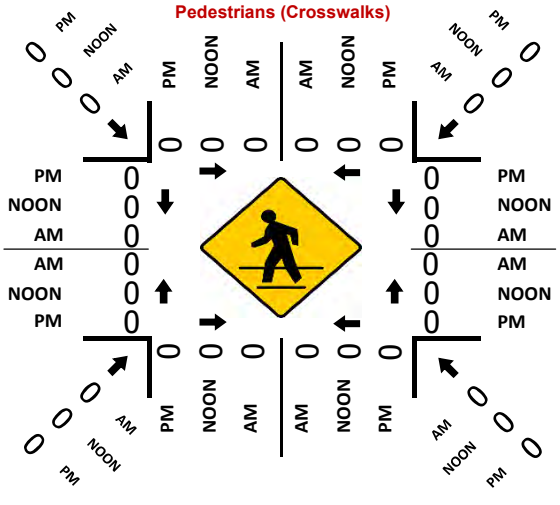
Total Vehicles (NOON)



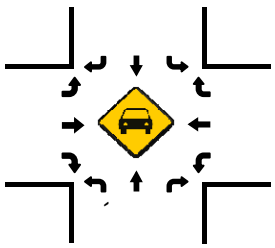
Total Vehicles (NOON)



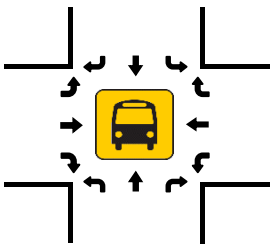
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

Torreyana Rd & Alexandria S Dwy

Peak Hour Turning Movement Count

ID: 19-04421-006
City: San Diego

Day: Tuesday
Date: 10/29/2019

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

Torreyana Rd — SOUTHBOUND

AM	9	0	0	0	12	AM
NOON	0	0	0	0	0	NOON
PM	17	0	0	0	8	PM

Alexandria S Dwy — EASTBOUND

AM	NOON	PM		
43	0	64	⇦	
0	0	0	↶	0
12	0	8	↱	0
0	0	0	→	1
21	0	38	↴	0
AM	NOON	PM		

CONTROL

No Control

TEV	76	0	110
	AM	NOON	PM
PHF	0.86		0.65

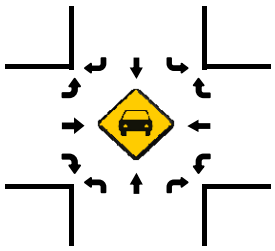
Alexandria S Dwy — WESTBOUND

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

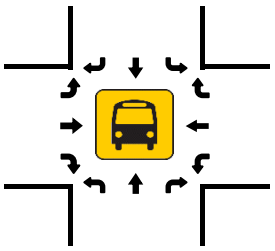
Torreyana Rd — NORTHBOUND

PM	38	0	47	0	0	PM
NOON	0	0	0	0	0	NOON
AM	21	0	34	0	0	AM

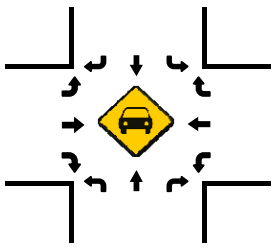
Total Vehicles (AM)



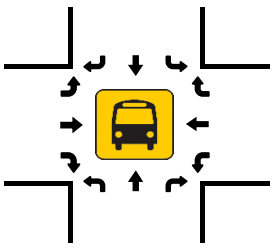
Total Vehicles (AM)



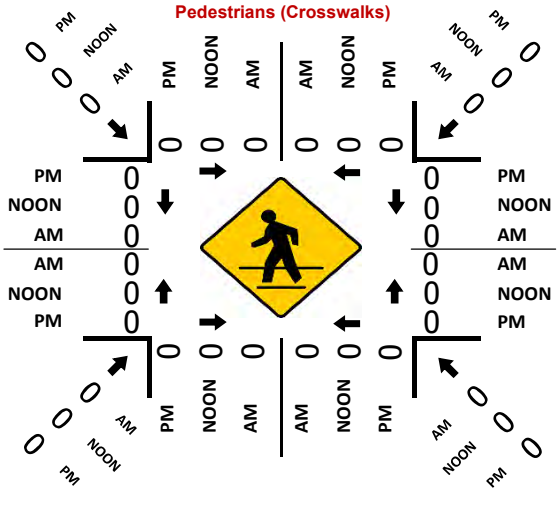
Total Vehicles (NOON)



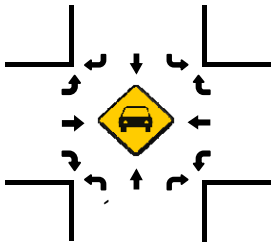
Total Vehicles (NOON)



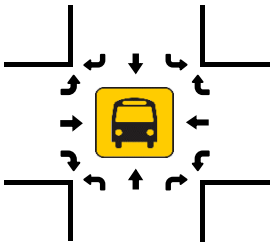
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

Torreyana Rd & Alexandria N Dwy

Peak Hour Turning Movement Count

ID: 19-04421-007
City: San Diego

Day: Tuesday
Date: 10/29/2019

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

SOUTHBOUND — Torreyana Rd

AM	3	0	0	0	2	AM
NOON	0	0	0	0	0	NOON
PM	4	0	0	0	3	PM

EASTBOUND — Alexandria N Dwy

AM	NOON	PM	
26	0	20	⇦
0	0	0	↰ 0
2	0	3	↱ 0
0	0	0	→ 1
6	0	16	↱ 0
AM	NOON	PM	

WESTBOUND — Alexandria N Dwy

PM	NOON	AM	
0	0	0	↰ 0
0	0	0	← 0
0	0	0	↰ 0
0	0	0	↰ 0
0	0	0	⇨
PM	NOON	AM	

NORTHBOUND — Torreyana Rd

PM	16	0	16	0	0	PM
NOON	0	0	0	0	0	NOON
AM	6	0	23	0	0	AM

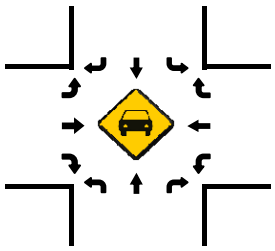
	↰	←	↑	↱
	0	0	1	0

CONTROL

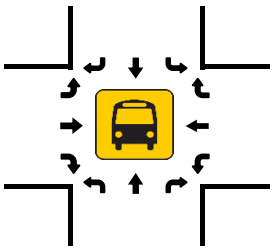
No Control

TEV	34 AM	0 NOON	39 PM
PHF	0.71		0.70

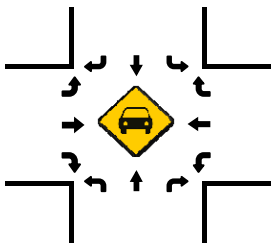
Total Vehicles (AM)



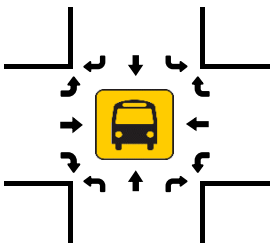
Total Vehicles (AM)



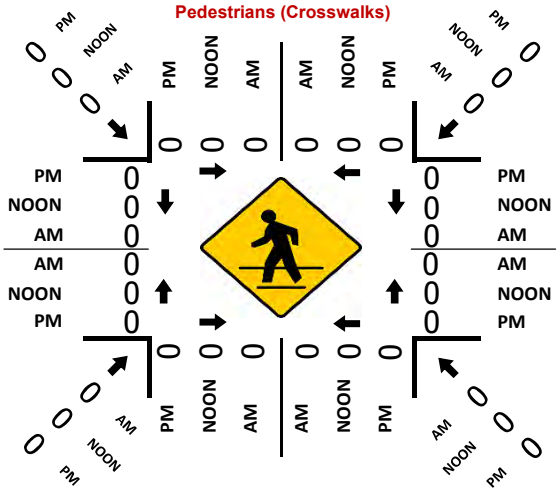
Total Vehicles (NOON)



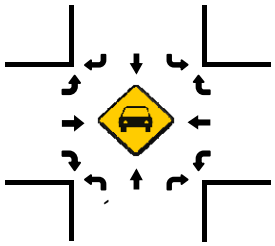
Total Vehicles (NOON)



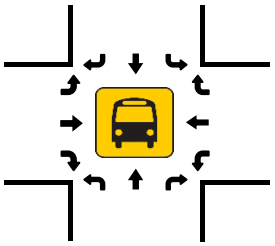
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

Alexandria Existing Dwy & Callan Rd

Peak Hour Turning Movement Count

ID: 19-04421-008
City: San Diego

Day: Tuesday
Date: 10/29/2019

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

Alexandria Existing Dwy — SOUTHBOUND

	Right	Through	Left	U-Turn	Exit
AM	0	0	0	0	0
NOON	0	0	0	0	0
PM	0	0	0	0	0
(red)	0	0	0	0	

Callan Rd — EASTBOUND

	AM	NOON	PM	(red)
Exit	5	0	23	
U-Turn	0	0	0	0
Left	0	0	0	0
Through	0	0	0	1
Right	40	0	25	0

Callan Rd — WESTBOUND

	(red)	PM	NOON	AM
Right	0	0	0	0
Through	1	0	0	0
Left	0	6	0	1
U-Turn	0	0	0	0
Exit		2	0	2

CONTROL

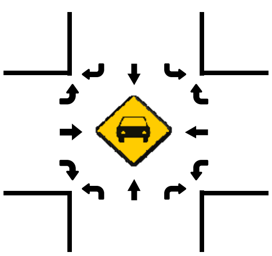
No Control

	AM	NOON	PM
TEV	48	0	56
PHF	0.63		0.88

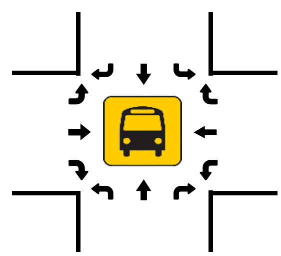
Alexandria Existing Dwy — NORTHBOUND

	Exit	U-Turn	Left	Through	Right
(red)		0	0	1	0
PM	31	0	23	0	2
NOON	0	0	0	0	0
AM	41	0	5	0	2

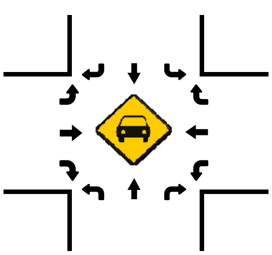
Total Vehicles (AM)



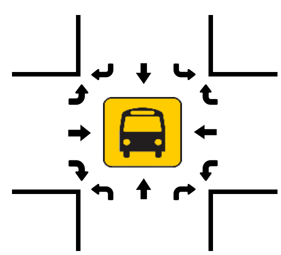
Total Vehicles (AM)



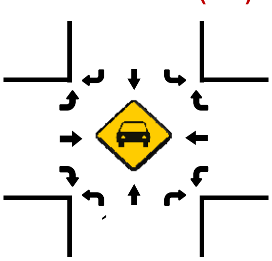
Total Vehicles (NOON)



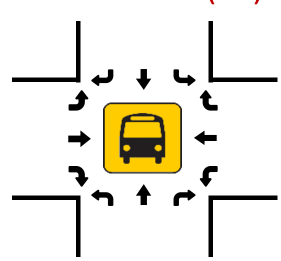
Total Vehicles (NOON)



Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg (west side)	0	0	0
North leg (east side)	0	0	0
West leg (north side)	0	0	0
West leg (south side)	0	0	0
East leg (north side)	0	0	0
East leg (south side)	0	0	0
South leg (west side)	0	0	0
South leg (east side)	0	0	0
NW diagonal	0	0	0
NE diagonal	0	0	0
SW diagonal	0	0	0
SE diagonal	0	0	0

Prepared by National Data & Surveying Services

IN & OUT

Ambrx N Dwy @ N Torrey Pines Rd

Day: Tuesday
Date: 10/29/2019

City: San Diego
Project #: CA19_4419_001

DAILY TOTALS	IN	OUT	Total
	81	73	154

AM Period	IN		OUT		TOTAL		PM Period	IN		OUT		TOTAL	
0:00	0		0		0		12:00	2		1		3	
0:15	0		0		0		12:15	0		0		0	
0:30	0		0		0		12:30	3		0		3	
0:45	0		0		0		12:45	1	6	2	3	3	9
1:00	0		0		0		13:00	2		0		2	
1:15	0		0		0		13:15	2		0		2	
1:30	0		0		0		13:30	1		0		1	
1:45	0		0		0		13:45	3	8	3	3	6	11
2:00	0		0		0		14:00	1		1		2	
2:15	0		0		0		14:15	0		3		3	
2:30	0		0		0		14:30	0		1		1	
2:45	0		0		0		14:45	2	3	2	7	4	10
3:00	0		0		0		15:00	1		3		4	
3:15	0		0		0		15:15	0		1		1	
3:30	0		0		0		15:30	0		5		5	
3:45	0		0		0		15:45	1	2	2	11	3	13
4:00	0		0		0		16:00	1		4		5	
4:15	0		0		0		16:15	0		0		0	
4:30	0		0		0		16:30	0		4		4	
4:45	0		0		0		16:45	0	1	3	11	3	12
5:00	0		0		0		17:00	0		2		2	
5:15	0		0		0		17:15	1		5		6	
5:30	1		0		1		17:30	0		3		3	
5:45	1	2	0		1	2	17:45	0	1	3	13	3	14
6:00	2		0		2		18:00	0		2		2	
6:15	0		0		0		18:15	1		3		4	
6:30	1		0		1		18:30	0		1		1	
6:45	2	5	0		2	5	18:45	0	1	0	6	0	7
7:00	0		0		0		19:00	0		1		1	
7:15	3		0		3		19:15	0		0		0	
7:30	1		0		1		19:30	0		0		0	
7:45	2	6	1	1	3	7	19:45	0		0	1	0	1
8:00	5		0		5		20:00	0		0		0	
8:15	5		1		6		20:15	0		0		0	
8:30	5		1		6		20:30	0		0		0	
8:45	6	21	1	3	7	24	20:45	0		0		0	
9:00	6		0		6		21:00	0		0		0	
9:15	5		1		6		21:15	0		0		0	
9:30	3		1		4		21:30	0		0		0	
9:45	5	19	1	3	6	22	21:45	0		0		0	
10:00	1		0		1		22:00	0		0		0	
10:15	2		1		3		22:15	0		0		0	
10:30	0		0		0		22:30	0		0		0	
10:45	1	4	2	3	3	7	22:45	0		0		0	
11:00	2		2		4		23:00	0		0		0	
11:15	0		3		3		23:15	0		0		0	
11:30	0		2		2		23:30	0		0		0	
11:45	0	2	1	8	1	10	23:45	0		0		0	
TOTALS		59		18		**77**	**TOTALS**		22		55		**77**
SPLIT %		76.6%		23.4%		**50.0%**	**SPLIT %**		28.6%		71.4%		**50.0%**

DAILY TOTALS	IN	OUT	Total
	81	73	154

AM Peak Hour	8:15	10:45			**8:15**	**PM Peak Hour**	12:30	16:30			**16:30**
AM Pk Volume	22	9			**25**	**PM Pk Volume**	8	14			**15**
Pk Hr Factor	0.917	0.750			**0.893**	**Pk Hr Factor**	0.667	0.700			**0.625**
7 - 9 Volume	27	4	0	0	**31**	**4 - 6 Volume**	2	24	0	0	**26**
7 - 9 Peak Hour	8:00	7:45			**8:00**	**4 - 6 Peak Hour**	16:00	16:30			**16:30**
7 - 9 Pk Volume	21	3	0	0	**24**	**4 - 6 Pk Volume**	1	14	0	0	**15**
Pk Hr Factor	0.875	0.750	0.000	0.000	**0.857**	**Pk Hr Factor**	0.250	0.700	0.000	0.000	**0.625**

Prepared by National Data & Surveying Services

IN & OUT

Ambrx S Dwy @ N Torrey Pines Rd

Day: Tuesday
Date: 10/29/2019

City: San Diego
Project #: CA19_4419_002

DAILY TOTALS	IN	OUT	Total
	68	46	114

AM Period	IN		OUT		TOTAL		PM Period	IN		OUT		TOTAL	
0:00	0		0		0		12:00	1		1		2	
0:15	0		0		0		12:15	1		0		1	
0:30	0		0		0		12:30	0		0		0	
0:45	0		0		0		12:45	0	2	1	2	1	4
1:00	0		0		0		13:00	1		1		2	
1:15	0		0		0		13:15	2		0		2	
1:30	0		0		0		13:30	3		1		4	
1:45	0		0		0		13:45	0	6	1	3	1	9
2:00	0		0		0		14:00	0		2		2	
2:15	0		0		0		14:15	0		0		0	
2:30	0		0		0		14:30	0		2		2	
2:45	0		0		0		14:45	1	1	0	4	1	5
3:00	0		0		0		15:00	0		1		1	
3:15	0		0		0		15:15	0		0		0	
3:30	0		0		0		15:30	0		2		2	
3:45	0		0		0		15:45	0		1	4	1	4
4:00	0		0		0		16:00	0		2		2	
4:15	0		0		0		16:15	0		2		2	
4:30	0		0		0		16:30	1		0		1	
4:45	0		0		0		16:45	1	2	0	4	1	6
5:00	0		0		0		17:00	1		2		3	
5:15	0		0		0		17:15	0		5		5	
5:30	0		0		0		17:30	0		4		4	
5:45	1	1	0		1	1	17:45	2	3	0	11	2	14
6:00	0		0		0		18:00	1		0		1	
6:15	0		0		0		18:15	2		1		3	
6:30	0		0		0		18:30	0		1		1	
6:45	2	2	0		2	2	18:45	0	3	0	2	0	5
7:00	0		0		0		19:00	0		1		1	
7:15	3		0		3		19:15	0		3		3	
7:30	3		0		3		19:30	0		0		0	
7:45	0	6	0		0	6	19:45	0		1	5	1	5
8:00	4		0		4		20:00	0		0		0	
8:15	4		0		4		20:15	1		1		2	
8:30	8		1		9		20:30	0		0		0	
8:45	7	23	1	2	8	25	20:45	0	1	0	1	0	2
9:00	4		1		5		21:00	0		0		0	
9:15	1		0		1		21:15	0		0		0	
9:30	2		1		3		21:30	0		0		0	
9:45	4	11	0	2	4	13	21:45	0		0		0	
10:00	1		1		2		22:00	0		0		0	
10:15	2		1		3		22:15	0		0		0	
10:30	1		0		1		22:30	0		0		0	
10:45	1	5	1	3	2	8	22:45	0		0		0	
11:00	0		1		1		23:00	0		0		0	
11:15	0		1		1		23:15	0		0		0	
11:30	1		0		1		23:30	0		0		0	
11:45	1	2	1	3	2	5	23:45	0		0		0	
TOTALS	50		10		**60**		**TOTALS**	18		36		**54**	
SPLIT %	83.3%		16.7%		**52.6%**		**SPLIT %**	33.3%		66.7%		**47.4%**	

DAILY TOTALS	IN	OUT	Total
	68	46	114

AM Peak Hour	8:00	8:15			**8:15**	**PM Peak Hour**	12:45	16:45			**17:00**
AM Pk Volume	23	3			**26**	**PM Pk Volume**	6	11			**14**
Pk Hr Factor	0.719	0.750			**0.722**	**Pk Hr Factor**	0.500	0.550			**0.700**
7 - 9 Volume	29	2	0	0	**31**	**4 - 6 Volume**	5	15	0	0	**20**
7 - 9 Peak Hour	8:00	8:00			**8:00**	**4 - 6 Peak Hour**	16:15	16:45			**17:00**
7 - 9 Pk Volume	23	2	0	0	**25**	**4 - 6 Pk Volume**	3	11	0	0	**14**
Pk Hr Factor	0.719	0.500	0.000	0.000	**0.694**	**Pk Hr Factor**	0.750	0.550	0.000	0.000	**0.700**

Prepared by National Data & Surveying Services

IN & OUT

Ambrx Dwy @ Science Park Rd

Day: Tuesday
Date: 10/29/2019

City: San Diego
Project #: CA19_4419_003

DAILY TOTALS	IN	OUT	Total
	201	218	419

AM Period	IN		OUT		TOTAL		PM Period	IN		OUT		TOTAL	
0:00	0		0		0		12:00	2		3		5	
0:15	0		0		0		12:15	1		5		6	
0:30	0		0		0		12:30	2		0		2	
0:45	0		0		0		12:45	10	15	2	10	12	25
1:00	0		0		0		13:00	1		2		3	
1:15	0		0		0		13:15	4		1		5	
1:30	0		0		0		13:30	4		3		7	
1:45	0		0		0		13:45	1	10	1	7	2	17
2:00	0		0		0		14:00	0		2		2	
2:15	0		0		0		14:15	3		6		9	
2:30	0		0		0		14:30	1		11		12	
2:45	0		0		0		14:45	0	4	5	24	5	28
3:00	0		0		0		15:00	2		7		9	
3:15	1		0		1		15:15	2		5		7	
3:30	0		0		0		15:30	1		3		4	
3:45	0	1	0		0	1	15:45	2	7	5	20	7	27
4:00	0		0		0		16:00	3		7		10	
4:15	0		0		0		16:15	4		12		16	
4:30	0		0		0		16:30	1		8		9	
4:45	0		0		0		16:45	1	9	7	34	8	43
5:00	0		0		0		17:00	1		7		8	
5:15	1		0		1		17:15	0		9		9	
5:30	2		0		2		17:30	2		9		11	
5:45	7	10	0		7	10	17:45	0	3	4	29	4	32
6:00	18		1		19		18:00	3		5		8	
6:15	3		0		3		18:15	1		9		10	
6:30	4		0		4		18:30	0		9		9	
6:45	2	27	1	2	3	29	18:45	0	4	4	27	4	31
7:00	2		0		2		19:00	0		1		1	
7:15	6		1		7		19:15	0		1		1	
7:30	3		0		3		19:30	1		3		4	
7:45	9	20	3	4	12	24	19:45	0	1	2	7	2	8
8:00	14		1		15		20:00	0		1		1	
8:15	2		1		3		20:15	0		2		2	
8:30	12		1		13		20:30	0		2		2	
8:45	17	45	0	3	17	48	20:45	1	1	0	5	1	6
9:00	5		4		9		21:00	0		1		1	
9:15	7		3		10		21:15	0		0		0	
9:30	5		4		9		21:30	0		0		0	
9:45	7	24	3	14	10	38	21:45	0		1	2	1	2
10:00	4		1		5		22:00	0		1		1	
10:15	4		3		7		22:15	0		2		2	
10:30	0		1		1		22:30	0		0		0	
10:45	2	10	1	6	3	16	22:45	0		0	3	0	3
11:00	3		3		6		23:00	0		0		0	
11:15	4		6		10		23:15	0		0		0	
11:30	2		7		9		23:30	0		0		0	
11:45	1	10	5	21	6	31	23:45	0		0		0	
TOTALS		147		50		**197**	**TOTALS**		54		168		**222**
SPLIT %		74.6%		25.4%		**47.0%**	**SPLIT %**		24.3%		75.7%		**53.0%**

DAILY TOTALS	IN	OUT	Total
	201	218	419

AM Peak Hour	8:00	11:00			**8:30**	**PM Peak Hour**	12:45	16:00			**16:00**
AM Pk Volume	45	21			**49**	**PM Pk Volume**	19	34			**43**
Pk Hr Factor	0.662	0.750			**0.721**	**Pk Hr Factor**	0.475	0.708			**0.672**
7 - 9 Volume	65	7	0	0	**72**	**4 - 6 Volume**	12	63	0	0	**75**
7 - 9 Peak Hour	8:00	7:45			**8:00**	**4 - 6 Peak Hour**	16:00	16:00			**16:00**
7 - 9 Pk Volume	45	6	0	0	**48**	**4 - 6 Pk Volume**	9	34	0	0	**43**
Pk Hr Factor	0.662	0.500	0.000	0.000	**0.706**	**Pk Hr Factor**	0.563	0.708	0.000	0.000	**0.672**

Prepared by NDS/ATD

VOLUME

Existing Center Dwy @ Science Park Rd

Day: Tuesday
Date: 10/29/2019

City: San Diego
Project #: CA19_4422_004

DAILY TOTALS	IN	OUT	Total
	144	145	289

AM Period	IN		OUT		TOTAL		PM Period	IN		OUT		TOTAL	
00:00	0		0		0		12:00	5		2		7	
00:15	0		0		0		12:15	3		1		4	
00:30	0		0		0		12:30	0		4		4	
00:45	0		0		0		12:45	3	11	3	10	6	21
01:00	0		0		0		13:00	3		3		6	
01:15	0		0		0		13:15	1		0		1	
01:30	0		0		0		13:30	4		2		6	
01:45	0		0		0		13:45	2	10	0	5	2	15
02:00	0		0		0		14:00	1		5		6	
02:15	0		0		0		14:15	3		3		6	
02:30	0		0		0		14:30	1		12		13	
02:45	0		0		0		14:45	1	6	4	24	5	30
03:00	0		0		0		15:00	1		3		4	
03:15	0		0		0		15:15	1		5		6	
03:30	0		0		0		15:30	1		8		9	
03:45	0		0		0		15:45	1	4	4	20	5	24
04:00	0		0		0		16:00	0		5		5	
04:15	0		0		0		16:15	2		0		2	
04:30	0		0		0		16:30	0		4		4	
04:45	1	1	0		1	1	16:45	2	4	3	12	5	16
05:00	0		0		0		17:00	2		5		7	
05:15	0		0		0		17:15	1		9		10	
05:30	1		0		1		17:30	0		0		0	
05:45	4	5	1	1	5	6	17:45	1	4	1	15	2	19
06:00	5		2		7		18:00	0		3		3	
06:15	1		1		2		18:15	0		3		3	
06:30	2		1		3		18:30	1		4		5	
06:45	1	9	0	4	1	13	18:45	1	2	2	12	3	14
07:00	4		0		4		19:00	1		4		5	
07:15	3		1		4		19:15	0		2		2	
07:30	3		1		4		19:30	0		1		1	
07:45	5	15	0	2	5	17	19:45	0	1	0	7	0	8
08:00	5		1		6		20:00	2		3		5	
08:15	6		2		8		20:15	0		1		1	
08:30	6		0		6		20:30	0		0		0	
08:45	4	21	2	5	6	26	20:45	0	2	0	4	0	6
09:00	9		0		9		21:00	0		0		0	
09:15	8		3		11		21:15	0		0		0	
09:30	2		0		2		21:30	1		0		1	
09:45	2	21	0	3	2	24	21:45	0	1	0		0	1
10:00	4		3		7		22:00	0		0		0	
10:15	5		0		5		22:15	0		0		0	
10:30	7		2		9		22:30	0		0		0	
10:45	4	20	1	6	5	26	22:45	0		0		0	
11:00	2		4		6		23:00	0		0		0	
11:15	2		4		6		23:15	0		0		0	
11:30	0		5		5		23:30	0		1		1	
11:45	3	7	1	14	4	21	23:45	0		0	1	0	1
TOTALS		99		35		**134**	**TOTALS**		45		110		**155**
SPLIT %		73.9%		26.1%		**46.4%**	**SPLIT %**		29.0%		71.0%		**53.6%**

DAILY TOTALS	IN	OUT	Total
	144	145	289

AM Peak Hour	08:30	10:45			**08:30**	**PM Peak Hour**	12:00	14:00			**14:00**
AM Pk Volume	27	14			**32**	**PM Pk Volume**	11	24			**30**
Pk Hr Factor	0.750	0.700			**0.727**	**Pk Hr Factor**	0.550	0.500			**0.577**
7 - 9 Volume	36	7	0	0	**43**	**4 - 6 Volume**	8	27	0	0	**35**
7 - 9 Peak Hour	07:45	08:00			**08:00**	**4 - 6 Peak Hour**	16:15	16:30			**16:30**
7 - 9 Pk Volume	22	5	0	0	**26**	**4 - 6 Pk Volume**	6	21	0	0	**26**
Pk Hr Factor	0.917	0.625	0.000	0.000	**0.813**	**Pk Hr Factor**	0.750	0.583	0.000	0.000	**0.650**

Prepared by National Data & Surveying Services

IN & OUT

Shipping & Receiving 3010 Dwy @ Science Park Rd

Day: Tuesday
Date: 10/29/2019

City: San Diego
Project #: CA19_4419_005

DAILY TOTALS	IN	OUT	Total
	70	70	140

AM Period	IN		OUT		TOTAL		PM Period	IN		OUT		TOTAL	
0:00	0		0		0		12:00	2		0		2	
0:15	0		0		0		12:15	0		1		1	
0:30	0		0		0		12:30	2		3		5	
0:45	0		0		0		12:45	2	6	1	5	3	11
1:00	0		0		0		13:00	0		1		1	
1:15	0		0		0		13:15	1		1		2	
1:30	0		0		0		13:30	2		0		2	
1:45	0		0		0		13:45	1	4	0	2	1	6
2:00	0		0		0		14:00	1		5		6	
2:15	0		0		0		14:15	0		2		2	
2:30	0		0		0		14:30	1		1		2	
2:45	0		0		0		14:45	1	3	2	10	3	13
3:00	0		0		0		15:00	0		0		0	
3:15	0		0		0		15:15	0		1		1	
3:30	0		0		0		15:30	1		0		1	
3:45	0		0		0		15:45	1	2	1	2	2	4
4:00	0		0		0		16:00	0		5		5	
4:15	0		0		0		16:15	0		8		8	
4:30	0		0		0		16:30	1		2		3	
4:45	0		0		0		16:45	0	1	1	16	1	17
5:00	0		0		0		17:00	0		4		4	
5:15	0		0		0		17:15	0		0		0	
5:30	1		0		1		17:30	1		1		2	
5:45	0	1	0		0	1	17:45	0	1	1	6	1	7
6:00	0		0		0		18:00	0		0		0	
6:15	2		0		2		18:15	1		1		2	
6:30	1		0		1		18:30	1		3		4	
6:45	1	4	1	1	2	5	18:45	0	2	1	5	1	7
7:00	1		0		1		19:00	0		2		2	
7:15	3		0		3		19:15	0		0		0	
7:30	2		0		2		19:30	0		1		1	
7:45	3	9	0		3	9	19:45	0		1	4	1	4
8:00	3		1		4		20:00	1		1		2	
8:15	1		2		3		20:15	0		1		1	
8:30	4		1		5		20:30	0		0		0	
8:45	1	9	0	4	1	13	20:45	0	1	0	2	0	3
9:00	6		3		9		21:00	1		1		2	
9:15	4		2		6		21:15	0		0		0	
9:30	3		0		3		21:30	0		0		0	
9:45	3	16	0	5	3	21	21:45	0	1	0	1	0	2
10:00	2		1		3		22:00	0		0		0	
10:15	1		1		2		22:15	0		1		1	
10:30	2		0		2		22:30	0		1		1	
10:45	0	5	0	2	0	7	22:45	0		0	2	0	2
11:00	1		0		1		23:00	0		0		0	
11:15	1		1		2		23:15	0		0		0	
11:30	2		0		2		23:30	0		1		1	
11:45	1	5	1	2	2	7	23:45	0		0	1	0	1
TOTALS		49		14		**63**	**TOTALS**		21		56		**77**
SPLIT %		77.8%		22.2%		**45.0%**	**SPLIT %**		27.3%		72.7%		**55.0%**

DAILY TOTALS	IN	OUT	Total
	70	70	140

AM Peak Hour	9:00	8:15			**8:30**	**PM Peak Hour**	12:00	15:45			**15:45**
AM Pk Volume	16	6			**21**	**PM Pk Volume**	6	16			**18**
Pk Hr Factor	0.667	0.500			**0.583**	**Pk Hr Factor**	0.750	0.500			**0.563**
7 - 9 Volume	18	4	0	0	**22**	**4 - 6 Volume**	2	22	0	0	**24**
7 - 9 Peak Hour	7:15	7:45			**7:45**	**4 - 6 Peak Hour**	16:00	16:00			**16:00**
7 - 9 Pk Volume	11	4	0	0	**15**	**4 - 6 Pk Volume**	1	16	0	0	**17**
Pk Hr Factor	0.917	0.500	0.000	0.000	**0.750**	**Pk Hr Factor**	0.250	0.500	0.000	0.000	**0.531**

Prepared by National Data & Surveying Services

IN & OUT

Alexandria S Dwy @ Torreyana Rd

Day: Tuesday
Date: 10/29/2019

City: San Diego
Project #: CA19_4419_006

DAILY TOTALS	IN	OUT	Total
	451	442	893

AM Period	IN		OUT		TOTAL		PM Period	IN		OUT		TOTAL	
0:00	0		0		0		12:00	11		8		19	
0:15	0		0		0		12:15	4		12		16	
0:30	0		0		0		12:30	9		7		16	
0:45	0		0		0		12:45	6	30	5	32	11	62
1:00	0		0		0		13:00	2		9		11	
1:15	0		1		1		13:15	3		8		11	
1:30	0		0		0		13:30	3		8		11	
1:45	0		1	2	1	2	13:45	6	14	5	30	11	44
2:00	0		0		0		14:00	5		9		14	
2:15	0		0		0		14:15	6		3		9	
2:30	0		0		0		14:30	5		7		12	
2:45	0		0		0		14:45	3	19	8	27	11	46
3:00	0		0		0		15:00	2		8		10	
3:15	0		0		0		15:15	4		6		10	
3:30	0		0		0		15:30	7		4		11	
3:45	2	2	0		2	2	15:45	5	18	3	21	8	39
4:00	0		0		0		16:00	22		20		42	
4:15	0		0		0		16:15	13		7		20	
4:30	0		0		0		16:30	13		7		20	
4:45	0		1	1	1	1	16:45	16	64	12	46	28	110
5:00	2		0		2		17:00	14		13		27	
5:15	5		0		5		17:15	15		13		28	
5:30	8		0		8		17:30	5		8		13	
5:45	10	25	1	1	11	26	17:45	1	35	8	42	9	77
6:00	18		0		18		18:00	11		11		22	
6:15	8		1		9		18:15	5		10		15	
6:30	4		6		10		18:30	2		11		13	
6:45	11	41	5	12	16	53	18:45	4	22	5	37	9	59
7:00	7		11		18		19:00	4		8		12	
7:15	4		11		15		19:15	2		18		20	
7:30	9		7		16		19:30	2		12		14	
7:45	9	29	6	35	15	64	19:45	0	8	7	45	7	53
8:00	8		8		16		20:00	0		5		5	
8:15	8		8		16		20:15	0		1		1	
8:30	13		9		22		20:30	0		2		2	
8:45	14	43	8	33	22	76	20:45	1	1	2	10	3	11
9:00	10		6		16		21:00	0		1		1	
9:15	7		6		13		21:15	2		1		3	
9:30	5		5		10		21:30	0		0		0	
9:45	5	27	3	20	8	47	21:45	0	2	0	2	0	4
10:00	6		5		11		22:00	0		0		0	
10:15	5		5		10		22:15	0		0		0	
10:30	1		3		4		22:30	0		0		0	
10:45	9	21	5	18	14	39	22:45	0		1	1	1	1
11:00	4		6		10		23:00	0		0		0	
11:15	9		5		14		23:15	0		0		0	
11:30	20		4		24		23:30	0		1		1	
11:45	17	50	11	26	28	76	23:45	0		0	1	0	1
TOTALS		238		148		**386**	**TOTALS**		213		294		**507**
SPLIT %		61.7%		38.3%		**43.2%**	**SPLIT %**		42.0%		58.0%		**56.8%**

DAILY TOTALS	IN	OUT	Total
	451	442	893

AM Peak Hour	11:15	11:45			**11:30**	**PM Peak Hour**	16:00	16:00			**16:00**
AM Pk Volume	57	38			**87**	**PM Pk Volume**	64	46			**110**
Pk Hr Factor	0.713	0.792			**0.777**	**Pk Hr Factor**	0.727	0.575			**0.655**
7 - 9 Volume	72	68	0	0	**140**	**4 - 6 Volume**	99	88	0	0	**187**
7 - 9 Peak Hour	8:00	7:00			**8:00**	**4 - 6 Peak Hour**	16:00	16:00			**16:00**
7 - 9 Pk Volume	43	35	0	0	**76**	**4 - 6 Pk Volume**	64	46	0	0	**110**
Pk Hr Factor	0.768	0.795	0.000	0.000	**0.864**	**Pk Hr Factor**	0.727	0.575	0.000	0.000	**0.655**

Prepared by National Data & Surveying Services

IN & OUT

Alexandria N Dwy @ Torreyana Rd

Day: Tuesday
Date: 10/29/2019

City: San Diego
Project #: CA19_4419_007

DAILY TOTALS	IN	OUT	Total
	138	141	279

AM Period	IN		OUT		TOTAL		PM Period	IN		OUT		TOTAL	
0:00	0		0		0		12:00	5		6		11	
0:15	0		0		0		12:15	2		2		4	
0:30	0		0		0		12:30	2		1		3	
0:45	0		0		0		12:45	2	11	2	11	4	22
1:00	0		0		0		13:00	2		10		12	
1:15	0		0		0		13:15	4		3		7	
1:30	0		0		0		13:30	1		5		6	
1:45	0		1	1	1	1	13:45	1	8	4	22	5	30
2:00	0		0		0		14:00	1		6		7	
2:15	0		0		0		14:15	1		2		3	
2:30	0		0		0		14:30	0		1		1	
2:45	0		0		0		14:45	3	5	4	13	7	18
3:00	0		0		0		15:00	0		4		4	
3:15	0		0		0		15:15	1		2		3	
3:30	0		0		0		15:30	1		4		5	
3:45	0		0		0		15:45	2	4	3	13	5	17
4:00	0		0		0		16:00	0		3		3	
4:15	0		0		0		16:15	2		5		7	
4:30	0		0		0		16:30	1		0		1	
4:45	0		0		0		16:45	3	6	3	11	6	17
5:00	0		0		0		17:00	8		6		14	
5:15	0		0		0		17:15	6		5		11	
5:30	1		0		1		17:30	3		2		5	
5:45	2	3	0		2	3	17:45	3	20	6	19	9	39
6:00	1		0		1		18:00	0		6		6	
6:15	0		0		0		18:15	1		9		10	
6:30	0		0		0		18:30	0		6		6	
6:45	5	6	0		5	6	18:45	1	2	2	23	3	25
7:00	4		0		4		19:00	0		5		5	
7:15	4		0		4		19:15	1		0		1	
7:30	3		0		3		19:30	0		0		0	
7:45	2	13	0		2	13	19:45	0	1	1	6	1	7
8:00	9		3		12		20:00	0		0		0	
8:15	5		3		8		20:15	0		0		0	
8:30	7		1		8		20:30	0		1		1	
8:45	5	26	1	8	6	34	20:45	0		1	2	1	2
9:00	4		2		6		21:00	0		0		0	
9:15	1		0		1		21:15	0		2		2	
9:30	4		0		4		21:30	0		0		0	
9:45	2	11	0	2	2	13	21:45	0		0	2	0	2
10:00	0		1		1		22:00	0		1		1	
10:15	4		0		4		22:15	0		0		0	
10:30	1		0		1		22:30	0		0		0	
10:45	0	5	0	1	0	6	22:45	0		1	2	1	2
11:00	2		1		3		23:00	0		0		0	
11:15	1		1		2		23:15	0		0		0	
11:30	5		0		5		23:30	0		0		0	
11:45	9	17	3	5	12	22	23:45	0		0		0	
TOTALS		81		17		**98**	**TOTALS**		57		124		**181**
SPLIT %		82.7%		17.3%		**35.1%**	**SPLIT %**		31.5%		68.5%		**64.9%**

DAILY TOTALS	IN	OUT	Total
	138	141	279

AM Peak Hour	8:00	11:45			**8:00**	**PM Peak Hour**	16:45	17:45			**17:00**
AM Pk Volume	26	12			**34**	**PM Pk Volume**	20	27			**39**
Pk Hr Factor	0.722	0.500			**0.708**	**Pk Hr Factor**	0.625	0.750			**0.696**
7 - 9 Volume	39	8	0	0	**47**	**4 - 6 Volume**	26	30	0	0	**56**
7 - 9 Peak Hour	8:00	8:00			**8:00**	**4 - 6 Peak Hour**	16:45	17:00			**17:00**
7 - 9 Pk Volume	26	8	0	0	**34**	**4 - 6 Pk Volume**	20	19	0	0	**39**
Pk Hr Factor	0.722	0.667	0.000	0.000	**0.708**	**Pk Hr Factor**	0.625	0.792	0.000	0.000	**0.696**

Prepared by NDS/ATD

VOLUME

Existing Dwy @ Callan Rd

Day: Tuesday
Date: 10/29/2019

City: San Diego
Project #: CA19_4422_008

DAILY TOTALS	IN	OUT	Total
	307	300	607

AM Period	IN		OUT		TOTAL		PM Period	IN		OUT		TOTAL	
0:00	0		0		0		12:00	5		7		12	
0:15	0		0		0		12:15	9		8		17	
0:30	0		0		0		12:30	6		7		13	
0:45	0		0		0		12:45	4	24	10	32	14	56
1:00	0		0		0		13:00	4		9		13	
1:15	0		0		0		13:15	9		3		12	
1:30	0		0		0		13:30	14		8		22	
1:45	0		0		0		13:45	8	35	5	25	13	60
2:00	0		0		0		14:00	2		5		7	
2:15	0		0		0		14:15	3		9		12	
2:30	0		0		0		14:30	3		15		18	
2:45	0		0		0		14:45	2	10	5	34	7	44
3:00	0		0		0		15:00	5		2		7	
3:15	0		0		0		15:15	3		1		4	
3:30	0		0		0		15:30	0		2		2	
3:45	0		0		0		15:45	3	11	10	15	13	26
4:00	0		0		0		16:00	11		3		14	
4:15	0		0		0		16:15	8		8		16	
4:30	0		0		0		16:30	10		5		15	
4:45	0		0		0		16:45	2	31	9	25	11	56
5:00	0		0		0		17:00	2		7		9	
5:15	0		0		0		17:15	10		8		18	
5:30	0		0		0		17:30	4		12		16	
5:45	0		0		0		17:45	3	19	9	36	12	55
6:00	0		1		1		18:00	5		3		8	
6:15	2		1		3		18:15	9		2		11	
6:30	0		0		0		18:30	5		1		6	
6:45	2	4	1	3	3	7	18:45	0	19	5	11	5	30
7:00	1		0		1		19:00	5		9		14	
7:15	1		2		3		19:15	6		7		13	
7:30	5		1		6		19:30	2		9		11	
7:45	6	13	3	6	9	19	19:45	1	14	7	32	8	46
8:00	3		1		4		20:00	0		9		9	
8:15	10		1		11		20:15	4		0		4	
8:30	12		2		14		20:30	3		0		3	
8:45	16	41	3	7	19	48	20:45	0	7	1	10	1	17
9:00	10		4		14		21:00	0		0		0	
9:15	3		0		3		21:15	0		0		0	
9:30	4		9		13		21:30	0		0		0	
9:45	3	20	3	16	6	36	21:45	0		0		0	
10:00	3		12		15		22:00	0		0		0	
10:15	2		5		7		22:15	0		0		0	
10:30	5		3		8		22:30	0		0		0	
10:45	6	16	2	22	8	38	22:45	0		0		0	
11:00	10		15		25		23:00	0		0		0	
11:15	10		1		11		23:15	0		0		0	
11:30	12		9		21		23:30	0		0		0	
11:45	11	43	1	26	12	69	23:45	0		0		0	
TOTALS		137		80		217	TOTALS		170		220		390
SPLIT %		63.1%		36.9%		35.7%	SPLIT %		43.6%		56.4%		64.3%

DAILY TOTALS	IN	OUT	Total
	307	300	607

AM Peak Hour	8:15	9:30			11:00	PM Peak Hour	13:00	16:45			12:45
AM Pk Volume	48	29			69	PM Pk Volume	35	36			61
Pk Hr Factor	0.750	0.604			0.690	Pk Hr Factor	0.625	0.750			0.693
7 - 9 Volume	54	13	0	0	67	4 - 6 Volume	50	61	0	0	111
7 - 9 Peak Hour	8:00	7:15			8:00	4 - 6 Peak Hour	16:00	16:45			16:00
7 - 9 Pk Volume	41	7	0	0	48	4 - 6 Pk Volume	31	36	0	0	56
Pk Hr Factor	0.641	0.583	0.000	0.000	0.632	Pk Hr Factor	0.705	0.750	0.000	0.000	0.875

APPENDIX D

INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

EXISTING CONDITIONS

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	9	30	23	57	0	0	0	0	140	0	29
Future Vol, veh/h	0	9	30	23	57	0	0	0	0	140	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	40	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	10	34	26	64	0	0	0	0	157	0	33

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	44	0	0			143	160	64
Stage 1	-	-	-	-	-	-			116	116	-
Stage 2	-	-	-	-	-	-			27	44	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1564	-	0			850	732	1000
Stage 1	0	-	-	-	-	0			909	800	-
Stage 2	0	-	-	-	-	0			996	858	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	1564	-	-			836	0	1000
Mov Cap-2 Maneuver	-	-	-	-	-	-			836	0	-
Stage 1	-	-	-	-	-	-			909	0	-
Stage 2	-	-	-	-	-	-			979	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.1	10
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1564	-	836	1000
HCM Lane V/C Ratio	-	-	0.017	-	0.188	0.033
HCM Control Delay (s)	-	-	7.3	0	10.3	8.7
HCM Lane LOS	-	-	A	A	B	A
HCM 95th %tile Q(veh)	-	-	0.1	-	0.7	0.1

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	130	23	11	3	11
Future Vol, veh/h	21	130	23	11	3	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	137	24	12	3	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	36	0	-	0	211	30
Stage 1	-	-	-	-	30	-
Stage 2	-	-	-	-	181	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1575	-	-	-	777	1044
Stage 1	-	-	-	-	993	-
Stage 2	-	-	-	-	850	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1575	-	-	-	765	1044
Mov Cap-2 Maneuver	-	-	-	-	765	-
Stage 1	-	-	-	-	978	-
Stage 2	-	-	-	-	850	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1575	-	-	-	968
HCM Lane V/C Ratio	0.014	-	-	-	0.015
HCM Control Delay (s)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	80	84	32	31	4	3
Future Vol, veh/h	80	84	32	31	4	3
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	93	98	37	36	5	3
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.9	7.9	7.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	51%	49%	0%
Vol Thru, %	49%	0%	57%
Vol Right, %	0%	51%	43%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	63	164	7
LT Vol	32	80	0
Through Vol	31	0	4
RT Vol	0	84	3
Lane Flow Rate	73	191	8
Geometry Grp	1	1	1
Degree of Util (X)	0.089	0.205	0.009
Departure Headway (Hd)	4.378	3.864	4.07
Convergence, Y/N	Yes	Yes	Yes
Cap	810	923	865
Service Time	2.449	1.915	2.162
HCM Lane V/C Ratio	0.09	0.207	0.009
HCM Control Delay	7.9	7.9	7.2
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0.8	0

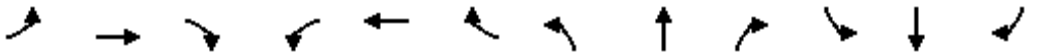
Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	203	234	17	6	34	60
Future Vol, veh/h	203	234	17	6	34	60
Conflicting Peds, #/hr	3	0	0	3	2	0
Sign Control	Free	Free	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	16965	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	214	246	18	6	36	63

Major/Minor	Major1		Minor2	
Conflicting Flow All	3	0	677	6
Stage 1	-	-	3	-
Stage 2	-	-	674	-
Critical Hdwy	4.12	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.52	-
Follow-up Hdwy	2.218	-	4.018	3.318
Pot Cap-1 Maneuver	1619	-	375	1077
Stage 1	-	-	-	-
Stage 2	-	-	454	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	1614	-	0	1071
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	EB	WB
HCM Control Delay, s	3.5	8.4
HCM LOS		A

Minor Lane/Major Mvmt	EBL	EBT	WBLn1
Capacity (veh/h)	1614	-	1071
HCM Lane V/C Ratio	0.132	-	0.023
HCM Control Delay (s)	7.6	0	8.4
HCM Lane LOS	A	A	A
HCM 95th %tile Q(veh)	0.5	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	4	47	58	8	13	114	529	526	151	593	32
Future Volume (veh/h)	9	4	47	58	8	13	114	529	526	151	593	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.97	1.00		0.99	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	10	4	53	71	0	15	128	594	591	170	666	36
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	24	69	292	0	126	162	2673	822	210	2808	826
Arrive On Green	0.05	0.05	0.05	0.08	0.00	0.08	0.09	0.52	0.52	0.12	0.55	0.55
Sat Flow, veh/h	1290	516	1457	3563	0	1533	1781	5106	1570	1781	5106	1502
Grp Volume(v), veh/h	14	0	53	71	0	15	128	594	591	170	666	36
Grp Sat Flow(s),veh/h/ln	1806	0	1457	1781	0	1533	1781	1702	1570	1781	1702	1502
Q Serve(g_s), s	0.6	0.0	3.1	1.6	0.0	0.8	6.1	5.4	25.0	8.1	5.9	1.0
Cycle Q Clear(g_c), s	0.6	0.0	3.1	1.6	0.0	0.8	6.1	5.4	25.0	8.1	5.9	1.0
Prop In Lane	0.71		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	86	0	69	292	0	126	162	2673	822	210	2808	826
V/C Ratio(X)	0.16	0.00	0.77	0.24	0.00	0.12	0.79	0.22	0.72	0.81	0.24	0.04
Avail Cap(c_a), veh/h	139	0	113	1565	0	673	361	2673	822	439	2808	826
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.7	0.0	40.8	37.3	0.0	36.9	38.6	11.1	15.8	37.3	10.1	9.0
Incr Delay (d2), s/veh	0.9	0.0	16.0	0.4	0.0	0.4	8.2	0.2	5.4	7.3	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.4	0.7	0.0	0.3	2.9	1.8	8.7	3.8	1.9	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.5	0.0	56.8	37.7	0.0	37.3	46.8	11.3	21.2	44.6	10.3	9.1
LnGrp LOS	D	A	E	D	A	D	D	B	C	D	B	A
Approach Vol, veh/h		67			86			1313			872	
Approach Delay, s/veh		53.4			37.7			19.2			16.9	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.6	51.1		9.0	12.3	53.4		12.0				
Change Period (Y+Rc), s	4.4	5.7		4.9	4.4	5.7		4.9				
Max Green Setting (Gmax), s	21.4	43.9		6.7	17.6	47.7		38.1				
Max Q Clear Time (g_c+I1), s	10.1	27.0		5.1	8.1	7.9		3.6				
Green Ext Time (p_c), s	0.3	5.7		0.0	0.2	4.8		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		20.0	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	8	74	28	16	83	127	1084	46	131	504	56
Future Volume (veh/h)	16	8	74	28	16	83	127	1084	46	131	504	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.65	1.00		0.84	1.00		0.92	1.00		0.90
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	9	80	24	26	90	138	1178	50	142	548	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	10	86	546	574	410	165	1748	500	169	1760	493
Arrive On Green	0.09	0.09	0.09	0.31	0.31	0.31	0.09	0.34	0.34	0.09	0.34	0.34
Sat Flow, veh/h	1781	109	973	1781	1870	1337	1781	5106	1462	1781	5106	1431
Grp Volume(v), veh/h	17	0	89	24	26	90	138	1178	50	142	548	61
Grp Sat Flow(s),veh/h/ln	1781	0	1082	1781	1870	1337	1781	1702	1462	1781	1702	1431
Q Serve(g_s), s	1.1	0.0	9.9	1.1	1.2	6.0	9.2	23.8	2.8	9.5	9.5	3.5
Cycle Q Clear(g_c), s	1.1	0.0	9.9	1.1	1.2	6.0	9.2	23.8	2.8	9.5	9.5	3.5
Prop In Lane	1.00		0.90	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	158	0	96	546	574	410	165	1748	500	169	1760	493
V/C Ratio(X)	0.11	0.00	0.93	0.04	0.05	0.22	0.84	0.67	0.10	0.84	0.31	0.12
Avail Cap(c_a), veh/h	158	0	96	577	606	433	274	1748	500	277	1760	493
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.6	0.0	54.6	29.4	29.4	31.1	53.9	33.9	27.0	53.7	29.0	27.1
Incr Delay (d2), s/veh	0.1	0.0	67.8	0.0	0.0	0.3	4.5	2.1	0.4	5.3	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	4.5	0.5	0.5	0.0	4.2	9.8	1.0	4.4	3.8	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.7	0.0	122.4	29.4	29.4	31.4	58.4	36.0	27.4	59.0	29.5	27.6
LnGrp LOS	D	A	F	C	C	C	E	D	C	E	C	C
Approach Vol, veh/h		106			140			1366			751	
Approach Delay, s/veh		110.9			30.7			38.0			34.9	
Approach LOS		F			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.9	47.3		15.6	15.6	47.6		41.9
Change Period (Y+Rc), s	4.4	6.0		4.9	4.4	* 6		4.9
Max Green Setting (Gmax), s	18.8	41.2		10.7	18.6	* 42		39.1
Max Q Clear Time (g_c+I1), s	11.5	25.8		11.9	11.2	11.5		8.0
Green Ext Time (p_c), s	0.1	11.8		0.0	0.1	8.6		0.6

Intersection Summary	
HCM 6th Ctrl Delay	39.8
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	0	47	0	0	0	244	1227	0	1	567	44
Future Volume (veh/h)	13	0	47	0	0	0	244	1227	0	1	567	44
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	0	1870				1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h	14	0	52				271	1363	0	1	630	49
Peak Hour Factor	0.90	0.92	0.90				0.90	0.90	0.92	0.92	0.90	0.90
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	81	0	72				309	4037	0	2	2977	229
Arrive On Green	0.05	0.00	0.05				0.17	0.79	0.00	0.00	0.62	0.62
Sat Flow, veh/h	1781	0	1585				1781	5274	0	1781	4815	371
Grp Volume(v), veh/h	14	0	52				271	1363	0	1	444	235
Grp Sat Flow(s),veh/h/ln	1781	0	1585				1781	1702	0	1781	1702	1782
Q Serve(g_s), s	0.7	0.0	3.0				13.8	7.1	0.0	0.1	5.3	5.4
Cycle Q Clear(g_c), s	0.7	0.0	3.0				13.8	7.1	0.0	0.1	5.3	5.4
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.21
Lane Grp Cap(c), veh/h	81	0	72				309	4037	0	2	2105	1102
V/C Ratio(X)	0.17	0.00	0.72				0.88	0.34	0.00	0.51	0.21	0.21
Avail Cap(c_a), veh/h	693	0	616				875	4037	0	107	2105	1102
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	0.0	43.7				37.4	2.8	0.0	46.3	7.8	7.8
Incr Delay (d2), s/veh	1.0	0.0	12.6				3.2	0.2	0.0	130.8	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.3				5.9	1.2	0.0	0.1	1.7	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.6	0.0	56.3				40.6	3.0	0.0	177.1	8.0	8.2
LnGrp LOS	D	A	E				D	A	A	F	A	A
Approach Vol, veh/h		66						1634			680	
Approach Delay, s/veh		53.6						9.2			8.3	
Approach LOS		D						A			A	

Timer - Assigned Phs	1	2	4	5	6
Phs Duration (G+Y+Rc), s	4.5	79.2	9.1	20.5	63.2
Change Period (Y+Rc), s	4.4	* 5.8	4.9	4.4	5.8
Max Green Setting (Gmax), s	5.6	* 73	36.1	45.6	33.2
Max Q Clear Time (g_c+I1), s	2.1	9.1	5.0	15.8	7.4
Green Ext Time (p_c), s	0.0	20.1	0.2	0.3	4.8

Intersection Summary	
HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Notes

User approved ignoring U-Turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	485	177	172	1781	0	0	0	0	1406	1	1415
Future Volume (veh/h)	0	485	177	172	1781	0	0	0	0	1406	1	1415
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	533	195	189	1957	0				1546	0	1555
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91				0.91	0.91	0.91
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1953	719	211	1895	0				1754	0	1560
Arrive On Green	0.00	0.26	0.26	0.02	0.12	0.00				0.49	0.00	0.49
Sat Flow, veh/h	0	7930	2790	3456	5274	0				3563	0	3170
Grp Volume(v), veh/h	0	533	195	189	1957	0				1546	0	1555
Grp Sat Flow(s),veh/h/ln	0	1515	1395	1728	1702	0				1781	0	1585
Q Serve(g_s), s	0.0	5.1	5.0	4.9	33.4	0.0				35.0	0.0	44.0
Cycle Q Clear(g_c), s	0.0	5.1	5.0	4.9	33.4	0.0				35.0	0.0	44.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1953	719	211	1895	0				1754	0	1560
V/C Ratio(X)	0.00	0.27	0.27	0.89	1.03	0.00				0.88	0.00	1.00
Avail Cap(c_a), veh/h	0	1953	719	211	1895	0				1754	0	1560
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.77	0.77	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	26.7	26.7	43.8	39.5	0.0				20.5	0.0	22.8
Incr Delay (d2), s/veh	0.0	0.3	0.9	29.0	27.2	0.0				5.6	0.0	21.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	1.6	2.9	19.6	0.0				14.7	0.0	19.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	27.0	27.6	72.8	66.7	0.0				26.1	0.0	44.7
LnGrp LOS	A	C	C	E	F	A				C	A	D
Approach Vol, veh/h		728			2146						3101	
Approach Delay, s/veh		27.2			67.2						35.4	
Approach LOS		C			E						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.2	30.4		49.4		40.6
Change Period (Y+Rc), s	* 4.7	7.2		5.1		7.2
Max Green Setting (Gmax), s	* 5.5	23.2		44.3		33.4
Max Q Clear Time (g_c+I1), s	6.9	7.1		46.0		35.4
Green Ext Time (p_c), s	0.0	3.6		0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	45.9
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	198	1645	0	0	649	575	1232	3	985	0	0	0
Future Volume (veh/h)	198	1645	0	0	649	575	1232	3	985	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	215	1788	0	0	705	625	1341	0	1071			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	261	2145	0	0	2256	831	1579	0	1405			
Arrive On Green	0.02	0.14	0.00	0.00	0.30	0.30	0.44	0.00	0.44			
Sat Flow, veh/h	3456	5274	0	0	7930	2790	3563	0	3170			
Grp Volume(v), veh/h	215	1788	0	0	705	625	1341	0	1071			
Grp Sat Flow(s),veh/h/ln	1728	1702	0	0	1515	1395	1781	0	1585			
Q Serve(g_s), s	5.6	30.7	0.0	0.0	6.5	18.2	30.2	0.0	25.6			
Cycle Q Clear(g_c), s	5.6	30.7	0.0	0.0	6.5	18.2	30.2	0.0	25.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	261	2145	0	0	2256	831	1579	0	1405			
V/C Ratio(X)	0.82	0.83	0.00	0.00	0.31	0.75	0.85	0.00	0.76			
Avail Cap(c_a), veh/h	261	2145	0	0	2256	831	1579	0	1405			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.70	0.70	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	43.3	35.7	0.0	0.0	24.5	28.6	22.4	0.0	21.1			
Incr Delay (d2), s/veh	13.9	2.8	0.0	0.0	0.4	6.2	5.9	0.0	4.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.8	14.2	0.0	0.0	2.2	6.3	13.1	0.0	9.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.1	38.5	0.0	0.0	24.8	34.8	28.3	0.0	25.0			
LnGrp LOS	E	D	A	A	C	C	C	A	C			
Approach Vol, veh/h		2003			1330			2412				
Approach Delay, s/veh		40.5			29.5			26.8				
Approach LOS		D			C			C				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		45.0			11.0	34.0		45.0				
Change Period (Y+Rc), s		7.2			* 4.2	7.2		5.1				
Max Green Setting (Gmax), s		37.8			* 6.8	26.8		39.9				
Max Q Clear Time (g_c+I1), s		32.7			7.6	20.2		32.2				
Green Ext Time (p_c), s		4.1			0.0	3.6		5.8				

Intersection Summary		
HCM 6th Ctrl Delay		32.2
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	61	116	164	53	0	0	0	0	5	0	22
Future Vol, veh/h	0	61	116	164	53	0	0	0	0	5	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	40	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	71	135	191	62	0	0	0	0	6	0	26

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	206	0	0	583	650	62
Stage 1	-	-	-	-	-	-	444	444	-
Stage 2	-	-	-	-	-	-	139	206	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1365	-	0	475	388	1003
Stage 1	0	-	-	-	-	0	646	575	-
Stage 2	0	-	-	-	-	0	888	731	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1365	-	-	406	0	1003
Mov Cap-2 Maneuver	-	-	-	-	-	-	406	0	-
Stage 1	-	-	-	-	-	-	646	0	-
Stage 2	-	-	-	-	-	-	759	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	6.1	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1365	-	406	1003
HCM Lane V/C Ratio	-	-	0.14	-	0.014	0.026
HCM Control Delay (s)	-	-	8.1	0	14	8.7
HCM Lane LOS	-	-	A	A	B	A
HCM 95th %tile Q(veh)	-	-	0.5	-	0	0.1

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	9	135	109	2	53
Future Vol, veh/h	55	9	135	109	2	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	10	152	122	2	60

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	274	0	-	0	347	213
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	134	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1289	-	-	-	650	827
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	892	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1289	-	-	-	619	827
Mov Cap-2 Maneuver	-	-	-	-	619	-
Stage 1	-	-	-	-	783	-
Stage 2	-	-	-	-	892	-

Approach	EB	WB	SB
HCM Control Delay, s	6.8	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1289	-	-	-	817
HCM Lane V/C Ratio	0.048	-	-	-	0.076
HCM Control Delay (s)	7.9	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	22	83	6	38	71
Future Vol, veh/h	4	22	83	6	38	71
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	27	101	7	46	87
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.1	7.9	7.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	93%	15%	0%
Vol Thru, %	7%	0%	35%
Vol Right, %	0%	85%	65%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	89	26	109
LT Vol	83	4	0
Through Vol	6	0	38
RT Vol	0	22	71
Lane Flow Rate	109	32	133
Geometry Grp	1	1	1
Degree of Util (X)	0.129	0.034	0.136
Departure Headway (Hd)	4.276	3.866	3.679
Convergence, Y/N	Yes	Yes	Yes
Cap	838	909	970
Service Time	2.303	1.961	1.719
HCM Lane V/C Ratio	0.13	0.035	0.137
HCM Control Delay	7.9	7.1	7.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.1	0.5

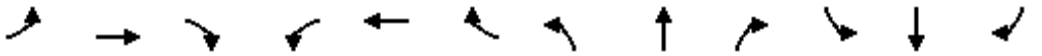
Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	89	23	192	35	2	157
Future Vol, veh/h	89	23	192	35	2	157
Conflicting Peds, #/hr	2	0	0	2	6	1
Sign Control	Free	Free	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	16965	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	106	27	229	42	2	187

Major/Minor	Major1		Minor2	
Conflicting Flow All	2	0	241	4
Stage 1	-	-	2	-
Stage 2	-	-	239	-
Critical Hdwy	4.12	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.52	-
Follow-up Hdwy	2.218	-	4.018	3.318
Pot Cap-1 Maneuver	1620	-	660	1080
Stage 1	-	-	-	-
Stage 2	-	-	708	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	1617	-	0	1076
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	EB	WB
HCM Control Delay, s	5.9	9.5
HCM LOS		A

Minor Lane/Major Mvmt	EBL	EBT	WBLn1
Capacity (veh/h)	1617	-	1076
HCM Lane V/C Ratio	0.066	-	0.251
HCM Control Delay (s)	7.4	0	9.5
HCM Lane LOS	A	A	A
HCM 95th %tile Q(veh)	0.2	-	1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	2	64	417	4	119	69	877	85	12	564	12
Future Volume (veh/h)	17	2	64	417	4	119	69	877	85	12	564	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.98	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	2	67	442	0	125	73	923	89	13	594	13
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	98	11	89	736	0	320	99	2556	756	22	2334	688
Arrive On Green	0.06	0.06	0.06	0.21	0.00	0.21	0.06	0.50	0.50	0.01	0.46	0.46
Sat Flow, veh/h	1611	179	1460	3563	0	1548	1781	5106	1511	1781	5106	1505
Grp Volume(v), veh/h	20	0	67	442	0	125	73	923	89	13	594	13
Grp Sat Flow(s),veh/h/ln	1790	0	1460	1781	0	1548	1781	1702	1511	1781	1702	1505
Q Serve(g_s), s	1.0	0.0	4.1	10.2	0.0	6.3	3.7	10.0	2.8	0.7	6.5	0.4
Cycle Q Clear(g_c), s	1.0	0.0	4.1	10.2	0.0	6.3	3.7	10.0	2.8	0.7	6.5	0.4
Prop In Lane	0.90		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	109	0	89	736	0	320	99	2556	756	22	2334	688
V/C Ratio(X)	0.18	0.00	0.76	0.60	0.00	0.39	0.74	0.36	0.12	0.59	0.25	0.02
Avail Cap(c_a), veh/h	220	0	179	1854	0	806	327	2556	756	130	2334	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	0.0	41.8	32.5	0.0	31.0	42.1	13.8	12.0	44.5	15.1	13.5
Incr Delay (d2), s/veh	0.8	0.0	12.3	0.8	0.0	0.8	10.0	0.4	0.3	22.9	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.8	4.4	0.0	2.4	1.8	3.5	0.9	0.4	2.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.2	0.0	54.1	33.3	0.0	31.8	52.1	14.2	12.3	67.4	15.4	13.5
LnGrp LOS	D	A	D	C	A	C	D	B	B	E	B	B
Approach Vol, veh/h		87			567			1085			620	
Approach Delay, s/veh		51.2			33.0			16.6			16.4	
Approach LOS		D			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	51.0		10.4	9.4	47.1		23.6				
Change Period (Y+Rc), s	4.4	5.7		4.9	4.4	5.7		4.9				
Max Green Setting (Gmax), s	6.6	45.3		11.1	16.6	35.3		47.1				
Max Q Clear Time (g_c+I1), s	2.7	12.0		6.1	5.7	8.5		12.2				
Green Ext Time (p_c), s	0.0	7.2		0.1	0.1	3.9		2.1				

Intersection Summary			
HCM 6th Ctrl Delay		21.7	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	12	118	143	14	215	36	729	8	55	1101	22
Future Volume (veh/h)	45	12	118	143	14	215	36	729	8	55	1101	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.63	1.00		0.76	1.00		0.89	1.00		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	13	124	162	0	226	38	767	8	58	1159	23
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	205	11	108	1127	0	380	49	1848	514	75	1923	532
Arrive On Green	0.11	0.11	0.11	0.32	0.00	0.32	0.03	0.36	0.36	0.04	0.38	0.38
Sat Flow, veh/h	1781	99	941	3563	0	1202	1781	5106	1419	1781	5106	1412
Grp Volume(v), veh/h	47	0	137	162	0	226	38	767	8	58	1159	23
Grp Sat Flow(s),veh/h/ln	1781	0	1040	1781	0	1202	1781	1702	1419	1781	1702	1412
Q Serve(g_s), s	2.9	0.0	14.1	4.0	0.0	19.4	2.6	13.8	0.4	4.0	22.4	1.3
Cycle Q Clear(g_c), s	2.9	0.0	14.1	4.0	0.0	19.4	2.6	13.8	0.4	4.0	22.4	1.3
Prop In Lane	1.00		0.91	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	205	0	120	1127	0	380	49	1848	514	75	1923	532
V/C Ratio(X)	0.23	0.00	1.15	0.14	0.00	0.59	0.78	0.41	0.02	0.78	0.60	0.04
Avail Cap(c_a), veh/h	205	0	120	1223	0	413	110	1848	514	154	1923	532
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	0.0	54.3	30.0	0.0	35.3	59.3	29.4	25.1	58.2	30.8	24.2
Incr Delay (d2), s/veh	0.2	0.0	126.9	0.1	0.0	2.1	9.7	0.7	0.1	6.3	1.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	7.9	1.7	0.0	5.9	1.3	5.6	0.2	1.9	9.1	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.6	0.0	181.2	30.1	0.0	37.4	69.0	30.1	25.2	64.5	32.2	24.4
LnGrp LOS	D	A	F	C	A	D	E	C	C	E	C	C
Approach Vol, veh/h		184			388			813			1240	
Approach Delay, s/veh		147.5			34.3			31.8			33.6	
Approach LOS		F			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.5	50.4		19.0	7.7	52.2		43.7
Change Period (Y+Rc), s	4.4	6.0		4.9	4.4	* 6		4.9
Max Green Setting (Gmax), s	10.6	43.0		14.1	7.6	* 46		42.1
Max Q Clear Time (g_c+I1), s	6.0	15.8		16.1	4.6	24.4		21.4
Green Ext Time (p_c), s	0.0	12.0		0.0	0.0	14.5		1.7

Intersection Summary	
HCM 6th Ctrl Delay	41.2
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	0	122	0	0	0	78	745	0	2	1349	15
Future Volume (veh/h)	27	0	122	0	0	0	78	745	0	2	1349	15
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	0	1870				1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h	28	0	128				82	784	0	2	1420	16
Peak Hour Factor	0.95	0.92	0.95				0.95	0.95	0.92	0.92	0.95	0.95
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	183	0	163				106	3782	0	4	3556	40
Arrive On Green	0.10	0.00	0.10				0.06	0.74	0.00	0.00	0.68	0.68
Sat Flow, veh/h	1781	0	1585				1781	5274	0	1781	5202	59
Grp Volume(v), veh/h	28	0	128				82	784	0	2	929	507
Grp Sat Flow(s),veh/h/ln	1781	0	1585				1781	1702	0	1781	1702	1857
Q Serve(g_s), s	1.4	0.0	7.7				4.4	4.6	0.0	0.1	11.6	11.6
Cycle Q Clear(g_c), s	1.4	0.0	7.7				4.4	4.6	0.0	0.1	11.6	11.6
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.03
Lane Grp Cap(c), veh/h	183	0	163				106	3782	0	4	2327	1269
V/C Ratio(X)	0.15	0.00	0.79				0.78	0.21	0.00	0.52	0.40	0.40
Avail Cap(c_a), veh/h	694	0	618				321	3782	0	84	2327	1269
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	0.0	42.8				45.3	3.9	0.0	48.7	6.7	6.7
Incr Delay (d2), s/veh	0.4	0.0	8.1				4.6	0.1	0.0	79.6	0.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.4				2.0	1.1	0.0	0.1	3.4	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.4	0.0	50.9				49.9	4.0	0.0	128.4	7.2	7.7
LnGrp LOS	D	A	D				D	A	A	F	A	A
Approach Vol, veh/h		156						866			1438	
Approach Delay, s/veh		49.0						8.4			7.6	
Approach LOS		D						A			A	

Timer - Assigned Phs	1	2	4	5	6
Phs Duration (G+Y+Rc), s	4.6	78.2	14.9	10.2	72.6
Change Period (Y+Rc), s	4.4	* 5.8	4.9	4.4	5.8
Max Green Setting (Gmax), s	4.6	* 72	38.1	17.6	59.2
Max Q Clear Time (g_c+I1), s	2.1	6.6	9.7	6.4	13.6
Green Ext Time (p_c), s	0.0	8.8	0.5	0.1	14.7

Intersection Summary	
HCM 6th Ctrl Delay	10.5
HCM 6th LOS	B

Notes

User approved ignoring U-Turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1787	793	388	695	0	0	0	0	386	2	334
Future Volume (veh/h)	0	1787	793	388	695	0	0	0	0	386	2	334
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1901	844	413	739	0				412	0	355
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	3874	1427	494	3609	0				558	0	496
Arrive On Green	0.00	0.51	0.51	0.29	1.00	0.00				0.16	0.00	0.16
Sat Flow, veh/h	0	7930	2790	3456	5274	0				3563	0	3170
Grp Volume(v), veh/h	0	1901	844	413	739	0				412	0	355
Grp Sat Flow(s),veh/h/ln	0	1515	1395	1728	1702	0				1781	0	1585
Q Serve(g_s), s	0.0	14.7	19.1	10.1	0.0	0.0				9.9	0.0	9.6
Cycle Q Clear(g_c), s	0.0	14.7	19.1	10.1	0.0	0.0				9.9	0.0	9.6
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3874	1427	494	3609	0				558	0	496
V/C Ratio(X)	0.00	0.49	0.59	0.84	0.20	0.00				0.74	0.00	0.72
Avail Cap(c_a), veh/h	0	3874	1427	703	3609	0				827	0	736
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.91	0.91	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	14.3	15.4	31.1	0.0	0.0				36.2	0.0	36.0
Incr Delay (d2), s/veh	0.0	0.4	1.8	5.5	0.1	0.0				1.9	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.4	5.5	3.7	0.0	0.0				4.4	0.0	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	14.8	17.2	36.7	0.1	0.0				38.1	0.0	38.0
LnGrp LOS	A	B	B	D	A	A				D	A	D
Approach Vol, veh/h		2745			1152						767	
Approach Delay, s/veh		15.5			13.2						38.1	
Approach LOS		B			B						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	17.6	53.2		19.2		70.8
Change Period (Y+Rc), s	4.7	7.2		5.1		7.2
Max Green Setting (Gmax), s	13.0	33.8		20.9		56.8
Max Q Clear Time (g_c+I1), s	12.1	21.1		11.9		2.0
Green Ext Time (p_c), s	0.8	10.8		2.2		5.2

Intersection Summary	
HCM 6th Ctrl Delay	18.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1213	964	0	0	782	1410	299	3	184	0	0	0
Future Volume (veh/h)	1213	964	0	0	782	1410	299	3	184	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	1290	1026	0	0	832	1500	320	0	196			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1144	4017	0	0	3097	1141	273	0	243			
Arrive On Green	0.33	0.79	0.00	0.00	0.41	0.41	0.08	0.00	0.08			
Sat Flow, veh/h	3456	5274	0	0	7930	2790	3563	0	3170			
Grp Volume(v), veh/h	1290	1026	0	0	832	1500	320	0	196			
Grp Sat Flow(s),veh/h/ln	1728	1702	0	0	1515	1395	1781	0	1585			
Q Serve(g_s), s	29.8	4.8	0.0	0.0	6.6	36.8	6.9	0.0	5.5			
Cycle Q Clear(g_c), s	29.8	4.8	0.0	0.0	6.6	36.8	6.9	0.0	5.5			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1144	4017	0	0	3097	1141	273	0	243			
V/C Ratio(X)	1.13	0.26	0.00	0.00	0.27	1.32	1.17	0.00	0.81			
Avail Cap(c_a), veh/h	1144	4017	0	0	3097	1141	273	0	243			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.80	0.80	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	30.1	2.6	0.0	0.0	17.7	26.6	41.5	0.0	40.9			
Incr Delay (d2), s/veh	66.9	0.1	0.0	0.0	0.2	148.1	109.1	0.0	17.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	21.7	0.7	0.0	0.0	2.1	34.0	7.1	0.0	2.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.0	2.7	0.0	0.0	17.9	174.7	150.6	0.0	58.7			
LnGrp LOS	F	A	A	A	B	F	F	A	E			
Approach Vol, veh/h		2316			2332			516				
Approach Delay, s/veh		55.2			118.7			115.7				
Approach LOS		E			F			F				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		78.0			34.0	44.0		12.0				
Change Period (Y+Rc), s		7.2			* 4.2	7.2		5.1				
Max Green Setting (Gmax), s		70.8			* 30	36.8		6.9				
Max Q Clear Time (g_c+I1), s		6.8			31.8	38.8		8.9				
Green Ext Time (p_c), s		7.9			0.0	0.0		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	89.9
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

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

OPENING YEAR WITHOUT PROJECT CONDITIONS

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	9	30	47	57	0	0	0	0	187	0	29
Future Vol, veh/h	0	9	30	47	57	0	0	0	0	187	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	40	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	10	34	53	64	0	0	0	0	210	0	33

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	44	0	0			197	214	64
Stage 1	-	-	-	-	-	-			170	170	-
Stage 2	-	-	-	-	-	-			27	44	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1564	-	0			792	684	1000
Stage 1	0	-	-	-	-	0			860	758	-
Stage 2	0	-	-	-	-	0			996	858	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	1564	-	-			764	0	1000
Mov Cap-2 Maneuver	-	-	-	-	-	-			764	0	-
Stage 1	-	-	-	-	-	-			860	0	-
Stage 2	-	-	-	-	-	-			961	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	3.3	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1564	-	764	1000
HCM Lane V/C Ratio	-	-	0.034	-	0.275	0.033
HCM Control Delay (s)	-	-	7.4	0	11.5	8.7
HCM Lane LOS	-	-	A	A	B	A
HCM 95th %tile Q(veh)	-	-	0.1	-	1.1	0.1

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	177	45	16	3	11
Future Vol, veh/h	21	177	45	16	3	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	186	47	17	3	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	64	0	-	0	286	56
Stage 1	-	-	-	-	56	-
Stage 2	-	-	-	-	230	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1538	-	-	-	704	1011
Stage 1	-	-	-	-	967	-
Stage 2	-	-	-	-	808	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1538	-	-	-	693	1011
Mov Cap-2 Maneuver	-	-	-	-	693	-
Stage 1	-	-	-	-	952	-
Stage 2	-	-	-	-	808	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1538	-	-	-	920
HCM Lane V/C Ratio	0.014	-	-	-	0.016
HCM Control Delay (s)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	80	88	39	31	5	8
Future Vol, veh/h	80	88	39	31	5	8
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	93	102	45	36	6	9
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8	8	7.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	56%	48%	0%
Vol Thru, %	44%	0%	38%
Vol Right, %	0%	52%	62%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	70	168	13
LT Vol	39	80	0
Through Vol	31	0	5
RT Vol	0	88	8
Lane Flow Rate	81	195	15
Geometry Grp	1	1	1
Degree of Util (X)	0.1	0.211	0.017
Departure Headway (Hd)	4.401	3.88	3.972
Convergence, Y/N	Yes	Yes	Yes
Cap	805	916	885
Service Time	2.478	1.942	2.071
HCM Lane V/C Ratio	0.101	0.213	0.017
HCM Control Delay	8	8	7.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0.8	0.1

Intersection	
Intersection Delay, s/veh	15.9
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	203	364	34	11	41	62
Future Vol, veh/h	203	364	34	11	41	62
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	214	383	36	12	43	65
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	17.7	8	9.1
HCM LOS	C	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	36%	0%	40%
Vol Thru, %	64%	76%	0%
Vol Right, %	0%	24%	60%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	567	45	103
LT Vol	203	0	41
Through Vol	364	34	0
RT Vol	0	11	62
Lane Flow Rate	597	47	108
Geometry Grp	1	1	1
Degree of Util (X)	0.72	0.062	0.154
Departure Headway (Hd)	4.34	4.695	5.106
Convergence, Y/N	Yes	Yes	Yes
Cap	836	761	701
Service Time	2.365	2.737	3.146
HCM Lane V/C Ratio	0.714	0.062	0.154
HCM Control Delay	17.7	8	9.1
HCM Lane LOS	C	A	A
HCM 95th-tile Q	6.3	0.2	0.5

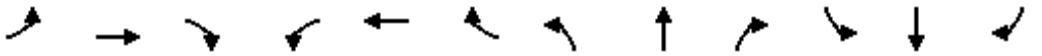
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	4	47	74	8	17	114	712	618	189	652	32
Future Volume (veh/h)	9	4	47	74	8	17	114	712	618	189	652	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.97	1.00		0.99	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	10	4	53	89	0	19	128	800	694	212	733	36
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	24	69	309	0	133	162	2571	790	252	2831	833
Arrive On Green	0.05	0.05	0.05	0.09	0.00	0.09	0.09	0.50	0.50	0.14	0.55	0.55
Sat Flow, veh/h	1290	516	1457	3563	0	1536	1781	5106	1569	1781	5106	1502
Grp Volume(v), veh/h	14	0	53	89	0	19	128	800	694	212	733	36
Grp Sat Flow(s),veh/h/ln	1806	0	1457	1781	0	1536	1781	1702	1569	1781	1702	1502
Q Serve(g_s), s	0.7	0.0	3.2	2.1	0.0	1.0	6.3	8.3	35.5	10.5	6.7	1.0
Cycle Q Clear(g_c), s	0.7	0.0	3.2	2.1	0.0	1.0	6.3	8.3	35.5	10.5	6.7	1.0
Prop In Lane	0.71		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	85	0	69	309	0	133	162	2571	790	252	2831	833
V/C Ratio(X)	0.16	0.00	0.77	0.29	0.00	0.14	0.79	0.31	0.88	0.84	0.26	0.04
Avail Cap(c_a), veh/h	102	0	82	1502	0	647	346	2571	790	427	2831	833
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.2	0.0	42.5	38.5	0.0	38.1	40.2	13.2	19.9	37.7	10.5	9.2
Incr Delay (d2), s/veh	0.9	0.0	29.8	0.5	0.0	0.5	8.4	0.3	13.2	7.4	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.7	0.9	0.0	0.4	3.0	2.9	13.9	4.8	2.2	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.1	0.0	72.3	39.1	0.0	38.5	48.5	13.5	33.1	45.1	10.7	9.3
LnGrp LOS	D	A	E	D	A	D	D	B	C	D	B	A
Approach Vol, veh/h		67			108			1622			981	
Approach Delay, s/veh		66.0			39.0			24.7			18.1	
Approach LOS		E			D			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.2	51.1		9.2	12.6	55.7		12.7
Change Period (Y+Rc), s	4.4	5.7		4.9	4.4	5.7		4.9
Max Green Setting (Gmax), s	21.6	45.4		5.1	17.5	49.5		38.0
Max Q Clear Time (g_c+I1), s	12.5	37.5		5.2	8.3	8.7		4.1
Green Ext Time (p_c), s	0.4	4.6		0.0	0.2	5.4		0.3

Intersection Summary	
HCM 6th Ctrl Delay	23.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	9	75	39	16	90	127	1349	117	156	553	56
Future Volume (veh/h)	19	9	75	39	16	90	127	1349	117	156	553	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.62	1.00		0.84	1.00		0.92	1.00		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	10	82	30	34	98	138	1466	127	170	601	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	120	8	62	550	577	413	165	1760	504	198	1854	522
Arrive On Green	0.07	0.07	0.07	0.31	0.31	0.31	0.09	0.34	0.34	0.11	0.36	0.36
Sat Flow, veh/h	1781	112	920	1781	1870	1338	1781	5106	1462	1781	5106	1437
Grp Volume(v), veh/h	21	0	92	30	34	98	138	1466	127	170	601	61
Grp Sat Flow(s),veh/h/ln	1781	0	1033	1781	1870	1338	1781	1702	1462	1781	1702	1437
Q Serve(g_s), s	1.3	0.0	8.1	1.4	1.5	6.6	9.1	31.7	7.5	11.3	10.2	3.4
Cycle Q Clear(g_c), s	1.3	0.0	8.1	1.4	1.5	6.6	9.1	31.7	7.5	11.3	10.2	3.4
Prop In Lane	1.00		0.89	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	120	0	70	550	577	413	165	1760	504	198	1854	522
V/C Ratio(X)	0.17	0.00	1.32	0.05	0.06	0.24	0.84	0.83	0.25	0.86	0.32	0.12
Avail Cap(c_a), veh/h	120	0	70	579	608	435	272	1791	513	306	1897	534
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	0.0	56.0	29.2	29.2	31.0	53.6	36.2	28.2	52.4	27.6	25.4
Incr Delay (d2), s/veh	0.3	0.0	215.4	0.0	0.0	0.3	5.0	4.4	0.9	8.9	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	6.3	0.6	0.7	2.2	4.2	13.3	2.7	5.4	4.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.1	0.0	271.4	29.2	29.3	31.3	58.5	40.6	29.2	61.4	27.9	25.7
LnGrp LOS	D	A	F	C	C	C	E	D	C	E	C	C
Approach Vol, veh/h		113			162			1731			832	
Approach Delay, s/veh		230.8			30.5			41.2			34.6	
Approach LOS		F			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.7	47.4		13.0	15.5	49.6		41.9				
Change Period (Y+Rc), s	4.4	6.0		4.9	4.4	* 6		4.9				
Max Green Setting (Gmax), s	20.6	42.1		8.1	18.3	* 45		39.0				
Max Q Clear Time (g_c+I1), s	13.3	33.7		10.1	11.1	12.2		8.6				
Green Ext Time (p_c), s	0.1	7.7		0.0	0.1	9.8		0.7				

Intersection Summary			
HCM 6th Ctrl Delay		46.2	
HCM 6th LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	0	48	0	0	0	244	1563	0	1	627	44
Future Volume (veh/h)	17	0	48	0	0	0	244	1563	0	1	627	44
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	0	1870				1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h	19	0	53				271	1737	0	1	697	49
Peak Hour Factor	0.90	0.92	0.90				0.90	0.90	0.92	0.92	0.90	0.90
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	85	0	75				308	4052	0	2	3019	211
Arrive On Green	0.05	0.00	0.05				0.17	0.79	0.00	0.00	0.62	0.62
Sat Flow, veh/h	1781	0	1585				1781	5274	0	1781	4855	339
Grp Volume(v), veh/h	19	0	53				271	1737	0	1	487	259
Grp Sat Flow(s),veh/h/ln	1781	0	1585				1781	1702	0	1781	1702	1790
Q Serve(g_s), s	1.0	0.0	3.2				14.2	10.2	0.0	0.1	6.0	6.1
Cycle Q Clear(g_c), s	1.0	0.0	3.2				14.2	10.2	0.0	0.1	6.0	6.1
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.19
Lane Grp Cap(c), veh/h	85	0	75				308	4052	0	2	2117	1113
V/C Ratio(X)	0.22	0.00	0.70				0.88	0.43	0.00	0.51	0.23	0.23
Avail Cap(c_a), veh/h	653	0	581				811	4052	0	74	2117	1113
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	0.0	44.9				38.6	3.1	0.0	47.8	8.0	8.0
Incr Delay (d2), s/veh	1.3	0.0	11.3				3.3	0.3	0.0	130.9	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	3.0				6.2	1.8	0.0	0.1	1.9	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	0.0	56.2				41.9	3.4	0.0	178.7	8.2	8.5
LnGrp LOS	D	A	E				D	A	A	F	A	A
Approach Vol, veh/h		72						2008			747	
Approach Delay, s/veh		53.3						8.6			8.6	
Approach LOS		D						A			A	

Timer - Assigned Phs	1	2	4	5	6
Phs Duration (G+Y+Rc), s	4.5	81.8	9.5	20.9	65.4
Change Period (Y+Rc), s	4.4	* 5.8	4.9	4.4	5.8
Max Green Setting (Gmax), s	4.6	* 76	35.1	43.6	36.2
Max Q Clear Time (g_c+I1), s	2.1	12.2	5.2	16.2	8.1
Green Ext Time (p_c), s	0.0	30.3	0.2	0.3	5.5

Intersection Summary	
HCM 6th Ctrl Delay	9.7
HCM 6th LOS	A

Notes

User approved ignoring U-Turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	507	192	172	1969	0	0	0	0	1406	1	1557
Future Volume (veh/h)	0	507	192	172	1969	0	0	0	0	1406	1	1557
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	557	211	189	2164	0				1546	0	1711
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91				0.91	0.91	0.91
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2256	831	204	2088	0				1619	0	1441
Arrive On Green	0.00	0.30	0.30	0.02	0.13	0.00				0.45	0.00	0.45
Sat Flow, veh/h	0	7930	2790	3456	5274	0				3563	0	3170
Grp Volume(v), veh/h	0	557	211	189	2164	0				1546	0	1711
Grp Sat Flow(s),veh/h/ln	0	1515	1395	1728	1702	0				1781	0	1585
Q Serve(g_s), s	0.0	5.0	5.2	4.9	36.8	0.0				37.6	0.0	40.9
Cycle Q Clear(g_c), s	0.0	5.0	5.2	4.9	36.8	0.0				37.6	0.0	40.9
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2256	831	204	2088	0				1619	0	1441
V/C Ratio(X)	0.00	0.25	0.25	0.93	1.04	0.00				0.95	0.00	1.19
Avail Cap(c_a), veh/h	0	2256	831	204	2088	0				1619	0	1441
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.70	0.70	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	24.0	24.0	43.9	38.9	0.0				23.7	0.0	24.6
Incr Delay (d2), s/veh	0.0	0.3	0.7	34.5	26.9	0.0				13.2	0.0	91.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	1.7	3.0	21.6	0.0				17.6	0.0	32.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	24.2	24.7	78.5	65.8	0.0				36.9	0.0	116.3
LnGrp LOS	A	C	C	E	F	A				D	A	F
Approach Vol, veh/h		768			2353						3257	
Approach Delay, s/veh		24.4			66.8						78.6	
Approach LOS		C			E						E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.0	34.0		46.0		44.0
Change Period (Y+Rc), s *	4.7	7.2		5.1		7.2
Max Green Setting (Gmax), s	5.3	26.8		40.9		36.8
Max Q Clear Time (g_c+I1), s	6.9	7.2		42.9		38.8
Green Ext Time (p_c), s	0.0	4.0		0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	67.7
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	1651	0	0	706	575	1362	3	985	0	0	0
Future Volume (veh/h)	215	1651	0	0	706	575	1362	3	985	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	234	1795	0	0	767	625	1482	0	1071			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	273	2117	0	0	2190	807	1598	0	1422			
Arrive On Green	0.03	0.14	0.00	0.00	0.29	0.29	0.45	0.00	0.45			
Sat Flow, veh/h	3456	5274	0	0	7930	2790	3563	0	3170			
Grp Volume(v), veh/h	234	1795	0	0	767	625	1482	0	1071			
Grp Sat Flow(s),veh/h/ln	1728	1702	0	0	1515	1395	1781	0	1585			
Q Serve(g_s), s	6.1	30.9	0.0	0.0	7.2	18.5	35.3	0.0	25.3			
Cycle Q Clear(g_c), s	6.1	30.9	0.0	0.0	7.2	18.5	35.3	0.0	25.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	273	2117	0	0	2190	807	1598	0	1422			
V/C Ratio(X)	0.86	0.85	0.00	0.00	0.35	0.77	0.93	0.00	0.75			
Avail Cap(c_a), veh/h	273	2117	0	0	2190	807	1619	0	1441			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.66	0.66	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	43.3	36.1	0.0	0.0	25.3	29.3	23.4	0.0	20.7			
Incr Delay (d2), s/veh	16.3	3.0	0.0	0.0	0.4	7.2	9.6	0.0	2.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	8.2	14.3	0.0	0.0	2.4	6.4	16.0	0.0	9.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.7	39.1	0.0	0.0	25.7	36.5	33.0	0.0	22.9			
LnGrp LOS	E	D	A	A	C	D	C	A	C			
Approach Vol, veh/h		2029			1392			2553				
Approach Delay, s/veh		41.4			30.6			28.8				
Approach LOS		D			C			C				

Timer - Assigned Phs	2			5	6		8					
Phs Duration (G+Y+Rc), s	44.5			11.3	33.2		45.5					
Change Period (Y+Rc), s	7.2			* 4.2	7.2		5.1					
Max Green Setting (Gmax), s	36.8			* 7.1	25.5		40.9					
Max Q Clear Time (g_c+I1), s	32.9			8.1	20.5		37.3					
Green Ext Time (p_c), s	3.2			0.0	3.1		3.0					

Intersection Summary	
HCM 6th Ctrl Delay	33.5
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	61	116	320	53	0	0	0	0	9	0	22
Future Vol, veh/h	0	61	116	320	53	0	0	0	0	9	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	40	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	71	135	372	62	0	0	0	0	10	0	26

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	206	0	0	945	1012	62
Stage 1	-	-	-	-	-	-	806	806	-
Stage 2	-	-	-	-	-	-	139	206	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1365	-	0	291	239	1003
Stage 1	0	-	-	-	-	0	439	395	-
Stage 2	0	-	-	-	-	0	888	731	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1365	-	-	209	0	1003
Mov Cap-2 Maneuver	-	-	-	-	-	-	209	0	-
Stage 1	-	-	-	-	-	-	439	0	-
Stage 2	-	-	-	-	-	-	638	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	7.4	12.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1365	-	209	1003
HCM Lane V/C Ratio	-	-	0.273	-	0.05	0.026
HCM Control Delay (s)	-	-	8.6	0	23.1	8.7
HCM Lane LOS	-	-	A	A	C	A
HCM 95th %tile Q(veh)	-	-	1.1	-	0.2	0.1

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	13	291	151	2	53
Future Vol, veh/h	55	13	291	151	2	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	15	327	170	2	60

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	497	0	-	0	551	412
Stage 1	-	-	-	-	412	-
Stage 2	-	-	-	-	139	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1067	-	-	-	495	640
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	888	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1067	-	-	-	466	640
Mov Cap-2 Maneuver	-	-	-	-	466	-
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	888	-

Approach	EB	WB	SB
HCM Control Delay, s	6.9	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1067	-	-	-	631
HCM Lane V/C Ratio	0.058	-	-	-	0.098
HCM Control Delay (s)	8.6	0	-	-	11.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	28	86	7	38	71
Future Vol, veh/h	8	28	86	7	38	71
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	34	105	9	46	87
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.2	8	7.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	92%	22%	0%
Vol Thru, %	8%	0%	35%
Vol Right, %	0%	78%	65%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	93	36	109
LT Vol	86	8	0
Through Vol	7	0	38
RT Vol	0	28	71
Lane Flow Rate	113	44	133
Geometry Grp	1	1	1
Degree of Util (X)	0.135	0.048	0.137
Departure Headway (Hd)	4.296	3.93	3.705
Convergence, Y/N	Yes	Yes	Yes
Cap	832	894	961
Service Time	2.331	2.029	1.752
HCM Lane V/C Ratio	0.136	0.049	0.138
HCM Control Delay	8	7.2	7.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.5	0.2	0.5

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	91	37	306	41	7	157
Future Vol, veh/h	91	37	306	41	7	157
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	108	44	364	49	8	187
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	9.4	12.4	9.3
HCM LOS	A	B	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	71%	0%	4%
Vol Thru, %	29%	88%	0%
Vol Right, %	0%	12%	96%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	128	347	164
LT Vol	91	0	7
Through Vol	37	306	0
RT Vol	0	41	157
Lane Flow Rate	152	413	195
Geometry Grp	1	1	1
Degree of Util (X)	0.212	0.518	0.253
Departure Headway (Hd)	5.003	4.512	4.657
Convergence, Y/N	Yes	Yes	Yes
Cap	713	797	767
Service Time	3.064	2.561	2.713
HCM Lane V/C Ratio	0.213	0.518	0.254
HCM Control Delay	9.4	12.4	9.3
HCM Lane LOS	A	B	A
HCM 95th-tile Q	0.8	3	1

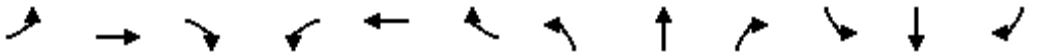
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	2	64	497	4	153	69	930	99	16	724	12
Future Volume (veh/h)	17	2	64	497	4	153	69	930	99	16	724	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.98	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	2	67	526	0	161	73	979	104	17	762	13
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	97	11	88	806	0	351	97	2477	732	27	2276	670
Arrive On Green	0.06	0.06	0.06	0.23	0.00	0.23	0.05	0.49	0.49	0.02	0.45	0.45
Sat Flow, veh/h	1611	179	1459	3563	0	1551	1781	5106	1509	1781	5106	1503
Grp Volume(v), veh/h	20	0	67	526	0	161	73	979	104	17	762	13
Grp Sat Flow(s),veh/h/ln	1790	0	1459	1781	0	1551	1781	1702	1509	1781	1702	1503
Q Serve(g_s), s	1.0	0.0	4.2	12.5	0.0	8.4	3.8	11.4	3.6	0.9	9.1	0.5
Cycle Q Clear(g_c), s	1.0	0.0	4.2	12.5	0.0	8.4	3.8	11.4	3.6	0.9	9.1	0.5
Prop In Lane	0.90		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	108	0	88	806	0	351	97	2477	732	27	2276	670
V/C Ratio(X)	0.19	0.00	0.76	0.65	0.00	0.46	0.75	0.40	0.14	0.62	0.33	0.02
Avail Cap(c_a), veh/h	194	0	158	1797	0	782	298	2477	732	145	2276	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	0.0	43.2	32.8	0.0	31.2	43.5	15.3	13.3	45.7	16.9	14.5
Incr Delay (d2), s/veh	0.8	0.0	12.6	0.9	0.0	0.9	11.0	0.5	0.4	21.2	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.8	5.4	0.0	3.2	1.9	4.1	1.2	0.5	3.3	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.5	0.0	55.8	33.7	0.0	32.1	54.5	15.8	13.7	66.9	17.3	14.5
LnGrp LOS	D	A	E	C	A	C	D	B	B	E	B	B
Approach Vol, veh/h		87			687			1156			792	
Approach Delay, s/veh		52.7			33.3			18.1			18.3	
Approach LOS		D			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.8	51.0		10.5	9.5	47.3		26.0
Change Period (Y+Rc), s	4.4	5.7		4.9	4.4	5.7		4.9
Max Green Setting (Gmax), s	7.6	45.3		10.1	15.6	37.3		47.1
Max Q Clear Time (g_c+I1), s	2.9	13.4		6.2	5.8	11.1		14.5
Green Ext Time (p_c), s	0.0	7.7		0.1	0.1	5.2		2.6

Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	12	118	208	15	237	37	772	16	62	1332	24
Future Volume (veh/h)	45	12	118	208	15	237	37	772	16	62	1332	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.62	1.00		0.76	1.00		0.89	1.00		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	13	124	230	0	249	39	813	17	65	1402	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	11	103	1134	0	383	50	1830	508	83	1926	533
Arrive On Green	0.11	0.11	0.11	0.32	0.00	0.32	0.03	0.36	0.36	0.05	0.38	0.38
Sat Flow, veh/h	1781	98	934	3563	0	1204	1781	5106	1417	1781	5106	1412
Grp Volume(v), veh/h	47	0	137	230	0	249	39	813	17	65	1402	25
Grp Sat Flow(s),veh/h/ln	1781	0	1032	1781	0	1204	1781	1702	1417	1781	1702	1412
Q Serve(g_s), s	2.9	0.0	13.5	5.7	0.0	21.7	2.7	14.8	0.9	4.4	28.7	1.4
Cycle Q Clear(g_c), s	2.9	0.0	13.5	5.7	0.0	21.7	2.7	14.8	0.9	4.4	28.7	1.4
Prop In Lane	1.00		0.91	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	197	0	114	1134	0	383	50	1830	508	83	1926	533
V/C Ratio(X)	0.24	0.00	1.20	0.20	0.00	0.65	0.78	0.44	0.03	0.78	0.73	0.05
Avail Cap(c_a), veh/h	197	0	114	1142	0	386	105	1951	541	155	2102	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.5	0.0	54.2	30.3	0.0	35.7	58.9	29.9	25.4	57.5	32.6	24.1
Incr Delay (d2), s/veh	0.2	0.0	147.5	0.1	0.0	3.9	9.5	0.6	0.1	5.8	1.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	8.2	2.5	0.0	6.8	1.3	6.0	0.3	2.1	11.6	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.8	0.0	201.7	30.4	0.0	39.6	68.4	30.5	25.5	63.3	34.5	24.2
LnGrp LOS	D	A	F	C	A	D	E	C	C	E	C	C
Approach Vol, veh/h		184			479			869			1492	
Approach Delay, s/veh		162.9			35.2			32.1			35.5	
Approach LOS		F			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.1	49.7		18.4	7.8	52.0		43.7				
Change Period (Y+Rc), s	4.4	6.0		4.9	4.4	* 6		4.9				
Max Green Setting (Gmax), s	10.6	46.6		13.5	7.2	* 50		39.1				
Max Q Clear Time (g_c+I1), s	6.4	16.8		15.5	4.7	30.7		23.7				
Green Ext Time (p_c), s	0.0	13.5		0.0	0.0	15.3		2.0				

Intersection Summary			
HCM 6th Ctrl Delay		42.2	
HCM 6th LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	0	122	0	0	0	79	797	0	2	1643	18
Future Volume (veh/h)	27	0	122	0	0	0	79	797	0	2	1643	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	0	1870				1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h	28	0	128				83	839	0	2	1729	19
Peak Hour Factor	0.95	0.92	0.95				0.95	0.95	0.92	0.92	0.95	0.95
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	182	0	162				107	3802	0	4	3575	39
Arrive On Green	0.10	0.00	0.10				0.06	0.74	0.00	0.00	0.69	0.69
Sat Flow, veh/h	1781	0	1585				1781	5274	0	1781	5204	57
Grp Volume(v), veh/h	28	0	128				83	839	0	2	1131	617
Grp Sat Flow(s),veh/h/ln	1781	0	1585				1781	1702	0	1781	1702	1857
Q Serve(g_s), s	1.4	0.0	7.9				4.6	5.0	0.0	0.1	15.6	15.6
Cycle Q Clear(g_c), s	1.4	0.0	7.9				4.6	5.0	0.0	0.1	15.6	15.6
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.03
Lane Grp Cap(c), veh/h	182	0	162				107	3802	0	4	2338	1276
V/C Ratio(X)	0.15	0.00	0.79				0.78	0.22	0.00	0.52	0.48	0.48
Avail Cap(c_a), veh/h	644	0	573				278	3802	0	82	2338	1276
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	0.0	43.8				46.3	3.9	0.0	49.8	7.3	7.3
Incr Delay (d2), s/veh	0.4	0.0	8.3				4.6	0.1	0.0	79.7	0.7	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.4				2.1	1.2	0.0	0.1	4.6	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	0.0	52.1				50.9	4.0	0.0	129.5	8.1	8.7
LnGrp LOS	D	A	D				D	A	A	F	A	A
Approach Vol, veh/h		156						922			1750	
Approach Delay, s/veh		50.2						8.3			8.4	
Approach LOS		D						A			A	

Timer - Assigned Phs	1	2	4	5	6
Phs Duration (G+Y+Rc), s	4.6	80.2	15.1	10.4	74.4
Change Period (Y+Rc), s	4.4	* 5.8	4.9	4.4	5.8
Max Green Setting (Gmax), s	4.6	* 74	36.1	15.6	63.2
Max Q Clear Time (g_c+I1), s	2.1	7.0	9.9	6.6	17.6
Green Ext Time (p_c), s	0.0	9.6	0.5	0.0	20.1

Intersection Summary	
HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B

Notes

User approved ignoring U-Turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1959	909	388	713	0	0	0	0	386	2	347
Future Volume (veh/h)	0	1959	909	388	713	0	0	0	0	386	2	347
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	2084	967	413	759	0				412	0	369
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	3866	1424	494	3603	0				562	0	500
Arrive On Green	0.00	0.51	0.51	0.29	1.00	0.00				0.16	0.00	0.16
Sat Flow, veh/h	0	7930	2790	3456	5274	0				3563	0	3170
Grp Volume(v), veh/h	0	2084	967	413	759	0				412	0	369
Grp Sat Flow(s),veh/h/ln	0	1515	1395	1728	1702	0				1781	0	1585
Q Serve(g_s), s	0.0	16.7	23.4	10.1	0.0	0.0				9.9	0.0	10.0
Cycle Q Clear(g_c), s	0.0	16.7	23.4	10.1	0.0	0.0				9.9	0.0	10.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3866	1424	494	3603	0				562	0	500
V/C Ratio(X)	0.00	0.54	0.68	0.84	0.21	0.00				0.73	0.00	0.74
Avail Cap(c_a), veh/h	0	3866	1424	703	3603	0				827	0	736
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.90	0.90	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	14.9	16.5	31.1	0.0	0.0				36.1	0.0	36.1
Incr Delay (d2), s/veh	0.0	0.5	2.6	5.5	0.1	0.0				1.9	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.0	6.8	3.7	0.0	0.0				4.4	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.4	19.1	36.6	0.1	0.0				38.0	0.0	38.3
LnGrp LOS	A	B	B	D	A	A				D	A	D
Approach Vol, veh/h		3051			1172						781	
Approach Delay, s/veh		16.6			13.0						38.1	
Approach LOS		B			B						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	17.6	53.1		19.3		70.7
Change Period (Y+Rc), s	* 4.7	7.2		5.1		7.2
Max Green Setting (Gmax), s	* 13	33.8		20.9		56.8
Max Q Clear Time (g_c+I1), s	12.1	25.4		12.0		2.0
Green Ext Time (p_c), s	0.8	7.7		2.2		5.3

Intersection Summary	
HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1337	1013	0	0	788	1410	310	3	184	0	0	0
Future Volume (veh/h)	1337	1013	0	0	788	1410	310	3	184	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	1422	1078	0	0	838	1500	332	0	196			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1144	4017	0	0	3097	1141	273	0	243			
Arrive On Green	0.33	0.79	0.00	0.00	0.41	0.41	0.08	0.00	0.08			
Sat Flow, veh/h	3456	5274	0	0	7930	2790	3563	0	3170			
Grp Volume(v), veh/h	1422	1078	0	0	838	1500	332	0	196			
Grp Sat Flow(s),veh/h/ln	1728	1702	0	0	1515	1395	1781	0	1585			
Q Serve(g_s), s	29.8	5.1	0.0	0.0	6.6	36.8	6.9	0.0	5.5			
Cycle Q Clear(g_c), s	29.8	5.1	0.0	0.0	6.6	36.8	6.9	0.0	5.5			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1144	4017	0	0	3097	1141	273	0	243			
V/C Ratio(X)	1.24	0.27	0.00	0.00	0.27	1.32	1.22	0.00	0.81			
Avail Cap(c_a), veh/h	1144	4017	0	0	3097	1141	273	0	243			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.75	0.75	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	30.1	2.6	0.0	0.0	17.7	26.6	41.5	0.0	40.9			
Incr Delay (d2), s/veh	115.0	0.1	0.0	0.0	0.2	148.1	125.7	0.0	17.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	29.3	0.7	0.0	0.0	2.1	34.0	7.8	0.0	2.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	145.1	2.7	0.0	0.0	17.9	174.7	167.2	0.0	58.7			
LnGrp LOS	F	A	A	A	B	F	F	A	E			
Approach Vol, veh/h		2500			2338			528				
Approach Delay, s/veh		83.7			118.5			126.9				
Approach LOS		F			F			F				

Timer - Assigned Phs	2			5	6		8				
Phs Duration (G+Y+Rc), s	78.0			34.0	44.0		12.0				
Change Period (Y+Rc), s	7.2			* 4.2	7.2		5.1				
Max Green Setting (Gmax), s	70.8			* 30	36.8		6.9				
Max Q Clear Time (g_c+I1), s	7.1			31.8	38.8		8.9				
Green Ext Time (p_c), s	8.5			0.0	0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	103.1	
HCM 6th LOS	F	

Notes

User approved volume balancing among the lanes for turning movement.

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

OPENING YEAR WITH PROJECT CONDITIONS

Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	9	30	56	57	0	0	0	0	187	0	29
Future Vol, veh/h	0	9	30	56	57	0	0	0	0	187	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	40	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	10	34	63	64	0	0	0	0	210	0	33

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	44	0	0			217	234	64
Stage 1	-	-	-	-	-	-			190	190	-
Stage 2	-	-	-	-	-	-			27	44	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1564	-	0			771	666	1000
Stage 1	0	-	-	-	-	0			842	743	-
Stage 2	0	-	-	-	-	0			996	858	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	1564	-	-			739	0	1000
Mov Cap-2 Maneuver	-	-	-	-	-	-			739	0	-
Stage 1	-	-	-	-	-	-			842	0	-
Stage 2	-	-	-	-	-	-			954	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	3.7	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1564	-	739	1000
HCM Lane V/C Ratio	-	-	0.04	-	0.284	0.033
HCM Control Delay (s)	-	-	7.4	0	11.8	8.7
HCM Lane LOS	-	-	A	A	B	A
HCM 95th %tile Q(veh)	-	-	0.1	-	1.2	0.1

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	177	45	16	3	11
Future Vol, veh/h	21	177	45	16	3	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	186	47	17	3	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	64	0	-	0	286	56
Stage 1	-	-	-	-	56	-
Stage 2	-	-	-	-	230	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1538	-	-	-	704	1011
Stage 1	-	-	-	-	967	-
Stage 2	-	-	-	-	808	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1538	-	-	-	693	1011
Mov Cap-2 Maneuver	-	-	-	-	693	-
Stage 1	-	-	-	-	952	-
Stage 2	-	-	-	-	808	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1538	-	-	-	920
HCM Lane V/C Ratio	0.014	-	-	-	0.016
HCM Control Delay (s)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	80	89	39	31	6	8
Future Vol, veh/h	80	89	39	31	6	8
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	93	103	45	36	7	9
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8	8	7.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	56%	47%	0%
Vol Thru, %	44%	0%	43%
Vol Right, %	0%	53%	57%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	70	169	14
LT Vol	39	80	0
Through Vol	31	0	6
RT Vol	0	89	8
Lane Flow Rate	81	197	16
Geometry Grp	1	1	1
Degree of Util (X)	0.1	0.212	0.018
Departure Headway (Hd)	4.404	3.88	4
Convergence, Y/N	Yes	Yes	Yes
Cap	805	916	878
Service Time	2.481	1.942	2.1
HCM Lane V/C Ratio	0.101	0.215	0.018
HCM Control Delay	8	8	7.2
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0.8	0.1

Intersection	
Intersection Delay, s/veh	15.9
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	203	364	37	11	41	66
Future Vol, veh/h	203	364	37	11	41	66
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	214	383	39	12	43	69
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	17.9	8.1	9.1
HCM LOS	C	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	36%	0%	38%
Vol Thru, %	64%	77%	0%
Vol Right, %	0%	23%	62%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	567	48	107
LT Vol	203	0	41
Through Vol	364	37	0
RT Vol	0	11	66
Lane Flow Rate	597	51	113
Geometry Grp	1	1	1
Degree of Util (X)	0.722	0.066	0.16
Departure Headway (Hd)	4.356	4.719	5.103
Convergence, Y/N	Yes	Yes	Yes
Cap	830	757	702
Service Time	2.381	2.761	3.144
HCM Lane V/C Ratio	0.719	0.067	0.161
HCM Control Delay	17.9	8.1	9.1
HCM Lane LOS	C	A	A
HCM 95th-tile Q	6.4	0.2	0.6

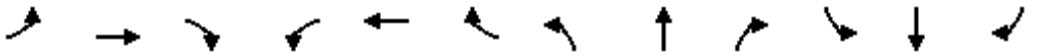
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	4	47	77	8	18	114	789	648	218	661	32
Future Volume (veh/h)	9	4	47	77	8	18	114	789	648	218	661	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.97	1.00		0.99	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	10	4	53	93	0	20	128	887	728	245	743	36
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	24	69	312	0	135	161	2505	770	284	2857	841
Arrive On Green	0.05	0.05	0.05	0.09	0.00	0.09	0.09	0.49	0.49	0.16	0.56	0.56
Sat Flow, veh/h	1290	516	1457	3563	0	1536	1781	5106	1569	1781	5106	1502
Grp Volume(v), veh/h	14	0	53	93	0	20	128	887	728	245	743	36
Grp Sat Flow(s),veh/h/ln	1806	0	1457	1781	0	1536	1781	1702	1569	1781	1702	1502
Q Serve(g_s), s	0.7	0.0	3.3	2.3	0.0	1.1	6.5	9.9	40.8	12.4	6.9	1.0
Cycle Q Clear(g_c), s	0.7	0.0	3.3	2.3	0.0	1.1	6.5	9.9	40.8	12.4	6.9	1.0
Prop In Lane	0.71		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	85	0	69	312	0	135	161	2505	770	284	2857	841
V/C Ratio(X)	0.16	0.00	0.77	0.30	0.00	0.15	0.79	0.35	0.95	0.86	0.26	0.04
Avail Cap(c_a), veh/h	100	0	80	1463	0	631	337	2505	770	416	2857	841
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	0.0	43.6	39.6	0.0	39.0	41.2	14.5	22.4	37.9	10.5	9.2
Incr Delay (d2), s/veh	0.9	0.0	31.3	0.5	0.0	0.5	8.5	0.4	21.7	11.9	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.8	1.0	0.0	0.4	3.1	3.5	17.6	6.1	2.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.2	0.0	74.9	40.1	0.0	39.5	49.8	14.9	44.1	49.8	10.7	9.3
LnGrp LOS	D	A	E	D	A	D	D	B	D	D	B	A
Approach Vol, veh/h		67			113			1743			1024	
Approach Delay, s/veh		68.2			40.0			29.7			20.0	
Approach LOS		E			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.2	51.1		9.3	12.8	57.5		13.0
Change Period (Y+Rc), s	4.4	5.7		4.9	4.4	5.7		4.9
Max Green Setting (Gmax), s	21.6	45.4		5.1	17.5	49.5		38.0
Max Q Clear Time (g_c+I1), s	14.4	42.8		5.3	8.5	8.9		4.3
Green Ext Time (p_c), s	0.4	1.9		0.0	0.2	5.5		0.4

Intersection Summary	
HCM 6th Ctrl Delay	27.6
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	9	75	39	16	93	127	1452	117	156	565	56
Future Volume (veh/h)	20	9	75	39	16	93	127	1452	117	156	565	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.62	1.00		0.84	1.00		0.92	1.00		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	10	82	30	34	101	138	1578	127	170	614	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	120	8	62	548	575	411	165	1771	508	198	1865	525
Arrive On Green	0.07	0.07	0.07	0.31	0.31	0.31	0.09	0.35	0.35	0.11	0.37	0.37
Sat Flow, veh/h	1781	112	919	1781	1870	1338	1781	5106	1463	1781	5106	1438
Grp Volume(v), veh/h	22	0	92	30	34	101	138	1578	127	170	614	61
Grp Sat Flow(s),veh/h/ln	1781	0	1032	1781	1870	1338	1781	1702	1463	1781	1702	1438
Q Serve(g_s), s	1.4	0.0	8.1	1.4	1.5	6.8	9.2	35.2	7.5	11.3	10.5	3.4
Cycle Q Clear(g_c), s	1.4	0.0	8.1	1.4	1.5	6.8	9.2	35.2	7.5	11.3	10.5	3.4
Prop In Lane	1.00		0.89	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	120	0	69	548	575	411	165	1771	508	198	1865	525
V/C Ratio(X)	0.18	0.00	1.33	0.05	0.06	0.25	0.84	0.89	0.25	0.86	0.33	0.12
Avail Cap(c_a), veh/h	120	0	69	576	605	433	270	1782	511	304	1888	532
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.1	0.0	56.3	29.4	29.5	31.3	53.8	37.2	28.2	52.7	27.6	25.4
Incr Delay (d2), s/veh	0.3	0.0	218.6	0.0	0.0	0.3	5.2	6.9	0.9	9.2	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	6.3	0.6	0.7	2.3	4.3	15.1	2.7	5.4	4.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.4	0.0	274.9	29.5	29.5	31.6	59.0	44.1	29.1	61.9	27.9	25.7
LnGrp LOS	D	A	F	C	C	C	E	D	C	E	C	C
Approach Vol, veh/h		114			165			1843			845	
Approach Delay, s/veh		232.2			30.8			44.2			34.6	
Approach LOS		F			C			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.8	47.8		13.0	15.6	50.1		42.0				
Change Period (Y+Rc), s	4.4	6.0		4.9	4.4	* 6		4.9				
Max Green Setting (Gmax), s	20.6	42.1		8.1	18.3	* 45		39.0				
Max Q Clear Time (g_c+I1), s	13.3	37.2		10.1	11.2	12.5		8.8				
Green Ext Time (p_c), s	0.1	4.6		0.0	0.1	10.0		0.7				

Intersection Summary			
HCM 6th Ctrl Delay		47.9	
HCM 6th LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	0	48	0	0	0	244	1665	0	1	638	44
Future Volume (veh/h)	18	0	48	0	0	0	244	1665	0	1	638	44
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	0	1870				1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h	20	0	53				271	1850	0	1	709	49
Peak Hour Factor	0.90	0.92	0.90				0.90	0.90	0.92	0.92	0.90	0.90
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	85	0	76				308	4046	0	2	3017	207
Arrive On Green	0.05	0.00	0.05				0.17	0.79	0.00	0.00	0.62	0.62
Sat Flow, veh/h	1781	0	1585				1781	5274	0	1781	4861	334
Grp Volume(v), veh/h	20	0	53				271	1850	0	1	495	263
Grp Sat Flow(s),veh/h/ln	1781	0	1585				1781	1702	0	1781	1702	1791
Q Serve(g_s), s	1.0	0.0	3.1				14.1	11.2	0.0	0.1	6.1	6.2
Cycle Q Clear(g_c), s	1.0	0.0	3.1				14.1	11.2	0.0	0.1	6.1	6.2
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.19
Lane Grp Cap(c), veh/h	85	0	76				308	4046	0	2	2112	1111
V/C Ratio(X)	0.23	0.00	0.70				0.88	0.46	0.00	0.51	0.23	0.24
Avail Cap(c_a), veh/h	657	0	585				816	4046	0	86	2112	1111
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	0.0	44.6				38.4	3.2	0.0	47.5	8.0	8.0
Incr Delay (d2), s/veh	1.4	0.0	11.0				3.2	0.4	0.0	130.9	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	3.0				6.1	2.0	0.0	0.1	1.9	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.0	0.0	55.6				41.6	3.6	0.0	178.4	8.3	8.5
LnGrp LOS	D	A	E				D	A	A	F	A	A
Approach Vol, veh/h		73						2121			759	
Approach Delay, s/veh		52.7						8.4			8.6	
Approach LOS		D						A			A	

Timer - Assigned Phs	1	2	4	5	6
Phs Duration (G+Y+Rc), s	4.5	81.2	9.5	20.9	64.8
Change Period (Y+Rc), s	4.4	* 5.8	4.9	4.4	5.8
Max Green Setting (Gmax), s	4.6	* 75	35.1	43.6	36.2
Max Q Clear Time (g_c+I1), s	2.1	13.2	5.1	16.1	8.2
Green Ext Time (p_c), s	0.0	33.2	0.2	0.3	5.6

Intersection Summary	
HCM 6th Ctrl Delay	9.6
HCM 6th LOS	A

Notes

User approved ignoring U-Turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	512	195	172	2012	0	0	0	0	1406	1	1588
Future Volume (veh/h)	0	512	195	172	2012	0	0	0	0	1406	1	1588
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	563	214	189	2211	0				1546	0	1745
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91				0.91	0.91	0.91
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2256	831	204	2088	0				1619	0	1441
Arrive On Green	0.00	0.30	0.30	0.02	0.13	0.00				0.45	0.00	0.45
Sat Flow, veh/h	0	7930	2790	3456	5274	0				3563	0	3170
Grp Volume(v), veh/h	0	563	214	189	2211	0				1546	0	1745
Grp Sat Flow(s),veh/h/ln	0	1515	1395	1728	1702	0				1781	0	1585
Q Serve(g_s), s	0.0	5.1	5.3	4.9	36.8	0.0				37.6	0.0	40.9
Cycle Q Clear(g_c), s	0.0	5.1	5.3	4.9	36.8	0.0				37.6	0.0	40.9
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2256	831	204	2088	0				1619	0	1441
V/C Ratio(X)	0.00	0.25	0.26	0.93	1.06	0.00				0.95	0.00	1.21
Avail Cap(c_a), veh/h	0	2256	831	204	2088	0				1619	0	1441
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.68	0.68	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	24.0	24.0	43.9	38.9	0.0				23.7	0.0	24.6
Incr Delay (d2), s/veh	0.0	0.3	0.8	33.9	34.6	0.0				13.2	0.0	101.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	1.7	3.0	23.1	0.0				17.6	0.0	34.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	24.2	24.8	77.8	73.5	0.0				36.9	0.0	126.3
LnGrp LOS	A	C	C	E	F	A				D	A	F
Approach Vol, veh/h		777			2400						3291	
Approach Delay, s/veh		24.4			73.9						84.3	
Approach LOS		C			E						F	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.0	34.0		46.0		44.0
Change Period (Y+Rc), s *	4.7	7.2		5.1		7.2
Max Green Setting (Gmax), s	5.3	26.8		40.9		36.8
Max Q Clear Time (g_c+I1), s	6.9	7.3		42.9		38.8
Green Ext Time (p_c), s	0.0	4.1		0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	73.2
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	219	1653	0	0	720	575	1391	3	985	0	0	0
Future Volume (veh/h)	219	1653	0	0	720	575	1391	3	985	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	238	1797	0	0	783	625	1514	0	1071			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	273	2088	0	0	2146	790	1619	0	1441			
Arrive On Green	0.03	0.13	0.00	0.00	0.28	0.28	0.45	0.00	0.45			
Sat Flow, veh/h	3456	5274	0	0	7930	2790	3563	0	3170			
Grp Volume(v), veh/h	238	1797	0	0	783	625	1514	0	1071			
Grp Sat Flow(s),veh/h/ln	1728	1702	0	0	1515	1395	1781	0	1585			
Q Serve(g_s), s	6.2	31.0	0.0	0.0	7.4	18.6	36.3	0.0	25.1			
Cycle Q Clear(g_c), s	6.2	31.0	0.0	0.0	7.4	18.6	36.3	0.0	25.1			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	273	2088	0	0	2146	790	1619	0	1441			
V/C Ratio(X)	0.87	0.86	0.00	0.00	0.36	0.79	0.94	0.00	0.74			
Avail Cap(c_a), veh/h	273	2088	0	0	2146	790	1619	0	1441			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.66	0.66	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	43.4	36.4	0.0	0.0	25.8	29.8	23.3	0.0	20.2			
Incr Delay (d2), s/veh	18.2	3.3	0.0	0.0	0.5	7.9	11.5	0.0	3.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	8.3	14.5	0.0	0.0	2.5	6.5	16.7	0.0	9.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.6	39.8	0.0	0.0	26.3	37.7	34.8	0.0	23.7			
LnGrp LOS	E	D	A	A	C	D	C	A	C			
Approach Vol, veh/h		2035			1408			2585				
Approach Delay, s/veh		42.3			31.3			30.2				
Approach LOS		D			C			C				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		44.0			11.3	32.7		46.0				
Change Period (Y+Rc), s		7.2			* 4.2	7.2		5.1				
Max Green Setting (Gmax), s		36.8			* 7.1	25.5		40.9				
Max Q Clear Time (g_c+I1), s		33.0			8.2	20.6		38.3				
Green Ext Time (p_c), s		3.1			0.0	3.0		2.3				

Intersection Summary	
HCM 6th Ctrl Delay	34.6
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	11	710	96	0	883
Future Vol, veh/h	0	11	710	96	0	883
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	12	772	104	0	960

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	438	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	484	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	484	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	484	-
HCM Lane V/C Ratio	-	-	0.025	-
HCM Control Delay (s)	-	-	12.6	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	781	151	0	0	1
Future Vol, veh/h	6	781	151	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	849	164	0	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	164	0	-	0	1027	82
Stage 1	-	-	-	-	164	-
Stage 2	-	-	-	-	863	-
Critical Hdwy	4.13	-	-	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	1413	-	-	-	245	962
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	412	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1413	-	-	-	243	962
Mov Cap-2 Maneuver	-	-	-	-	243	-
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	412	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1413	-	-	-	962
HCM Lane V/C Ratio	0.005	-	-	-	0.001
HCM Control Delay (s)	7.6	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	726	144	7	3	7
Future Vol, veh/h	55	726	144	7	3	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	789	157	8	3	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	165	0	-	0	1070	161
Stage 1	-	-	-	-	161	-
Stage 2	-	-	-	-	909	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1413	-	-	-	245	884
Stage 1	-	-	-	-	868	-
Stage 2	-	-	-	-	393	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1413	-	-	-	226	884
Mov Cap-2 Maneuver	-	-	-	-	226	-
Stage 1	-	-	-	-	802	-
Stage 2	-	-	-	-	393	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1413	-	-	-	472
HCM Lane V/C Ratio	0.042	-	-	-	0.023
HCM Control Delay (s)	7.7	0	-	-	12.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	718	144	0	0	4
Future Vol, veh/h	11	718	144	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	780	157	0	0	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	157	0	-	0	961	157
Stage 1	-	-	-	-	157	-
Stage 2	-	-	-	-	804	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1423	-	-	-	284	889
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	440	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1423	-	-	-	280	889
Mov Cap-2 Maneuver	-	-	-	-	280	-
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	440	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1423	-	-	-	889
HCM Lane V/C Ratio	0.008	-	-	-	0.005
HCM Control Delay (s)	7.6	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	21	34	103	154	9
Future Vol, veh/h	12	21	34	103	154	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	23	37	112	167	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	358	172	177	0	-	0
Stage 1	172	-	-	-	-	-
Stage 2	186	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	640	872	1399	-	-	-
Stage 1	858	-	-	-	-	-
Stage 2	846	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	622	872	1399	-	-	-
Mov Cap-2 Maneuver	622	-	-	-	-	-
Stage 1	834	-	-	-	-	-
Stage 2	846	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	1.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1399	-	761	-	-
HCM Lane V/C Ratio	0.026	-	0.047	-	-
HCM Control Delay (s)	7.6	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	6	23	92	157	3
Future Vol, veh/h	2	6	23	92	157	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	7	25	100	171	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	323	173	174	0	-	0
Stage 1	173	-	-	-	-	-
Stage 2	150	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	671	871	1403	-	-	-
Stage 1	857	-	-	-	-	-
Stage 2	878	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	658	871	1403	-	-	-
Mov Cap-2 Maneuver	658	-	-	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	878	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	1.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1403	-	806	-	-
HCM Lane V/C Ratio	0.018	-	0.011	-	-
HCM Control Delay (s)	7.6	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	165	40	1	45	5	2
Future Vol, veh/h	165	40	1	45	5	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	179	43	1	49	5	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	222	0	252	201
Stage 1	-	-	-	-	201	-
Stage 2	-	-	-	-	51	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1347	-	737	840
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	971	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1347	-	736	840
Mov Cap-2 Maneuver	-	-	-	-	736	-
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	970	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	763	-	-	1347	-
HCM Lane V/C Ratio	0.01	-	-	0.001	-
HCM Control Delay (s)	9.8	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	61	116	388	53	0	0	0	0	9	0	22
Future Vol, veh/h	0	61	116	388	53	0	0	0	0	9	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	40	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	71	135	451	62	0	0	0	0	10	0	26

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	0	206	0	0			1103	1170	62
Stage 1	-	-	-	-	-	-			964	964	-
Stage 2	-	-	-	-	-	-			139	206	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1365	-	0			234	193	1003
Stage 1	0	-	-	-	-	0			370	334	-
Stage 2	0	-	-	-	-	0			888	731	-
Platoon blocked, %		-	-		-						
Mov Cap-1 Maneuver	-	-	-	1365	-	-			154	0	1003
Mov Cap-2 Maneuver	-	-	-	-	-	-			154	0	-
Stage 1	-	-	-	-	-	-			370	0	-
Stage 2	-	-	-	-	-	-			584	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	7.9	14.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1365	-	154	1003
HCM Lane V/C Ratio	-	-	0.331	-	0.068	0.026
HCM Control Delay (s)	-	-	8.9	0	30.1	8.7
HCM Lane LOS	-	-	A	A	D	A
HCM 95th %tile Q(veh)	-	-	1.5	-	0.2	0.1

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	13	291	151	2	53
Future Vol, veh/h	55	13	291	151	2	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	15	327	170	2	60

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	497	0	-	0	551	412
Stage 1	-	-	-	-	412	-
Stage 2	-	-	-	-	139	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1067	-	-	-	495	640
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	888	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1067	-	-	-	466	640
Mov Cap-2 Maneuver	-	-	-	-	466	-
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	888	-

Approach	EB	WB	SB
HCM Control Delay, s	6.9	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1067	-	-	-	631
HCM Lane V/C Ratio	0.058	-	-	-	0.098
HCM Control Delay (s)	8.6	0	-	-	11.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	28	87	8	38	71
Future Vol, veh/h	8	28	87	8	38	71
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	34	106	10	46	87
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.2	8	7.4
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	92%	22%	0%
Vol Thru, %	8%	0%	35%
Vol Right, %	0%	78%	65%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	95	36	109
LT Vol	87	8	0
Through Vol	8	0	38
RT Vol	0	28	71
Lane Flow Rate	116	44	133
Geometry Grp	1	1	1
Degree of Util (X)	0.138	0.048	0.137
Departure Headway (Hd)	4.295	3.934	3.707
Convergence, Y/N	Yes	Yes	Yes
Cap	833	893	961
Service Time	2.329	2.034	1.755
HCM Lane V/C Ratio	0.139	0.049	0.138
HCM Control Delay	8	7.2	7.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.5	0.2	0.5

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	95	40	306	41	7	157
Future Vol, veh/h	95	40	306	41	7	157
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	113	48	364	49	8	187
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	9.5	12.4	9.3
HCM LOS	A	B	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	70%	0%	4%
Vol Thru, %	30%	88%	0%
Vol Right, %	0%	12%	96%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	135	347	164
LT Vol	95	0	7
Through Vol	40	306	0
RT Vol	0	41	157
Lane Flow Rate	161	413	195
Geometry Grp	1	1	1
Degree of Util (X)	0.223	0.519	0.254
Departure Headway (Hd)	5.004	4.524	4.677
Convergence, Y/N	Yes	Yes	Yes
Cap	714	793	763
Service Time	3.066	2.574	2.732
HCM Lane V/C Ratio	0.225	0.521	0.256
HCM Control Delay	9.5	12.4	9.3
HCM Lane LOS	A	B	A
HCM 95th-tile Q	0.9	3	1

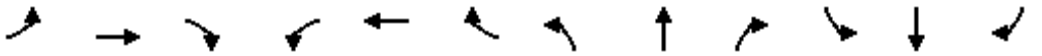
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	2	64	523	4	162	69	938	102	19	792	12
Future Volume (veh/h)	17	2	64	523	4	162	69	938	102	19	792	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.98	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	2	67	554	0	171	73	987	107	20	834	13
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	97	11	88	829	0	361	96	2447	723	31	2259	665
Arrive On Green	0.06	0.06	0.06	0.23	0.00	0.23	0.05	0.48	0.48	0.02	0.44	0.44
Sat Flow, veh/h	1611	179	1459	3563	0	1552	1781	5106	1509	1781	5106	1503
Grp Volume(v), veh/h	20	0	67	554	0	171	73	987	107	20	834	13
Grp Sat Flow(s),veh/h/ln	1790	0	1459	1781	0	1552	1781	1702	1509	1781	1702	1503
Q Serve(g_s), s	1.0	0.0	4.3	13.4	0.0	9.0	3.8	11.8	3.8	1.1	10.3	0.5
Cycle Q Clear(g_c), s	1.0	0.0	4.3	13.4	0.0	9.0	3.8	11.8	3.8	1.1	10.3	0.5
Prop In Lane	0.90		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	108	0	88	829	0	361	96	2447	723	31	2259	665
V/C Ratio(X)	0.19	0.00	0.76	0.67	0.00	0.47	0.76	0.40	0.15	0.65	0.37	0.02
Avail Cap(c_a), veh/h	191	0	156	1775	0	774	294	2447	723	143	2259	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.2	0.0	43.7	33.0	0.0	31.3	44.1	15.9	13.8	46.2	17.6	14.8
Incr Delay (d2), s/veh	0.8	0.0	12.6	0.9	0.0	1.0	11.4	0.5	0.4	20.7	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.8	5.8	0.0	3.4	1.9	4.2	1.2	0.6	3.8	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	0.0	56.3	33.9	0.0	32.2	55.5	16.4	14.2	66.8	18.0	14.9
LnGrp LOS	D	A	E	C	A	C	E	B	B	E	B	B
Approach Vol, veh/h		87			725			1167			867	
Approach Delay, s/veh		53.3			33.5			18.6			19.1	
Approach LOS		D			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.0	51.0		10.6	9.5	47.5		26.9
Change Period (Y+Rc), s	4.4	5.7		4.9	4.4	5.7		4.9
Max Green Setting (Gmax), s	7.6	45.3		10.1	15.6	37.3		47.1
Max Q Clear Time (g_c+I1), s	3.1	13.8		6.3	5.8	12.3		15.4
Green Ext Time (p_c), s	0.0	7.8		0.1	0.1	5.7		2.8

Intersection Summary	
HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	12	118	208	15	237	37	782	16	65	1422	25
Future Volume (veh/h)	45	12	118	208	15	237	37	782	16	65	1422	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.62	1.00		0.76	1.00		0.90	1.00		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	13	124	230	0	249	39	823	17	68	1497	26
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	11	102	1121	0	378	50	1856	516	87	1962	543
Arrive On Green	0.11	0.11	0.11	0.31	0.00	0.31	0.03	0.36	0.36	0.05	0.38	0.38
Sat Flow, veh/h	1781	98	932	3563	0	1200	1781	5106	1419	1781	5106	1414
Grp Volume(v), veh/h	47	0	137	230	0	249	39	823	17	68	1497	26
Grp Sat Flow(s),veh/h/ln	1781	0	1029	1781	0	1200	1781	1702	1419	1781	1702	1414
Q Serve(g_s), s	3.0	0.0	13.5	5.8	0.0	22.2	2.7	15.1	1.0	4.7	31.5	1.4
Cycle Q Clear(g_c), s	3.0	0.0	13.5	5.8	0.0	22.2	2.7	15.1	1.0	4.7	31.5	1.4
Prop In Lane	1.00		0.91	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	195	0	113	1121	0	378	50	1856	516	87	1962	543
V/C Ratio(X)	0.24	0.00	1.22	0.21	0.00	0.66	0.78	0.44	0.03	0.78	0.76	0.05
Avail Cap(c_a), veh/h	195	0	113	1128	0	380	104	1928	536	153	2076	575
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.3	0.0	55.0	31.0	0.0	36.6	59.6	29.8	25.3	58.1	33.1	23.8
Incr Delay (d2), s/veh	0.2	0.0	154.4	0.1	0.0	4.2	9.4	0.6	0.1	5.6	2.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	8.3	2.5	0.0	6.9	1.3	6.1	0.3	2.2	12.8	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.5	0.0	209.4	31.1	0.0	40.8	69.1	30.4	25.4	63.7	35.4	23.9
LnGrp LOS	D	A	F	C	A	D	E	C	C	E	D	C
Approach Vol, veh/h		184			479			879			1591	
Approach Delay, s/veh		168.8			36.1			32.0			36.4	
Approach LOS		F			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	50.9		18.4	7.9	53.4		43.8				
Change Period (Y+Rc), s	4.4	6.0		4.9	4.4	* 6		4.9				
Max Green Setting (Gmax), s	10.6	46.6		13.5	7.2	* 50		39.1				
Max Q Clear Time (g_c+I1), s	6.7	17.1		15.5	4.7	33.5		24.2				
Green Ext Time (p_c), s	0.0	13.6		0.0	0.0	13.9		2.0				

Intersection Summary			
HCM 6th Ctrl Delay		42.9	
HCM 6th LOS		D	

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	0	122	0	0	0	79	807	0	2	1732	19
Future Volume (veh/h)	27	0	122	0	0	0	79	807	0	2	1732	19
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	0	1870				1870	1870	0	1870	1870	1870
Adj Flow Rate, veh/h	28	0	128				83	849	0	2	1823	20
Peak Hour Factor	0.95	0.92	0.95				0.95	0.95	0.92	0.92	0.95	0.95
Percent Heavy Veh, %	2	0	2				2	2	0	2	2	2
Cap, veh/h	182	0	162				107	3805	0	4	3578	39
Arrive On Green	0.10	0.00	0.10				0.06	0.75	0.00	0.00	0.69	0.69
Sat Flow, veh/h	1781	0	1585				1781	5274	0	1781	5204	57
Grp Volume(v), veh/h	28	0	128				83	849	0	2	1192	651
Grp Sat Flow(s),veh/h/ln	1781	0	1585				1781	1702	0	1781	1702	1857
Q Serve(g_s), s	1.4	0.0	7.9				4.6	5.1	0.0	0.1	16.9	16.9
Cycle Q Clear(g_c), s	1.4	0.0	7.9				4.6	5.1	0.0	0.1	16.9	16.9
Prop In Lane	1.00		1.00				1.00		0.00	1.00		0.03
Lane Grp Cap(c), veh/h	182	0	162				107	3805	0	4	2340	1277
V/C Ratio(X)	0.15	0.00	0.79				0.78	0.22	0.00	0.52	0.51	0.51
Avail Cap(c_a), veh/h	641	0	571				277	3805	0	76	2340	1277
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.1	0.0	44.0				46.5	3.9	0.0	50.0	7.5	7.5
Incr Delay (d2), s/veh	0.4	0.0	8.3				4.6	0.1	0.0	79.8	0.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	7.1				2.1	1.2	0.0	0.1	5.0	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.4	0.0	52.3				51.0	4.0	0.0	129.7	8.3	9.0
LnGrp LOS	D	A	D				D	A	A	F	A	A
Approach Vol, veh/h		156						932			1845	
Approach Delay, s/veh		50.4						8.2			8.7	
Approach LOS		D						A			A	

Timer - Assigned Phs	1	2	4	5	6
Phs Duration (G+Y+Rc), s	4.6	80.5	15.1	10.4	74.7
Change Period (Y+Rc), s	4.4	* 5.8	4.9	4.4	5.8
Max Green Setting (Gmax), s	4.3	* 75	36.1	15.6	63.2
Max Q Clear Time (g_c+I1), s	2.1	7.1	9.9	6.6	18.9
Green Ext Time (p_c), s	0.0	9.8	0.5	0.0	21.6

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

Notes

User approved ignoring U-Turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1999	934	388	717	0	0	0	0	386	2	350
Future Volume (veh/h)	0	1999	934	388	717	0	0	0	0	386	2	350
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	2127	994	413	763	0				412	0	372
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	3859	1421	494	3599	0				565	0	503
Arrive On Green	0.00	0.51	0.51	0.29	1.00	0.00				0.16	0.00	0.16
Sat Flow, veh/h	0	7930	2790	3456	5274	0				3563	0	3170
Grp Volume(v), veh/h	0	2127	994	413	763	0				412	0	372
Grp Sat Flow(s),veh/h/ln	0	1515	1395	1728	1702	0				1781	0	1585
Q Serve(g_s), s	0.0	17.2	24.4	10.1	0.0	0.0				9.9	0.0	10.1
Cycle Q Clear(g_c), s	0.0	17.2	24.4	10.1	0.0	0.0				9.9	0.0	10.1
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3859	1421	494	3599	0				565	0	503
V/C Ratio(X)	0.00	0.55	0.70	0.84	0.21	0.00				0.73	0.00	0.74
Avail Cap(c_a), veh/h	0	3859	1421	703	3599	0				827	0	736
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.90	0.90	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	15.1	16.8	31.1	0.0	0.0				36.0	0.0	36.1
Incr Delay (d2), s/veh	0.0	0.6	2.9	5.5	0.1	0.0				1.8	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.1	7.1	3.7	0.0	0.0				4.4	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.6	19.7	36.6	0.1	0.0				37.9	0.0	38.3
LnGrp LOS	A	B	B	D	A	A				D	A	D
Approach Vol, veh/h		3121			1176						784	
Approach Delay, s/veh		16.9			12.9						38.1	
Approach LOS		B			B						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	17.6	53.1		19.4		70.6
Change Period (Y+Rc), s	* 4.7	7.2		5.1		7.2
Max Green Setting (Gmax), s	* 13	33.8		20.9		56.8
Max Q Clear Time (g_c+I1), s	12.1	26.4		12.1		2.0
Green Ext Time (p_c), s	0.8	6.9		2.2		5.4

Intersection Summary	
HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1365	1026	0	0	789	1410	313	3	184	0	0	0
Future Volume (veh/h)	1365	1026	0	0	789	1410	313	3	184	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	1452	1091	0	0	839	1500	335	0	196			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1144	4017	0	0	3097	1141	273	0	243			
Arrive On Green	0.33	0.79	0.00	0.00	0.41	0.41	0.08	0.00	0.08			
Sat Flow, veh/h	3456	5274	0	0	7930	2790	3563	0	3170			
Grp Volume(v), veh/h	1452	1091	0	0	839	1500	335	0	196			
Grp Sat Flow(s),veh/h/ln	1728	1702	0	0	1515	1395	1781	0	1585			
Q Serve(g_s), s	29.8	5.2	0.0	0.0	6.6	36.8	6.9	0.0	5.5			
Cycle Q Clear(g_c), s	29.8	5.2	0.0	0.0	6.6	36.8	6.9	0.0	5.5			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1144	4017	0	0	3097	1141	273	0	243			
V/C Ratio(X)	1.27	0.27	0.00	0.00	0.27	1.32	1.23	0.00	0.81			
Avail Cap(c_a), veh/h	1144	4017	0	0	3097	1141	273	0	243			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.73	0.73	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	30.1	2.6	0.0	0.0	17.7	26.6	41.5	0.0	40.9			
Incr Delay (d2), s/veh	126.2	0.1	0.0	0.0	0.2	148.1	129.9	0.0	17.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	31.1	0.8	0.0	0.0	2.1	34.0	7.9	0.0	2.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	156.3	2.7	0.0	0.0	17.9	174.7	171.5	0.0	58.7			
LnGrp LOS	F	A	A	A	B	F	F	A	E			
Approach Vol, veh/h		2543			2339			531				
Approach Delay, s/veh		90.4			118.4			129.9				
Approach LOS		F			F			F				

Timer - Assigned Phs	2		5	6		8
Phs Duration (G+Y+Rc), s	78.0		34.0	44.0		12.0
Change Period (Y+Rc), s	7.2		* 4.2	7.2		5.1
Max Green Setting (Gmax), s	70.8		* 30	36.8		6.9
Max Q Clear Time (g_c+I1), s	7.2		31.8	38.8		8.9
Green Ext Time (p_c), s	8.7		0.0	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	106.4
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

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

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	84	1051	9	0	845
Future Vol, veh/h	0	84	1051	9	0	845
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	91	1142	10	0	918

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	576	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	394	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	394	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	394	-
HCM Lane V/C Ratio	-	-	0.232	-
HCM Control Delay (s)	-	-	16.9	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.9	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	117	625	0	0	5
Future Vol, veh/h	1	117	625	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	127	679	0	0	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	679	0	-	0	808	340
Stage 1	-	-	-	-	679	-
Stage 2	-	-	-	-	129	-
Critical Hdwy	4.13	-	-	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	911	-	-	-	334	657
Stage 1	-	-	-	-	466	-
Stage 2	-	-	-	-	896	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	911	-	-	-	334	657
Mov Cap-2 Maneuver	-	-	-	-	334	-
Stage 1	-	-	-	-	466	-
Stage 2	-	-	-	-	896	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	911	-	-	-	657
HCM Lane V/C Ratio	0.001	-	-	-	0.008
HCM Control Delay (s)	9	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	109	575	1	7	50
Future Vol, veh/h	8	109	575	1	7	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	118	625	1	8	54

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	626	0	-	0	762	626
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	136	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	956	-	-	-	373	484
Stage 1	-	-	-	-	533	-
Stage 2	-	-	-	-	890	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	956	-	-	-	369	484
Mov Cap-2 Maneuver	-	-	-	-	369	-
Stage 1	-	-	-	-	528	-
Stage 2	-	-	-	-	890	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	13.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	956	-	-	-	466
HCM Lane V/C Ratio	0.009	-	-	-	0.133
HCM Control Delay (s)	8.8	0	-	-	13.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.5

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	113	561	0	1	15
Future Vol, veh/h	1	113	561	0	1	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	123	610	0	1	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	610	0	-	0	735	610
Stage 1	-	-	-	-	610	-
Stage 2	-	-	-	-	125	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	969	-	-	-	387	494
Stage 1	-	-	-	-	542	-
Stage 2	-	-	-	-	901	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	969	-	-	-	387	494
Mov Cap-2 Maneuver	-	-	-	-	387	-
Stage 1	-	-	-	-	541	-
Stage 2	-	-	-	-	901	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	12.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	969	-	-	-	486
HCM Lane V/C Ratio	0.001	-	-	-	0.036
HCM Control Delay (s)	8.7	0	-	-	12.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	38	47	123	112	17
Future Vol, veh/h	8	38	47	123	112	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	41	51	134	122	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	367	131	140	0	-	0
Stage 1	131	-	-	-	-	-
Stage 2	236	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	633	919	1443	-	-	-
Stage 1	895	-	-	-	-	-
Stage 2	803	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	609	919	1443	-	-	-
Mov Cap-2 Maneuver	609	-	-	-	-	-
Stage 1	861	-	-	-	-	-
Stage 2	803	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	2.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1443	-	844	-	-
HCM Lane V/C Ratio	0.035	-	0.059	-	-
HCM Control Delay (s)	7.6	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	16	16	115	113	4
Future Vol, veh/h	3	16	16	115	113	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	17	17	125	123	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	284	125	127	0	-	0
Stage 1	125	-	-	-	-	-
Stage 2	159	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	706	926	1459	-	-	-
Stage 1	901	-	-	-	-	-
Stage 2	870	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	697	926	1459	-	-	-
Mov Cap-2 Maneuver	697	-	-	-	-	-
Stage 1	889	-	-	-	-	-
Stage 2	870	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	0.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1459	-	880	-	-
HCM Lane V/C Ratio	0.012	-	0.023	-	-
HCM Control Delay (s)	7.5	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	69	25	6	146	23	2
Future Vol, veh/h	69	25	6	146	23	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	75	27	7	159	25	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	102	0	262	89
Stage 1	-	-	-	-	89	-
Stage 2	-	-	-	-	173	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1490	-	727	969
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	857	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1490	-	723	969
Mov Cap-2 Maneuver	-	-	-	-	723	-
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	853	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	738	-	-	1490	-
HCM Lane V/C Ratio	0.037	-	-	0.004	-
HCM Control Delay (s)	10.1	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

APPENDIX E

INTERSECTION TRAFFIC SIGNAL TIMING DATA

INTERSECTION: N Torrey Pines Rd @ Science Park Rd/Hil Hotel Drwy — 223 P ram

Group Assignment:
Field Master Assignment:

N/S Street Name: N Torrey Pines Rd
E/W Street Name: Science Park Rd/Hilton Hotel Drwy

Last Database Change:
System Ref. Number:

N

		Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
		N Torrey Pines		Science Park	Hilton		N Torrey Pines		
Row	Column # ----> / Phase # ---->	1	2	3	4	5	6	7	8
0	Ped Walk		7	7			7		
1	Ped FDW		16	31			7		
2	Min Green	4	10	4	4	6 ~~4~~	20 ~~10~~		
3	Type 3 Limit					(1)	(1)		
4	Add/Veh								
5	Veh Extn	2.0	5.2	2.0	2.0	2.0	4.8		
6	Max Gap	2.0	5.2	2.0	2.0	2.0	4.8		
7	Min Gap	2.0	0.2	2.0	2.0	2.0	0.2		
8	Max Limit	30	60	40	40	30	60		
9	Max Limit 2								
A	Bus Adv								
B	Call to Phs								
C	Reduce By		0.1				0.1		
D	Every		0.6				0.7		
E	Yellow	3.4	4.1 ~~4.6~~	3.9	3.9	3.4	4.7 ~~4.8~~		
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0		

(1) LV3 3/25/15

Phase Timing - Bank 1 <F Page>
F + Phase + Row

Row		E
	RR-1 Delay	
	RR-1 Clear	
	EV-A Delay	0
	EV-A Clear	0
	EV-B Delay	0
	EV-B Clear	0
	EV-C Delay	0
	EV-C Clear	0
	EV-D Delay	0
	EV-D Clear	0
	RR-2 Delay	
	RR-2 Clear	
	View EV Delay	---
	View EV Clear	---
	View RR Delay	---
	View RR Clear	---

Preempt Timing
F + E + Row

Row		F
0	Permit	123456
1	Red Lock	
2	Yellow Lock	
3	Min Recall	25.6
4	Ped Recall	
5	Peds (View)	23 6
6	Rest In Walk	
7	Red Rest	
8	Dbl Entry	
9	Max Recall	
A	Soft Recall	2 6
B	Max 2	
C	Cond Serv	
D	Ped Lock	12345678
E	Yellow Start	2 6
F	1st Phases	3

Phase Functions <F Page>
F + F + Row

Max Initial	0
Red Revert	5.0
All Red Start	0.0

F + 0 + E
F + 0 + F
F + C + O

Start / Revert Times

Drop Number	8
Zone Number	8
Area Number	4
Area Address	123
QuicNet Channel	COM50

C + 0 + 0
C + 0 + 1
C + 0 + 2
C + 0 + 3
(QuicNet)

Communication Addresses

C + F + O	F	Row
Free Lag	2 4 6	0

Lag Phases <C Page>

Overlap Timing

Row		9 Green Clear	C Yellow Change	D Red Clear	0 Load-Switch #
Overlap A	A				
Overlap B	B				
Overlap C	C				
Overlap D	D				

<F Page> F + COLOR +
<D Page> D + 0 + OVERLAP

Manual Plan	0
Manual Offset	0

C + A + 1
C + B + 1

Manual Selection

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Downtime Flash	255 (minutes)

Downtime Before Auto Manual Flash
F + 0 +8

Disable Ports	234

Disable Communication Ports
D + D + 9

Timing Sheet By: KT
Approved By: FLG
Drawing Number: 28834-D-5
Timing Implemented On: 6/21/13

INTERSECTION: N Torrey Pines Rd @ Science Par d/Hilton Hotel Drwy 223 Pr am

Row	Time	Function	Day of Week	Column F Phases/Bits
0	:			
1	:			
2	:			
3	:			
4	:			
5	:			
6	:			
7	:			
8	:			
9	:			
A	:			
B	:			
C	:			
D	:			
E	:			
F	:			

TOD Function <D Page>

7 + ROW D + F + ROW

T.O.D. Functions
0 = Permitted Phases
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 2 - Phase Bank 2
Bit 3 - Phase Bank 3
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 4

Row		F
0		
1	RR Overlap A - Phases	
2	RR Overlap B - Phases	
3	RR Overlap C - Phases	
4	RR Overlap D - Phases	
5	Ped 2P	2
6	Ped 6P	6
7	Ped 4P	
8	Ped 8P	3
9	Yellow Flash Phases	
A	Overlap A - Phases	
B	Overlap B - Phases	
C	Overlap C - Phases	
D	Overlap D - Phases	
E	Restricted Phases	
F	Assign 5 Outputs	

Configuration <E Page>

E + F + ROW

Row		E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Overlap A - Green Omit	
6	Overlap B - Green Omit	
7	Overlap C - Green Omit	
8	Overlap D - Green Omit	
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	4
C	EV-C Phases	1 6
D	EV-D Phases	3
E	Extra 1 Config. Bits	1 345
F	IC Select (Interconnect)	2

Configuration

For access, set F + 9 + E = 1 E + E + ROW

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 = Remote Download
6 = Special Event
7 = Pretimed Operation
8 = Split Ring Operation

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

Day of Week

1 = Sunday
2 = Monday
3 = Tuesday
4 = Wednesday
5 = Thursday
6 = Friday
7 = Saturday

Assign 5 Outputs
1 = Right Turn Overlap
2 = TOD Outputs
3 = EV Beacon - Steady
4 = EV Beacon - Flashing
5 = Special Event Outputs
6 = Phase 3 & 7 Ped
7 = Advanced Warning Sign
8 =

Time and Date
8-0 Hour, Minute, Day-of-Week
8-1 Day-of-Month, Year, Month
8-F Seconds

Disable Parity	0	D+B+0

Dial-Up Telephone Communications
(If set to a non-zero value, parity will be disabled)

Program Information
C + C + 0 = program
C + C + F = version

Remote Download
C + 0 + 4 = 1 -255
w/ E + E + E bit 5 on

ERSECTION: N Torrey Pines Rd @ Science Park R Hilton Hotel Drwy 223 Program

Row	1 Delay	3 Carry-over
0		
1		1.8
2		
3		
4		1.8
5		
6		
7	10.0	
8		
9		
A		
B		
C		
D	10.0	
E	---	---
F	---	---

Detector Name	332 Input File	Detector Number
	1I1	14
	2I2U	1
	2I2L	5
	2I3U	21
	2I3L	25
	2I4	9
	3I5	16
	4I6U	3
	4I6L	7
	4I7U	23
	4I7L	27
	4I8	11
	1I9U	18
	3I9L	20
---	---	---
---	---	---

Row	2 Delay	4 Carry-over
0		
1		1.8
2		
3		
4		1.8
5		
6		
7		
8		
9		
A		
B		
C		
D		
E	---	---
F	---	---

Detector Name	332 Input File	Detector Number
	5J1	13
	6J2U	2
	6J2L	6
	6J3U	22
	6J3L	26
	6J4	10
	7J5	15
	8J6U	4
	8J6L	8
	8J7U	24
	8J7L	28
	8J8	12
	5J9U	17
	7J9L	19
---	---	---
---	---	---

Detector Delay & Carryover <D Page>

D + X (across) + ROW

Row	Detector Numbers	E
A	1 2 3 4 5 6 7 8	12345678
B	9 10 11 12 -- -- -- --	1234
C	13 14 15 16 17 18 19 20	12345678
D	-- -- -- -- 21 22 23 24	5678
E	-- -- -- -- -- -- -- --	1234
F	-- 25 26 27 28 -- -- --	2345

Active Detectors <D Page>

Row		0 Detector #
0		
1	System Det. # 1	
2	System Det. # 2	
3	System Det. # 3	
4	System Det. # 4	
5	System Det. # 5	
6	System Det. # 6	
7	System Det. # 7	
8	System Det. # 8	

System Detectors <D Page>

Max ON (min)	5	D+A+E
Max OFF (min)	60	D+A+F

Detector Failure Monitor

Phase Number	0	F+C+1
Time Before Yellow	0.0	F+C+3

Advance Warning Beacon - Sign 1

Phase Number	0	F+D+1
Time Before Yellow	0.0	F+D+3

Advance Warning Beacon - Sign 2

Long Failure	0.5	F+0+6
Short Failure	0.5	F+0+7

Power Cycle Correction (Default = 0.5)

INTERSECTION: N Torrey Pines Rd @ Science P Rd/Hilton Hotel Drwy 223 Proc n

Row	Column # → / Plan Name →	Plan 1	2	3	4 AM	5	6 PM	7	8	9
0	Cycle Length				130		130			
1	Phase 1 - ForceOff				21		79			
2	Phase 2 - ForceOff				0		0			
3	Phase 3 - ForceOff				64		43			
4	Phase 4 - ForceOff				82		65			
5	Phase 5 - ForceOff				100		81			
6	Phase 6 - ForceOff				21		0			
7	Phase 7 - ForceOff									
8	Phase 8 - ForceOff									
9	Ring Offset									
A	Offset A				99		129			
B	Offset B									
C	Offset C									
D	Permissive				21		13			
E	Hold Release				255		255			
F	Ped Shift				0		0			

Coordination <C Page>

C + Plan + ROW

Coordination Timing By: KT
Implemented On: 5/8/2013

FOR OBSERVATION ONLY

Master Plan	C + A + 2
Current Plan	C + A + 3
Next Plan	C + A + 4
T.O.D. Plan	C + A + 5
Master Cycle	C + A + 0
Ring A Cycle	C + B + 0
Ring B Cycle	C + D + 0
Min Cycle	C + A + E
Max Cycle	C + B + E

Row	Time	Plan	Offset	Day of Week
0	06 : 30	4	A	_23456_
1	10 : 00	E	A	1234567
2	13 : 00	6	A	_23456_
3	18 : 30	E	A	1234567
4				
5				
6				
7				
8				
9				
A				
B				
C				
D				
E				
F				

TOD Coordination

<9 Key with C+0+9=1>

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

	E	Row		F
		0	Free Lag	
Plan 1		1	Plan 1 - Lag	
Plan 2		2	Plan 2 - Lag	
Plan 3		3	Plan 3 - Lag	
Plan 4	_2__6__	4	Plan 4 - Lag	1__4_6__
Plan 5		5	Plan 5 - Lag	
Plan 6	_2__6__	6	Plan 6 - Lag	_2_4_6__
Plan 7		7	Plan 7 - Lag	
Plan 8		8	Plan 8 - Lag	
Plan 9		9	Plan 9 - Lag	
Coord Ped*		A	Coord Max *	5
NEMA Hold		B	Coord Lag *	
		C		
		D		
		E		
		F		

LV3 3/25/15

Sync Phases
C + E + FUNCTION #

Lag Phases <C Page>
C + F + FUNCTION #

Transition Type	0

TBC Transition
C + D + D

Transition Type
0 = Shortway
Non-zero = Lengthen

TERSECTION: John Jay Hopkins @ N Torrey Pines Rd

223 P ram

Group Assignment:
Field Master Assignment:

N/S Street Name: N Torrey Pines Rd
E/W Street Name: John Jay Hopkins

Last Database Change:
System Ref. Number:

N

Column # ---->		Phase							
	Row	1	2	3	4	5	6	7	8
		↳	↑			↰	↓	↗	⇄
		N Torrey Pines					N Torrey Pines	John J Hopkins	
Ped Walk	0		7				7		10
Ped FDW	1		14				7		29
Min Green	2	4	10			4	10	4	4
Type 3 Limit	3								
Add/Veh	4								
Veh Extn	5	2.0	6.0			2.0	5.6	2.0	3.2
Max Gap	6	2.0	6.0			2.0	5.6	2.0	3.2
Min Gap	7	2.0	0.2			2.0	0.2	2.0	0.2
Max Limit	8	30	60			30	40	40	40
Max Limit 2	9								
Bus Adv	A								
Call to Phs	B								
Reduce By	C		0.1				0.1		0.1
Every	D		0.5				0.6		1.0
Yellow	E	3.4	5.0			3.4	4.8	3.9	3.9
Red Clear	F	1.0	1.0			1.0	1.0	1.0	1.0

Phase Timing - Bank 1
F + Phase + Row

<F Page>

	Row	E
RR-1 Delay	0	
RR-1 Clear	1	
EV-A Delay	2	0
EV-A Clear	3	0
EV-B Delay	4	0
EV-B Clear	5	0
EV-C Delay	6	0
EV-C Clear	7	0
EV-D Delay	8	0
EV-D Clear	9	0
RR-2 Delay	A	
RR-2 Clear	B	
View EV Delay	C	---
View EV Clear	D	---
View RR Delay	E	---
View RR Clear	F	---

Preempt Timing
F + E + Row

	Row	F
Permit	0	12__5678
Red Lock	1	
Yellow Lock	2	
Min Recall	3	
Ped Recall	4	
Peds (View)	5	_2___6_8
Rest In Walk	6	
Red Rest	7	
Dbl Entry	8	
Max Recall	9	
Soft Recall	A	_2___6__
Max 2	B	
Cond Serv	C	
Ped Lock	D	12345678
Yellow Start	E	_2___6__
1st Phases	F	_____7_

Phase Functions <F Page>
F + F + Row

Max Initial	0
Red Revert	5.0
All Red Start	0.0

F + 0 + E
F + 0 + F
F + C + O

Start / Revert Times

Drop Number	7
Zone Number	7
Area Number	4
Area Address	122
QuicNet Channel	COM50

C + 0 + 0
C + 0 + 1
C + 0 + 2
C + 0 + 3
(QuicNet)

Communication Addresses

Overlap Timing

	Row	9 Green Clear	C Yellow Change	D Red Clear	0 Load-Switch #
Overlap A	A				
Overlap B	B				
Overlap C	C				
Overlap D	D				

<F Page>
F + COLOR +

<D Page>
D + 0 + OVERLAP

	F	Row
Free Lag	_2___6_8	0

Lag Phases <C Page>
C + F + O

Manual Plan	0
Manual Offset	0

C + A + 1
C + B + 1

Manual Selection

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Downtime Flash	255	(minutes)

Downtime Before Auto Manual Flash
F + 0 +8

Disable Ports	_234_

Disable Communication Ports
D + D + 9

Timing Sheet By: KT
Approved By: FLG
Drawing Number: 34991-5-D
Timing Implemented On: 6/19/13

INTERSECTION: John Jay Hopkins @ N Torrey Pi Rd 223 P am

Row	Time	Function	Day of Week	Column F Phases/Bits
0	:			
1	:			
2	:			
3	:			
4	:			
5	:			
6	:			
7	:			
8	:			
9	:			
A	:			
B	:			
C	:			
D	:			
E	:			
F	:			

TOD Function

7 + ROW

<D Page>

D + F + ROW

T.O.D. Functions
0 = Permitted Phases
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 2 - Phase Bank 2
Bit 3 - Phase Bank 3
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 4

Row		F
0		
1	RR Overlap A - Phases	
2	RR Overlap B - Phases	
3	RR Overlap C - Phases	
4	RR Overlap D - Phases	
5	Ped 2P	2
6	Ped 6P	6
7	Ped 4P	
8	Ped 8P	8
9	Yellow Flash Phases	
A	Overlap A - Phases	
B	Overlap B - Phases	
C	Overlap C - Phases	
D	Overlap D - Phases	
E	Restricted Phases	
F	Assign 5 Outputs	

Configuration

<E Page>

E + F + ROW

Day of Week

1 = Sunday
2 = Monday
3 = Tuesday
4 = Wednesday
5 = Thursday
6 = Friday
7 = Saturday

Assign 5 Outputs
1 = Right Turn Overlap
2 = TOD Outputs
3 = EV Beacon - Steady
4 = EV Beacon - Flashing
5 = Special Event Outputs
6 = Phase 3 & 7 Ped
7 = Advanced Warning Sign
8 =

Row		E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Overlap A - Green Omit	
6	Overlap B - Green Omit	
7	Overlap C - Green Omit	
8	Overlap D - Green Omit	
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	7
C	EV-C Phases	1 6
D	EV-D Phases	8
E	Extra 1 Config. Bits	1 345
F	IC Select (Interconnect)	2

Configuration

For access, set F + 9 + E = 1

E + E + ROW

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 = Remote Download
6 = Special Event
7 = Pretimed Operation
8 = Split Ring Operation

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

Time and Date
8-0 Hour, Minute, Day-of-Week
8-1 Day-of-Month, Year, Month
8-F Seconds

Disable Parity	0	D+B+0

Dial-Up Telephone Communications
(If set to a non-zero value, parity will be disabled)

Program Information
C + C + 0 = program
C + C + F = version

Remote Download
C + 0 + 4 = 1 -255
w/ E + E + E bit 5 on

INTERSECTION: John Jay Hopkins @ N Torrey Pines F

223 Program

Row	1 Delay	3 Carry-over
0		
1		1.8
2		1.8
3		
4		
5		
6		
7		
8		
9		
A		
B		
C		
D		
E	---	---
F	---	---

Detector Name	332 Input File	Detector Number
	1I1	14
	2I2U	1
	2I2L	5
	2I3U	21
	2I3L	25
	2I4	9
	3I5	16
	4I6U	3
	4I6L	7
	4I7U	23
	4I7L	27
	4I8	11
	1I9U	18
	3I9L	20
---	---	---
---	---	---

Row	2 Delay	4 Carry-over
0		
1		1.8
2		1.8
3		
4		
5		
6		
7		1.8
8	10.0	
9		
A		
B		
C		
D		
E	---	---
F	---	---

Detector Delay & Carryover <D Page>

Detector Name	332 Input File	Detector Number
	5J1	13
	6J2U	2
	6J2L	6
	6J3U	22
	6J3L	26
	6J4	10
	7J5	15
	8J6U	4
	8J6L	8
	8J7U	24
	8J7L	28
	8J8	12
	5J9U	17
	7J9L	19
---	---	---
---	---	---

D + X (across) + ROW

Row	Detector Numbers 1 2 3 4 5 6 7 8	E
A	1 2 3 4 5 6 7 8	12345678
B	9 10 11 12 -- -- -- --	1234
C	13 14 15 16 17 18 19 20	12345678
D	-- -- -- -- 21 22 23 24	5678
E	-- -- -- -- -- -- -- --	1234
F	-- 25 26 27 28 -- -- --	2345

Active Detectors <D Page>

Row		0 Detector #
0		
1	System Det. # 1	
2	System Det. # 2	
3	System Det. # 3	
4	System Det. # 4	
5	System Det. # 5	
6	System Det. # 6	
7	System Det. # 7	
8	System Det. # 8	

System Detectors <D Page>

Max ON (min)	5	D+A+E
Max OFF (min)	60	D+A+F

Detector Failure Monitor

Phase Number	0	F+C+1
Time Before Yellow	0.0	F+C+3

Advance Warning Beacon - Sign 1

Phase Number	0	F+D+1
Time Before Yellow	0.0	F+D+3

Advance Warning Beacon - Sign 2

Long Failure	0.5	F+0+6
Short Failure	0.5	F+0+7

Power Cycle Correction (Default = 0.5)

INTERSECTION: John Jay Hopkins @ N Torrey P[illegible]s Rd

223 Proj[illegible]n

Coordination Timing By: KT
Implemented On: 5/8/2013

Row	Plan Name --->	1	2	3	4 AM	5	6 PM	7	8	9
0	Cycle Length				130		130			
1	Phase 1 - ForceOff				113		104			
2	Phase 2 - ForceOff				24		20			
3	Phase 3 - ForceOff									
4	Phase 4 - ForceOff									
5	Phase 5 - ForceOff				24		20			
6	Phase 6 - ForceOff				0		0			
7	Phase 7 - ForceOff				45		44			
8	Phase 8 - ForceOff				89		88			
9	Ring Offset									
A	Offset A				4		83			
B	Offset B									
C	Offset C									
D	Permissive				24		20			
E	Hold Release				255		255			
F	Ped Shift				0		0			

Coordination <C Page>

C + Plan + ROW

FOR OBSERVATION ONLY

Master Plan	C + A + 2
Current Plan	C + A + 3
Next Plan	C + A + 4
T.O.D. Plan	C + A + 5
Master Cycle	C + A + 0
Ring A Cycle	C + B + 0
Ring B Cycle	C + D + 0
Min Cycle	C + A + E
Max Cycle	C + B + E

Row	Time	Plan	Offset	Day of Week
0	06 : 30	4	A	_23456_
1	10 : 00	E	A	1234567
2	13 : 00	6	A	_23456_
3	18 : 30	E	A	1234567
4				
5				
6				
7				
8				
9				
A				
B				
C				
D				
E				
F				

TOD Coordination

<9 Key with C+0+9=1>

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

	E
Plan 1	
Plan 2	
Plan 3	
Plan 4	_2__6_
Plan 5	
Plan 6	_2__6_
Plan 7	
Plan 8	
Plan 9	
Coord Ped*	
NEMA Hold	

Sync Phases

C + E + FUNCTION #

Row		F
0	Free Lag	
1	Plan 1 - Lag	
2	Plan 2 - Lag	
3	Plan 3 - Lag	
4	Plan 4 - Lag	_2__5__8
5	Plan 5 - Lag	
6	Plan 6 - Lag	_2__5__8
7	Plan 7 - Lag	
8	Plan 8 - Lag	
9	Plan 9 - Lag	
A	Coord Max *	
B	Coord Lag *	
C		
D		
E		
F		

Lag Phases <C Page>

C + F + FUNCTION #

Transition Type	0

TBC Transition
C + D + D

Transition Type
0 = Shortway
Non-zero = Lengthen

TERSECTION: N Torrey Pines Rd @ Scripps Clinic S Drw

223 P ram

Group Assignment:
Field Master Assignment:

N/S Street Name: N Torrey Pines Rd
E/W Street Name: Scripps Clinic S Drwy

Last Database Change:
System Ref. Number:

N

		Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8	
		N Torrey Pines			Scripps Clinic		N Torrey Pines			
Row	Column # ---> / Phase # --->	1	2	3	4	5	6	7	8	Row
0	Ped Walk				7		7			0
1	Ped FDW				28		8			1
2	Min Green	4	10		4	4	10			2
3	Type 3 Limit									3
4	Add/Veh									4
5	Veh Extn	2.0	4.0		3.0	2.0	3.4			5
6	Max Gap	2.0	4.0		3.0	2.0	3.4			6
7	Min Gap	2.0	0.2		3.0	2.0	0.2			7
8	Max Limit	30	60		40	30	60			8
9	Max Limit 2									9
A	Bus Adv									A
B	Call to Phs									B
C	Reduce By		0.1				0.1			C
D	Every		0.8				1.0			D
E	Yellow	3.4	4.6		3.9	3.4	4.8			E
F	Red Clear	1.0	1.0		1.0	1.0	1.0			F

Phase Timing - Bank 1 <F Page>
F + Phase + Row

Row	E	
	RR-1 Delay	
	RR-1 Clear	
	EV-A Delay	
	EV-A Clear	
	EV-B Delay	
	EV-B Clear	
	EV-C Delay	
	EV-C Clear	
	EV-D Delay	
	EV-D Clear	
	RR-2 Delay	
	RR-2 Clear	
	View EV Delay	---
	View EV Clear	---
	View RR Delay	---
	View RR Clear	---

Preempt Timing
F + E + Row

Row	F	
0	Permit	12_456__
1	Red Lock	
2	Yellow Lock	
3	Min Recall	
4	Ped Recall	
5	Peds (View)	___4_6__
6	Rest In Walk	
7	Red Rest	
8	Dbl Entry	
9	Max Recall	
A	Soft Recall	_2___6__
B	Max 2	
C	Cond Serv	
D	Ped Lock	12345678
E	Yellow Start	_2___6__
F	1st Phases	___4____

Phase Functions <F Page>
F + F + Row

Max Initial	0	F + 0 + E
Red Revert	5.0	F + 0 + F
All Red Start	0.0	F + C + O

Start / Revert Times

Drop Number	6	C + 0 + 0
Zone Number	6	C + 0 + 1
Area Number	4	C + 0 + 2
Area Address	121	C + 0 + 3
QuicNet Channel	COM50	(QuicNet)

Communication Addresses

C + F + O	F	Row
Free Lag	_2_4_6__	0

Lag Phases <C Page>

Overlap Timing

	Row	9 Green Clear	C Yellow Change	D Red Clear	0 Load-Switch #
Overlap A	A				
Overlap B	B				
Overlap C	C				
Overlap D	D				

<F Page> F + COLOR +
<D Page> D + 0 + OVERLAP

Manual Plan	0	C + A + 1
Manual Offset	0	C + B + 1

Manual Selection

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Downtime Flash	255	(minutes)

Downtime Before Auto Manual Flash
F + 0 +8

Disable Ports	_234_

Disable Communication Ports
D + D + 9

Timing Sheet By: KT
Approved By: FLG
Drawing Number: 26991-2-D
Timing Implemented On: 6/21/13

INTERSECTION: N Torrey Pines Rd @ Scripps Cl[illegible] S Drwy 223 P[illegible]ram

Row	Time	Function	Day of Week	Column F Phases/Bits
0	:			
1	:			
2	:			
3	:			
4	:			
5	:			
6	:			
7	:			
8	:			
9	:			
A	:			
B	:			
C	:			
D	:			
E	:			
F	:			

TOD Function <D Page>

7 + ROW D + F + ROW

T.O.D. Functions
0 = Permitted Phases
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 2 - Phase Bank 2
Bit 3 - Phase Bank 3
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 4

Row		F
0		
1	RR Overlap A - Phases	
2	RR Overlap B - Phases	
3	RR Overlap C - Phases	
4	RR Overlap D - Phases	
5	Ped 2P	
6	Ped 6P	6
7	Ped 4P	4
8	Ped 8P	
9	Yellow Flash Phases	
A	Overlap A - Phases	
B	Overlap B - Phases	
C	Overlap C - Phases	
D	Overlap D - Phases	
E	Restricted Phases	
F	Assign 5 Outputs	

Configuration <E Page>

E + F + ROW

Row		E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Overlap A - Green Omit	
6	Overlap B - Green Omit	
7	Overlap C - Green Omit	
8	Overlap D - Green Omit	
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	4
C	EV-C Phases	1 6
D	EV-D Phases	
E	Extra 1 Config. Bits	1 345
F	IC Select (Interconnect)	2

Configuration

For access, set F + 9 + E = 1 E + E + ROW

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 = Remote Download
6 = Special Event
7 = Pretimed Operation
8 = Split Ring Operation

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

Day of Week

1 = Sunday
2 = Monday
3 = Tuesday
4 = Wednesday
5 = Thursday
6 = Friday
7 = Saturday

Assign 5 Outputs
1 = Right Turn Overlap
2 = TOD Outputs
3 = EV Beacon - Steady
4 = EV Beacon - Flashing
5 = Special Event Outputs
6 = Phase 3 & 7 Ped
7 = Advanced Warning Sign
8 =

Time and Date

8-0 Hour, Minute, Day-of-Week
8-1 Day-of-Month, Year, Month
8-F Seconds

Disable Parity	0	D+B+0

Dial-Up Telephone Communications
(If set to a non-zero value, parity will be disabled)

Program Information
C + C + 0 = program
C + C + F = version

Remote Download
C + 0 + 4 = 1 -255
w/ E + E + E bit 5 on

INTERSECTION: N Torrey Pines Rd @ Scripps C(:S Drwy 223 Pro m

Coordination Timing By: KT
Implemented On: 5/8/2013

Row	Column # —>	1	2	3	4	5	6	7	8	9
	Plan Name —>				AM		PM			
0	Cycle Length				130		130			
1	Phase 1 - ForceOff				55		57			
2	Phase 2 - ForceOff				0		0			
3	Phase 3 - ForceOff									
4	Phase 4 - ForceOff				40		43			
5	Phase 5 - ForceOff				79		60			
6	Phase 6 - ForceOff				0		0			
7	Phase 7 - ForceOff									
8	Phase 8 - ForceOff									
9	Ring Offset									
A	Offset A				59		110			
B	Offset B									
C	Offset C									
D	Permissive				13		13			
E	Hold Release				255		255			
F	Ped Shift				0		0			

Coordination <C Page>

C + Plan + ROW

FOR OBSERVATION ONLY

Master Plan	C + A + 2
Current Plan	C + A + 3
Next Plan	C + A + 4
T.O.D. Plan	C + A + 5
Master Cycle	C + A + 0
Ring A Cycle	C + B + 0
Ring B Cycle	C + D + 0
Min Cycle	C + A + E
Max Cycle	C + B + E

Row	Time	Plan	Offset	Day of Week
0	06 : 30	4	A	_23456_
1	10 : 00	E	A	1234567
2	13 : 00	6	A	_23456_
3	18 : 30	E	A	1234567
4				
5				
6				
7				
8				
9				
A				
B				
C				
D				
E				
F				

TOD Coordination

<9 Key with C+0+9=1>

Plan Select
1 thru 9 = Coordination
Plan 1 thru 9
14 or E = Free
15 or F = Flash

	E	Row		F
		0	Free Lag	
Plan 1		1	Plan 1 - Lag	
Plan 2		2	Plan 2 - Lag	
Plan 3		3	Plan 3 - Lag	
Plan 4	_2__6__	4	Plan 4 - Lag	_2_4_6__
Plan 5		5	Plan 5 - Lag	
Plan 6	_2__6__	6	Plan 6 - Lag	_2_4_6__
Plan 7		7	Plan 7 - Lag	
Plan 8		8	Plan 8 - Lag	
Plan 9		9	Plan 9 - Lag	
Coord Ped*		A	Coord Max *	
NEMA Hold		B	Coord Lag *	
		C		
		D		
		E		
		F		

Sync Phases — C + E + FUNCTION #

Lag Phases <C Page> — C + F + FUNCTION #

Transition Type	0

TBC Transition
C + D + D

Transition Type
0 = Shortway
Non-zero = Lengthen

Row	1 Delay	3 Carry-over
0		
1		1.8
2		1.8
3		
4		1.8
5		
6		
7	10.0	
8		
9		
A		
B		
C		
D		
E	---	---
F	---	---

Detector Name	332 Input File	Detector Number
	1I1	14
	2I2U	1
	2I2L	5
	2I3U	21
	2I3L	25
	2I4	9
	3I5	16
	4I6U	3
	4I6L	7
	4I7U	23
	4I7L	27
	4I8	11
	1I9U	18
	3I9L	20
---	---	---
---	---	---

Row	2 Delay	4 Carry-over
0		
1		1.8
2		
3		
4		
5		
6		
7		
8		1.8
9		
A		
B		
C		
D		
E	---	---
F	---	---

Detector Name	332 Input File	Detector Number
	5J1	13
	6J2U	2
	6J2L	6
	6J3U	22
	6J3L	26
	6J4	10
	7J5	15
	8J6U	4
	8J6L	8
	8J7U	24
	8J7L	28
	8J8	12
	5J9U	17
	7J9L	19
---	---	---
---	---	---

Detector Delay & Carryover <D Page>

D + X (across) + ROW

Row	Detector Numbers	E
A	1 2 3 4 5 6 7 8	12345678
B	9 10 11 12 -- -- -- --	1234____
C	13 14 15 16 17 18 19 20	12345678
D	-- -- -- -- 21 22 23 24	____5678
E	-- -- -- -- -- -- -- --	1234____
F	-- 25 26 27 28 -- -- --	_2345___

Active Detectors <D Page>

Row		0 Detector #
0		
1	System Det. # 1	
2	System Det. # 2	
3	System Det. # 3	
4	System Det. # 4	
5	System Det. # 5	
6	System Det. # 6	
7	System Det. # 7	
8	System Det. # 8	

System Detectors <D Page>

Max ON (min)	5	D+A+E
Max OFF (min)	60	D+A+F

Detector Failure Monitor

Phase Number	0	F+C+1
Time Before Yellow	0.0	F+C+3

Advance Warning Beacon - Sign 1

Phase Number	0	F+D+1
Time Before Yellow	0.0	F+D+3

Advance Warning Beacon - Sign 2

Long Failure	0.5	F+0+6
Short Failure	0.5	F+0+7

Power Cycle Correction (Default = 0.5)

LOCATION: **RTE 5 SB / GENESSE**

CALTRANS C8 Version 3 DATE: 6/7/2018

F PAGE

	INTERVAL	PHASE TIMING 1	2	3	4	5	6	7	8	9
0	WALK	1	7	1	1	1	7	1	1	CLK RST
1	DONT WALK	1	16	1	1	1	19	1	1	
2	MIN GREEN	5	13	1	5	1	13	1	1	
3	TYPE 3 DET	0	0	0	0	0	0	0	0	
4	ADD/VEH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
5	PASSAGE	2.0	2.0	0.9	2.0	0.9	2.0	0.9	0.9	
6	MAX GAP	2.0	2.0	0.9	2.0	0.9	2.0	0.9	0.9	
7	MIN GAP	2.0	2.0	0.9	2.0	0.9	2.0	0.9	0.9	
8	MAX EXT	35	40	9	40	9	40	9	9	
9	MAX 2									YR
A	MAX 3									MO
B										DAY
C	REDUCE BY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	DOW
D	EVERY	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	HR
E	YELLOW	3.7	5.2	3.0	4.1	3.0	5.2	3.0	3.0	MIN
F	RED	1.0	2.0	1.0	2.0	1.0	2.0	1.0	1.0	SEC
	PED XING FT		57				68			
	BIKE XING FT		90				90			

PRE-EMPTION E		FLAGS	1	2	3	4	5	6	7	8	
EV SEL	0	PERMIT	1	2	3	4	5	6	7	8	0
RR1 CLR	5	RED LOCK									1
EVA DLY	0	YEL LOCK									2
EVA CLR	5	V RECALL		2				6			3
EVB DLY	0	P RECALL									4
EVB CLR	5	PED PHASES		2				6			5
EVC DLY	0	RT OLA									6
EVC CLR	5	RT OLB									7
EVD DLY	0	DBL ENTRY									8
EVD CLR	5	MAX 2 PHASES									9
MAX EV	255	LAG PHASES	READ ONLY								A
RR2 CLR	5	RED REST									B
		REST-IN-WALK									C
		MAX 3 PHASES									D
		YEL START UP									E
		FIRST PHASE		2				6			F
			1	2	3	4	5	6	7	8	

FOC LONG FAILURE	
FOD SHORT FAILURE	
FOE	0
FOF	5

FCO	3
FC1	3
FC2	10
FCA	0.0
FCB	0.0
FCC	0.0
FCD	0.0

FDO TB SELECT	1
FD3 PED SELECT	0
FD4 7 WIRE	0
FD5 PERMISSIVE	0
FD8 OS SEEKING	1

CO5 FLASH TYPE	1
CC2 DOWNLOAD	1

ENTRIES IN THESE LOCATIONS ARE NOT TO BE CHANGED

ENTRIES IN THESE LOCATIONS CAN BE CHANGED IN CC1 FLASH ONLY

LOCATION: **RTE 5 SB / GENESSE**

CALTRANS C8 Version 3 DATE: 7/26/2018

C PAGE

		CONTROL PLANS									Y-COORD			LAG PHASE		FLAGS									
		1	2	3	4	5	6	7	8	9		C	D	E		F	1	2	3	4	5	6	7	8	
0	CYCLE LENGTH	**90**	**90**	**100**	**90**	**100**	**90**									LAG FZ FREE		**2**		**4**		**6**		**8**	0
1	FZ1 GRN FCTR	**15**	**18**	**30**	**18**	**15**	**15**							GAPOUT CP1		LAG FZ CP 1		**2**		**4**		**6**		**8**	1
2														GAPOUT CP2		LAG FZ CP 2		**2**		**4**		**6**		**8**	2
3	FZ3 GRN FCTR	**0**	**0**	**0**	**0**	**0**	**0**							GAPOUT CP3		LAG FZ CP 3		**2**		**4**		**6**		**8**	3
4	FZ4 GRN FCTR	**25**	**25**	**35**	**42**	**28**	**45**				PERM TIME			GAPOUT CP4		LAG FZ CP 4		**2**		**4**		**6**		**8**	4
5	FZ5 GRN FCTR										LAG OFFSET			GAPOUT CP5		LAG FZ CP 5		**2**		**4**		**6**		**8**	5
6											FORCE OFF			GAPOUT CP6		LAG FZ CP 6		**2**		**4**		**6**		**8**	6
7	FZ7 GRN FCTR	**0**	**0**	**0**	**0**	**0**	**0**				LONG GRN			GAPOUT CP7		LAG FZ CP 7									7
8	FZ8 GRN FCTR	**0**	**0**	**0**	**0**	**0**	**0**				NO GREEN			GAPOUT CP8		LAG FZ CP 8									8
9	MULTI CYCLE	**0**	**0**	**0**	**0**	**0**	**0**							GAPOUT CP9		LAG FZ CP 9									9
A	OFFSET A	**0**	**0**	**0**	**0**	**0**	**0**				OFFSET					LAG C COORD									A
B	OFFSET B															LAG D COORD									B
C	OFFSET C															COORD FAZES		**2**				**6**			C
D	FZ 3 EXT																								D
E	FZ 7 EXT																								E
F	OFFSET INTRPT																								F
																	1	2	3	4	5	6	7	8	

CO1 MANUAL CP
CO2 MASTER CP
CO3 CURRENT CP
CO4 LAST CP
CO7 TRNSMT CP
COD MANUAL OFFSET
CAO LOCAL CYCLE TIMER
CBO MASTER CYCLE TIMER
CAA LOCAL OFFSET
CBA MASTER OFFSET

SYSTEM MASTER:
RTE 5 NB RAMP

FEATURE	OFF	ON
1		
2		
3		
4		
5		
6		
7		
8		

LOCATION	OFF	ON
1		**1**
2		
3		
4		
5		
6		
7		
8		

COO = **1**

CCB/CDB OFFSET TIMER
CCC/CDC LAG GREEN TIMER
CCD/CDD FORCE OFF TIMER
CCE/CDE LONG GREEN TIMER
CCF/CDF NO GREEN TIMER

D PAGE

	D	FLAGS								E	FLAGS								F	FLAGS							
	MAX	1	2	3	4	5	6	7	8	MIN	1	2	3	4	5	6	7	8	PED	1	2	3	4	5	6	7	8
0	RCL									RCL									RCL								
1	CP 1									CP 1	1			4					CP 1								
2	CP 2									CP 2	1								CP 2								
3	CP 3									CP 3									CP 3								
4	CP 4									CP 4				4					CP 4								
5	CP 5									CP 5				4					CP 5								
6	CP 6									CP 6				4					CP 6								
7	CP 7									CP 7									CP 7								
8	CP 8									CP 8									CP 8								
9	CP 9									CP 9									CP 9								
A																			RCL 1								
B																			RCL 2								
C																											
D																											
E																											
F																											
		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8

E PAGE

	E	FLAGS								F	FLAGS								
	FUNCTION	1	2	3	4	5	6	7	8	FUNCTION	1	2	3	4	5	6	7	8	
0										CODE 4									0
1										CODE 5									1
2										C-RECALL									2
3										D-RECALL									3
4										EXCLUSIVE									4
5										2 PED		2							5
6										6 PED						6			6
7										4 PED				4					7
8										8 PED								8	8
9																			9
A	OLA NOT									OLA ON									A
B	OLB NOT									OLB ON									B
C	OLC NOT									OLC ON									C
D	OLD NOT									OLD ON									D
E																			E
F																			F
		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8	

LAST POWER FAILURE REGISTER

HOUR = D-A-E
MINUTE = D-B-E
DAY = D-C-E

RCL 1 = TIME OF DAY MAX RECALL (1ST SELECT) PHASES
(CALL ACTIVE LIGHTS)
RCL 2 = TIME OF DAY MAX RECALL (2ND SELECT) PHASES
(CALL ACTIVE LIGHTS)

LAST FLASH TIME REGISTER

HOUR = D-A-F
MINUTE = D-B-F
DAY = D-C-F

D-E-E = C8 VERSION NUMBER
D-E-F = LITHIUM BATTERY CONDITION
84 = BAD
85 = GOOD

LOCATION: **RTE 5 SB / GENESSE**
CALTRANS C8 Version 3 DATE: 6/7/2018
7 PAGE

9 PAGE C09 = 0 or 1

9 PAGE C09 = 2

TIME OF DAY ACTIVITY TABLE
7+EVENT+HR+MIN+ACT+"E"+ON/OFF+DOW LTS

	HR	MIN	ACT	ON/OFF	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0											
1											
2											
3											
4											
5											
6											
7											
8											
9											
A											
B											
C											
D											
E											
F											

ACTIVITY CODE

1 TYPE OF MAX TERMINATION
2 MAX 2
3 MAX 3
4 COND SERV (1ST SELECT)
5 COND SERV (2ND SELECT)
6 ENERGIZE AUX OUTPUT-RED
7 ENERGIZE AUX OUTPUT-GREEN
8 ENERGIZE AUX OUTPUT-YELLOW
9 TIME OF DAY MAX RECALL (1ST SELECT)
A TRAFFIC ACT. MAX 2 OPERATION
B TIME OF DAY MAX RECALL (2ND SELECT)
C YELLOW YIELD COORDINATION
D YELLOW YIELD COORDINATION
E TIME OF DAY FREE OPERATION
F FLASHING OPERATION

CONTROL PLAN TIME OF DAY
9+EVENT+HR+MIN+CP+OS+E+DOW

	HR	MIN	CP	OS	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0	06	45	4	A		2	3	4	5	6	
1	08	15	6	A		2	3	4	5	6	
2	10	00	3	A		2	3	4	5	6	
3	15	00	1	A		2	3	4	5	6	
4	18	30	E			2	3	4	5	6	
5											
6											
7											
8											
9											
A											
B											
C											
D											
E											
F											

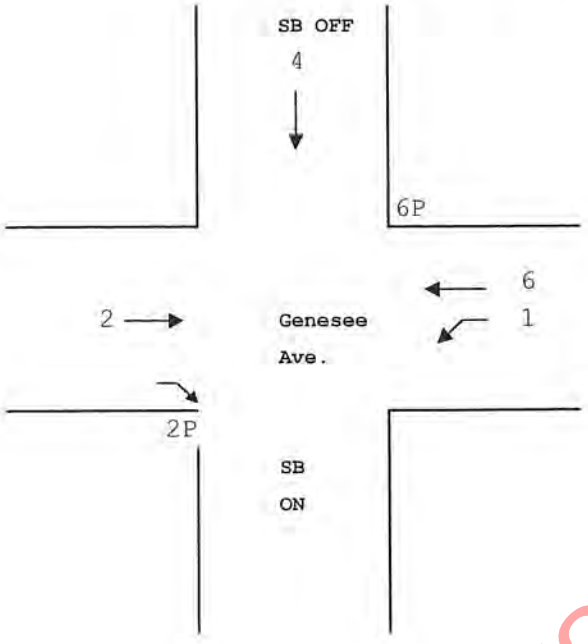
CONTROL PLAN TIME OF DAY
9+EVENT+HR+MIN+CP+OS+E+DOW

	HR	MIN	CP	OS	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0											
1											
2											
3											
4											
5											
6											
7											
8											
9											
A											
B											
C											
D											
E											
F											

DATE: 6/7/2018

LOCATION: RTE 5 SB / GENESSE

CONFLICT MONITOR PROGRAM



LOCATION: **RTE 5 NB @ GENESEE**

CALTRANS C8 Version 3 DATE: 7/9/2018 PAGE 1

F PAGE

	INTERVAL	PHASE TIMING 1	2	3	4	5	6	7	8	9
0	WALK	1	7	1	1	1	7	1	1	CLK RST
1	DONT WALK	1	21	1	1	1	18	1	1	
2	MIN GREEN	1	13	1	1	5	11	1	5	
3	TYPE 3 DET	0	0	0	0	0	0	0	0	
4	ADD/VEH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
5	PASSAGE	0.9	2.0	0.9	0.9	2.0	2.0	0.9	2.0	
6	MAX GAP	0.9	2.0	0.9	0.9	2.0	2.0	0.9	2.0	
7	MIN GAP	0.9	2.0	0.9	0.9	2.0	2.0	0.9	2.0	
8	MAX EXT	9	40	9	9	35	30	9	45	
9	MAX 2									YR
A	MAX 3									MO
B										DAY
C	REDUCE BY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	DOW
D	EVERY	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	HR
E	YELLOW	3.0	5.2	3.0	3.0	3.2	5.2	3.0	4.1	MIN
F	RED	1.0	2.0	1.0	1.0	2.0	2.0	1.0	2.0	SEC
	PED XING FT		72				64			
	BIKE XING FT		93				72			

PRE-EMPTION E		FLAGS	1	2	3	4	5	6	7	8	F
EV SEL	0	PERMIT	1	2	3	4	5	6	7	8	0
RR1 CLR	5	RED LOCK									1
EVA DLY	0	YEL LOCK									2
EVA CLR	5	V RECALL		2			5	6			3
EVB DLY	0	P RECALL									4
EVB CLR	5	PED PHASES		2				6			5
EVC DLY	0	RT OLA									6
EVC CLR	5	RT OLB									7
EVD DLY	0	DBL ENTRY									8
EVD CLR	5	MAX 2 PHASES									9
MAX EV	255	LAG PHASES	READ ONLY								A
RR2 CLR	5	RED REST									B
		REST-IN-WALK									C
		MAX 3 PHASES									D
		YEL START UP									E
		FIRST PHASE		2				6			F
			1	2	3	4	5	6	7	8	

FOC LONG FAILURE	
FOD SHORT FAILURE	
FOE	0
FOF	5

FCO	3
FC1	3
FC2	10
FCA	0.0
FCB	0.0
FCC	0.0
FCD	0.0

FDO TB SELECT	1
FD3 PED SELECT	0
FD4 7 WIRE	0
FD5 PERMISSIVE	0
FD8 OS SEEKING	1

CO5 FLASH TYPE	1
CC2 DOWNLOAD	1

ENTRIES IN THESE LOCATIONS ARE NOT TO BE CHANGED

ENTRIES IN THESE LOCATIONS CAN BE CHANGED IN CC1 FLASH ONLY

LOCATION: **RTE 5 NB @ GENESEE**

CALTRANS C8 Version 3 DATE: 6/7/2018

C PAGE

		CONTROL PLANS									Y-COORD			LAG PHASE		FLAGS									
		1	2	3	4	5	6	7	8	9		C	D	E		F	1	2	3	4	5	6	7	8	
0	CYCLE LENGTH	90	90	100	90	100	90									LAG FZ FREE		2		4		6		8	0
1	FZ1 GRN FCTR	0	0	0	0	0	0							GAPOUT CP1		LAG FZ CP 1		2		4		6		8	1
2														GAPOUT CP2		LAG FZ CP 2		2		4		6		8	2
3	FZ3 GRN FCTR	0	0	0	0	0	0							GAPOUT CP3		LAG FZ CP 3		2		4		6		8	3
4	FZ4 GRN FCTR	0	0	0	0	0	0				PERM TIME			GAPOUT CP4		LAG FZ CP 4		2		4		6		8	4
5	FZ5 GRN FCTR	35	25	30	17	15	18				LAG OFFSET			GAPOUT CP5		LAG FZ CP 5		2		4		6		8	5
6											FORCE OFF			GAPOUT CP6		LAG FZ CP 6		2		4		6		8	6
7	FZ7 GRN FCTR	0	0	0	0	0	0				LONG GRN			GAPOUT CP7		LAG FZ CP 7									7
8	FZ8 GRN FCTR	15	40	30	40	35	40				NO GREEN			GAPOUT CP8		LAG FZ CP 8									8
9	MULTI CYCLE	0	0	0	0	0	0							GAPOUT CP9		LAG FZ CP 9									9
A	OFFSET A	43	45	55	50	50	55				OFFSET					LAG C COORD									A
B	OFFSET B															LAG D COORD									B
C	OFFSET C															COORD FAZES		2				6			C
D	FZ 3 EXT																								D
E	FZ 7 EXT																								E
F	OFFSET INTRPT																								F
																	1	2	3	4	5	6	7	8	

CO1 MANUAL CP
CO2 MASTER CP
CO3 CURRENT CP
CO4 LAST CP
CO7 TRNSMT CP
COD MANUAL OFFSET
CAO LOCAL CYCLE TIMER
CBO MASTER CYCLE TIMER
CAA LOCAL OFFSET
CBA MASTER OFFSET

SYSTEM MASTER:
RTE 5 NB RAMP

FEATURE	OFF	ON
1		
2		
3		
4		
5		
6		
7		
8		

LOCATION	OFF	ON
1		
2		1
3		
4		
5		
6		
7		
8		

COO = **2**

CCB/CDB OFFSET TIMER
CCC/CDC LAG GREEN TIMER
CCD/CDD FORCE OFF TIMER
CCE/CDE LONG GREEN TIMER
CCF/CDF NO GREEN TIMER

	D	FLAGS								E	FLAGS								F	FLAGS								
	MAX	1	2	3	4	5	6	7	8	MIN	1	2	3	4	5	6	7	8	PED	1	2	3	4	5	6	7	8
0	RCL									RCL									RCL								
1	CP 1					5				CP 1								8	CP 1								
2	CP 2									CP 2					5				CP 2								
3	CP 3									CP 3									CP 3								
4	CP 4									CP 4					5			8	CP 4								
5	CP 5									CP 5					5			8	CP 5								
6	CP 6									CP 6					5			8	CP 6								
7	CP 7									CP 7									CP 7								
8	CP 8									CP 8									CP 8								
9	CP 9									CP 9									CP 9								
A																			RCL 1								
B																			RCL 2								
C																											
D																											
E																											
F																											
		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8

E PAGE

	E	FLAGS								F	FLAGS								
	FUNCTION	1	2	3	4	5	6	7	8	FUNCTION	1	2	3	4	5	6	7	8	
0										CODE 4									0
1										CODE 5									1
2										C-RECALL									2
3										D-RECALL									3
4										EXCLUSIVE									4
5										2 PED		2							5
6										6 PED						6			6
7										4 PED				4					7
8										8 PED								8	8
9																			9
A	OLA NOT									OLA ON									A
B	OLB NOT									OLB ON									B
C	OLC NOT									OLC ON									C
D	OLD NOT									OLD ON									D
E																			E
F																			F
		1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8	

LAST POWER FAILURE REGISTER

HOUR = D-A-E
MINUTE = D-B-E
DAY = D-C-E

RCL 1 = TIME OF DAY MAX RECALL (1ST SELECT) PHASES
(CALL ACTIVE LIGHTS)
RCL 2 = TIME OF DAY MAX RECALL (2ND SELECT) PHASES
(CALL ACTIVE LIGHTS)

LAST FLASH TIME REGISTER

HOUR = D-A-F
MINUTE = D-B-F
DAY = D-C-F

D-E-E = C8 VERSION NUMBER
D-E-F = LITHIUM BATTERY CONDITION
84 = BAD
85 = GOOD

LOCATION: **RTE 5 NB @ GENESEE**

CALTRANS C8 Version 3 DATE: 6/7/2018

7 PAGE

9 PAGE C09 = 0 or 1

9 PAGE C09 = 2

TIME OF DAY ACTIVITY TABLE

7+EVENT+HR+MIN+ACT+"E"+ON/OFF+DOW LTS

	HR	MIN	ACT	ON/OFF	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0											
1											
2											
3											
4											
5											
6						-					
7											
8											
9											
A											
B											
C											
D											
E											
F											

ACTIVITY CODE

1 TYPE OF MAX TERMINATION
2 MAX 2
3 MAX 3
4 COND SERV (1ST SELECT)
5 COND SERV (2ND SELECT)
6 ENERGIZE AUX OUTPUT-RED
7 ENERGIZE AUX OUTPUT-GREEN
8 ENERGIZE AUX OUTPUT-YELLOW
9 TIME OF DAY MAX RECALL (1ST SELECT)
A TRAFFIC ACT. MAX 2 OPERATION
B TIME OF DAY MAX RECALL (2ND SELECT)
C YELLOW YIELD COORDINATION
D YELLOW YIELD COORDINATION
E TIME OF DAY FREE OPERATION
F FLASHING OPERATION

CONTROL PLAN TIME OF DAY

9+EVENT+HR+MIN+CP+OS+E+DOW

	HR	MIN	CP	OS	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0	**06**	**45**	**4**	**A**		**2**	**3**	**4**	**5**	**6**	
1	**08**	**15**	**6**	**A**		**2**	**3**	**4**	**5**	**6**	
2	**10**	**00**	**3**	**A**		**2**	**3**	**4**	**5**	**6**	
3	**15**	**00**	**1**	**A**		**2**	**3**	**4**	**5**	**6**	
4	**18**	**30**	**E**			**2**	**3**	**4**	**5**	**6**	
5											
6											
7											
8											
9											
A											
B											
C											
D											
E											
F											

CONTROL PLAN TIME OF DAY

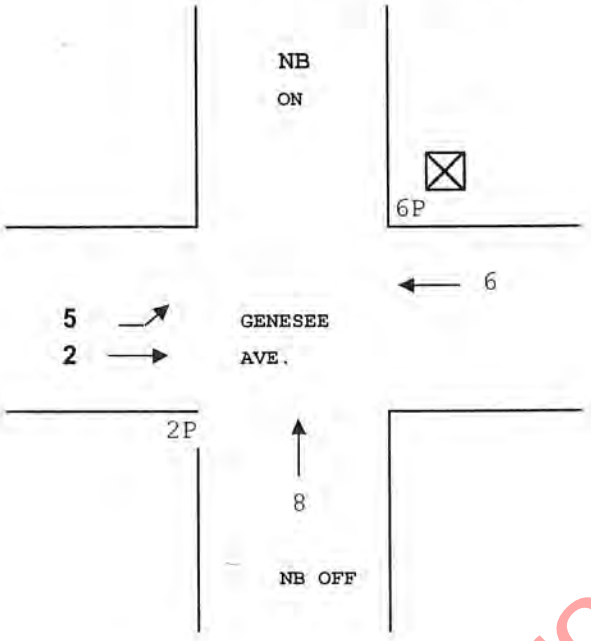
9+EVENT+HR+MIN+CP+OS+E+DOW

	HR	MIN	CP	OS	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0											
1											
2											
3											
4											
5											
6											
7											
8											
9											
A											
B											
C											
D											
E											
F											

DATE: 6/7/2018

LOCATION: RTE 5 NB @ GENESEE

CONFLICT MONITOR PROGRAM



APPENDIX F

CUMULATIVE PROJECTS
TRIP DISTRIBTION MAPS

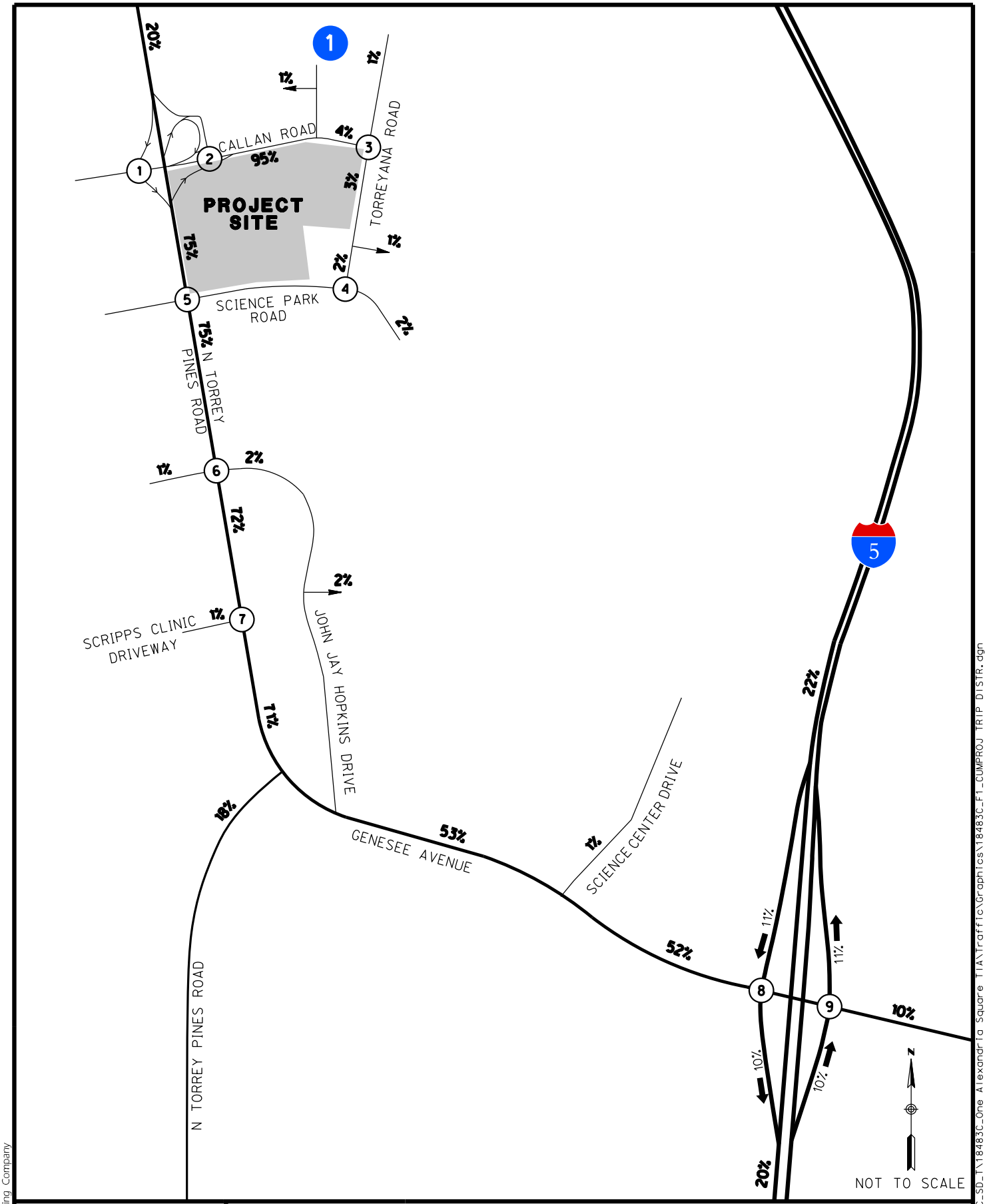


EXHIBIT F-1

TOUCHTONE EOT TRIP DISTRIBUTION

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

RICK ENGINEERING COMPANY

LEGEND

xx% =DISTRIBUTION PERCENTAGE

=CUMULATIVE PROJECT LOCATION

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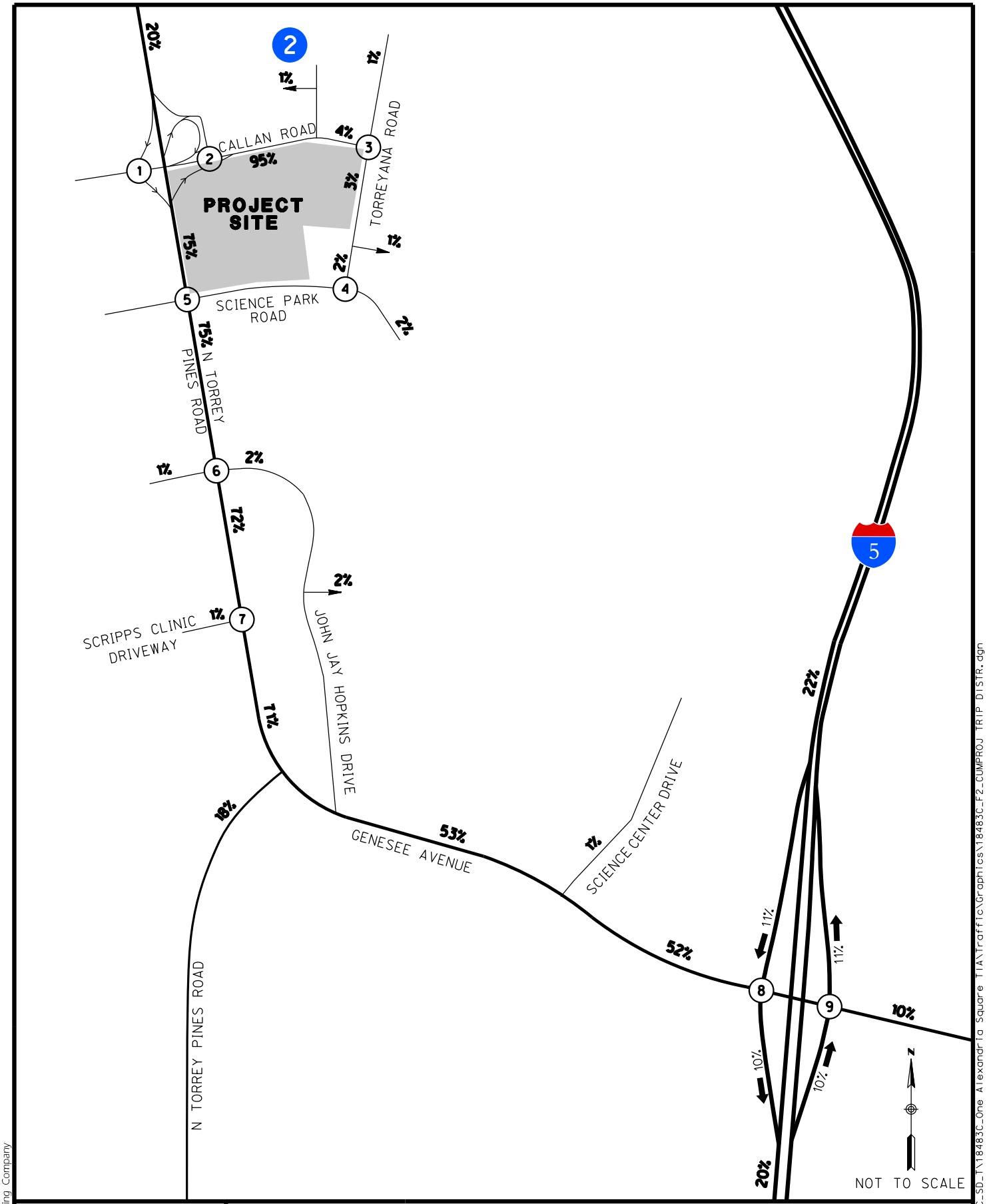

EXHIBIT F-2

HEALTHSPEAK CAMPUS TRIP DISTRIBUTION

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

RICK ENGINEERING COMPANY

LEGEND

xx% =DISTRIBUTION PERCENTAGE

=CUMULATIVE PROJECT LOCATION

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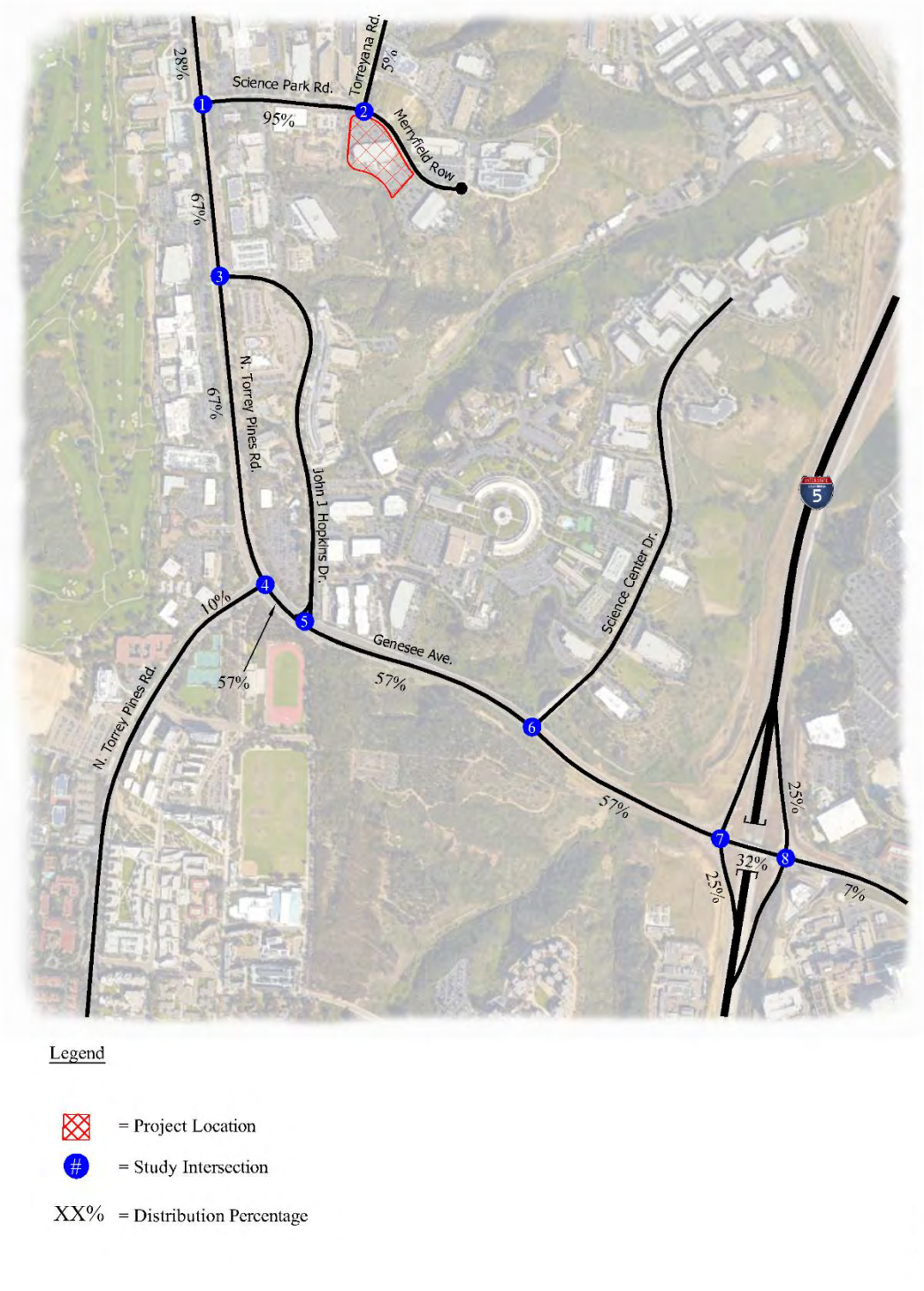
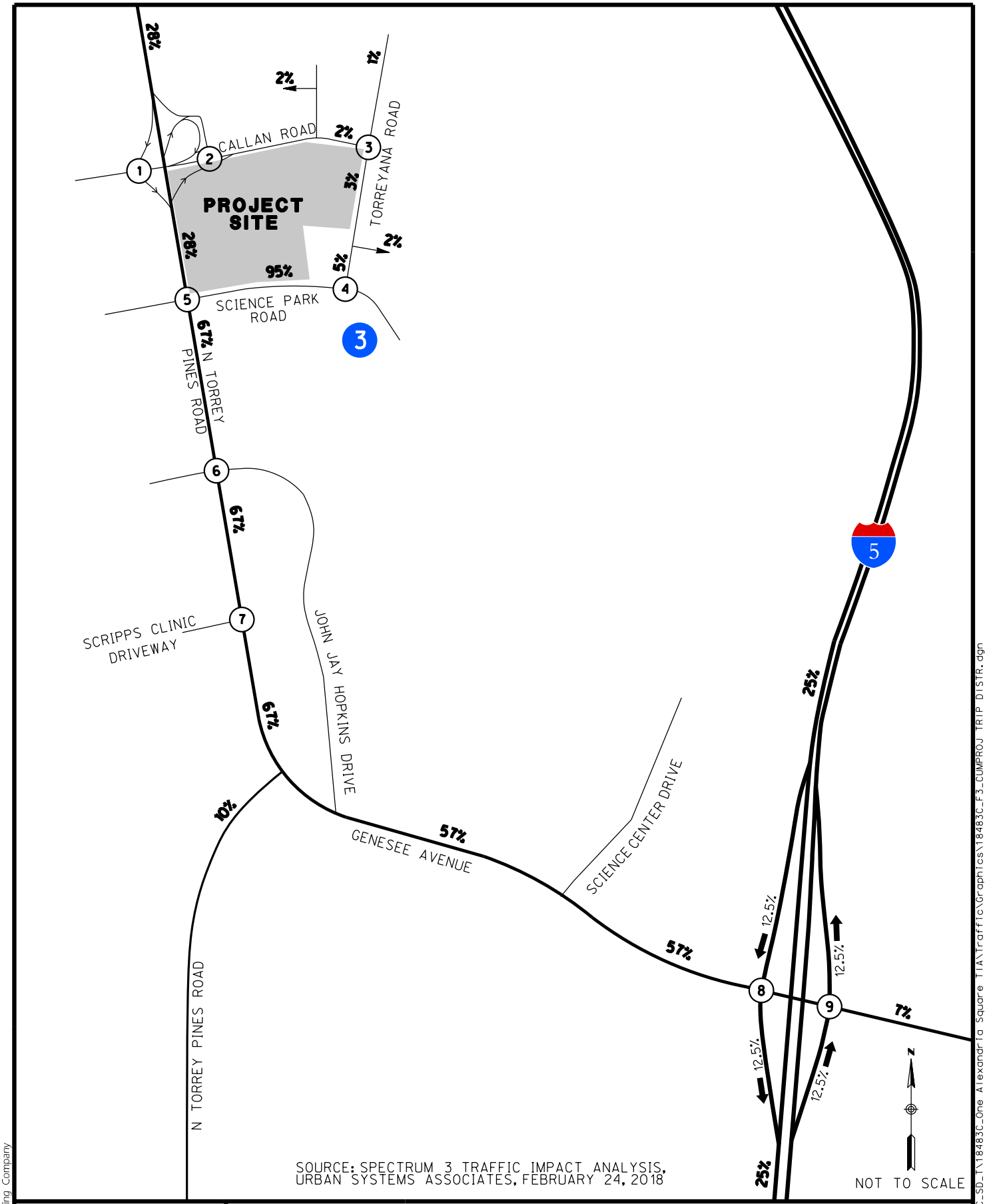


Figure 3-1

Project Distribution Percentages



RICK ENGINEERING COMPANY

EXHIBIT F-3

SPECTRUM III TRIP DISTRIBUTION

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

LEGEND

xx% =DISTRIBUTION PERCENTAGE

=CUMULATIVE PROJECT LOCATION

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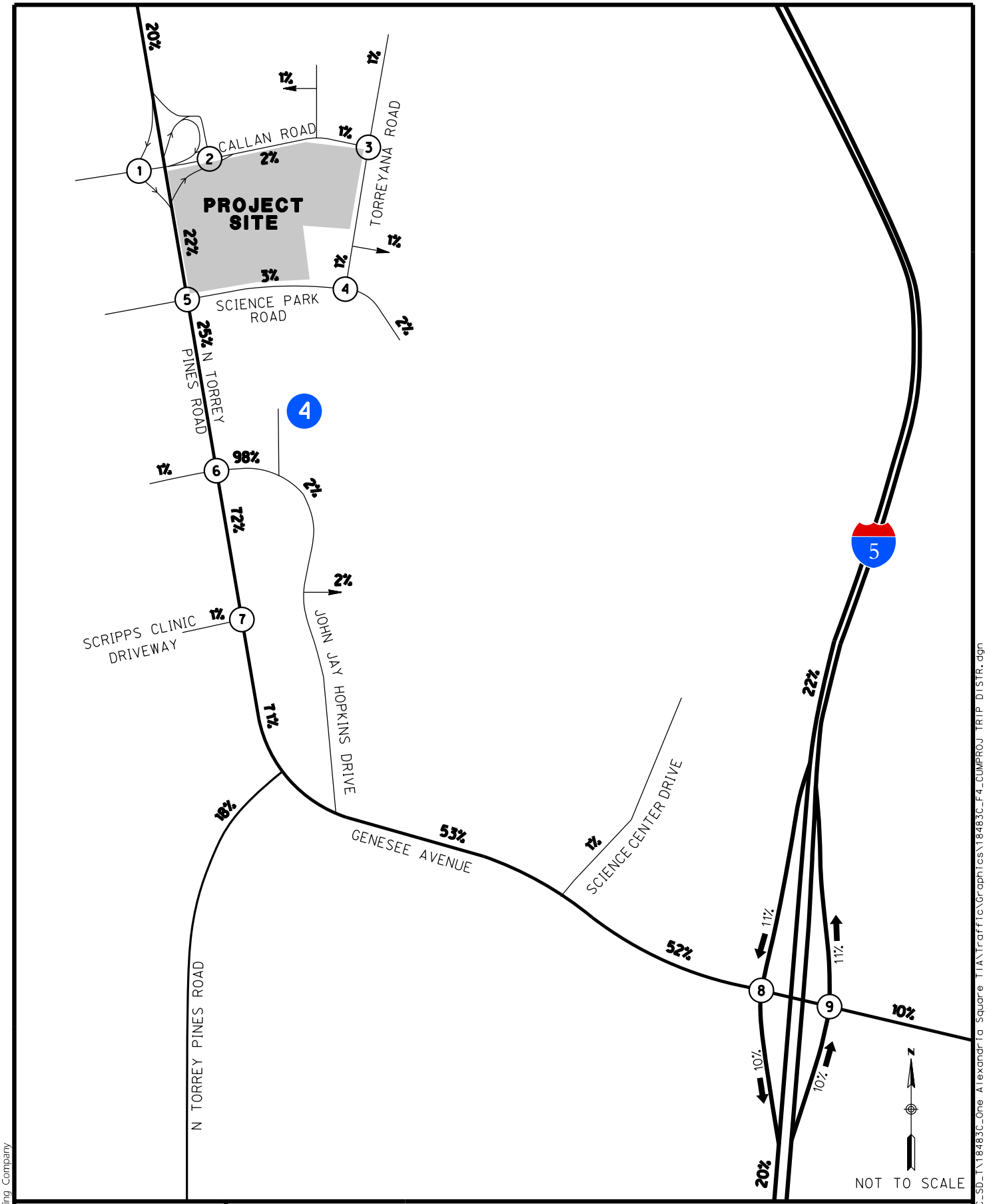

EXHIBIT F-4

SPECTRUM V TRIP DISTRIBUTION

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

RICK ENGINEERING COMPANY

LEGEND

xx% = DISTRIBUTION PERCENTAGE

= CUMULATIVE PROJECT LOCATION

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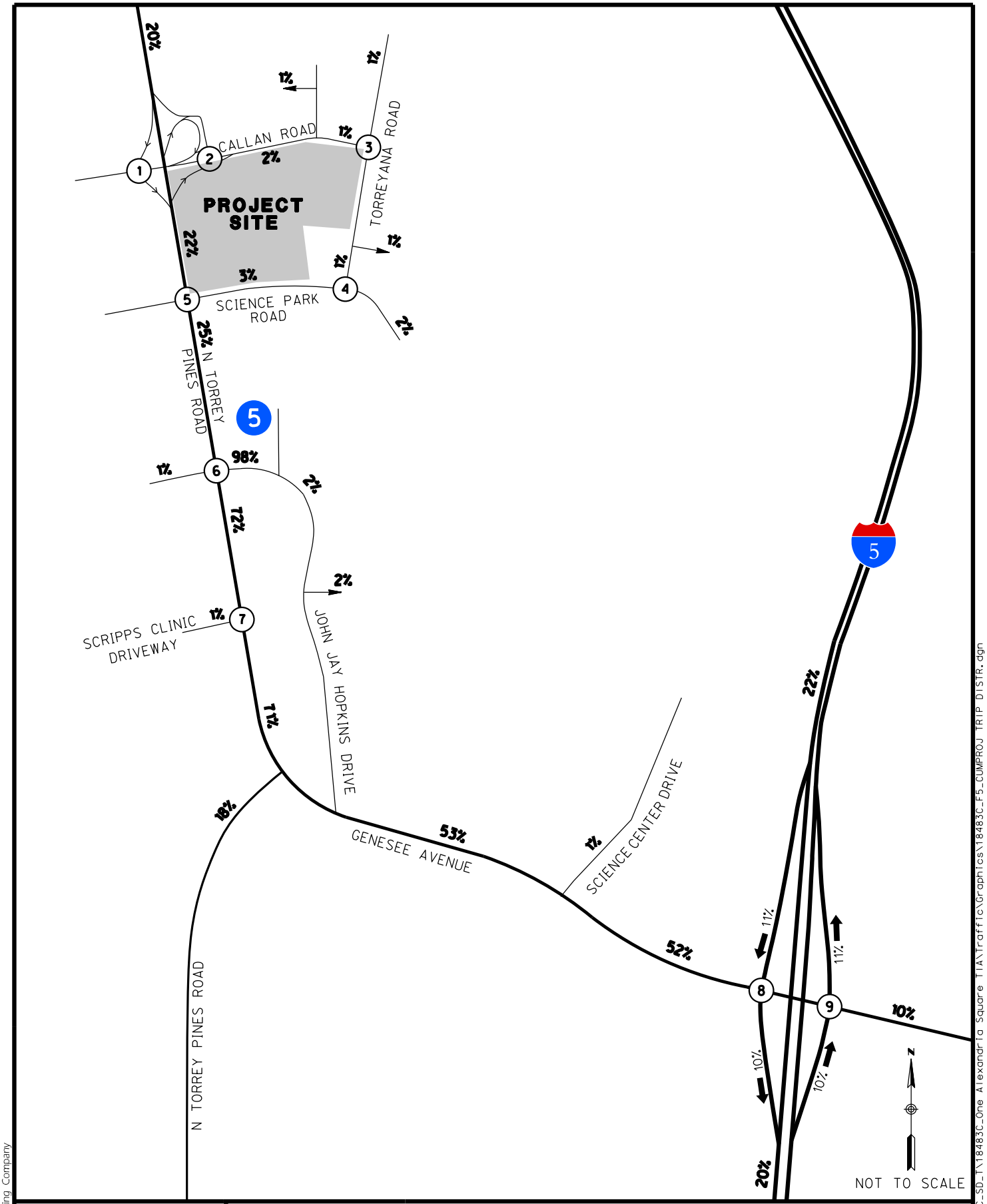

EXHIBIT F-5

SBPMDI BUILDING 1 TRIP DISTRIBUTION

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

RICK ENGINEERING COMPANY

LEGEND

xx% =DISTRIBUTION PERCENTAGE

=CUMULATIVE PROJECT LOCATION

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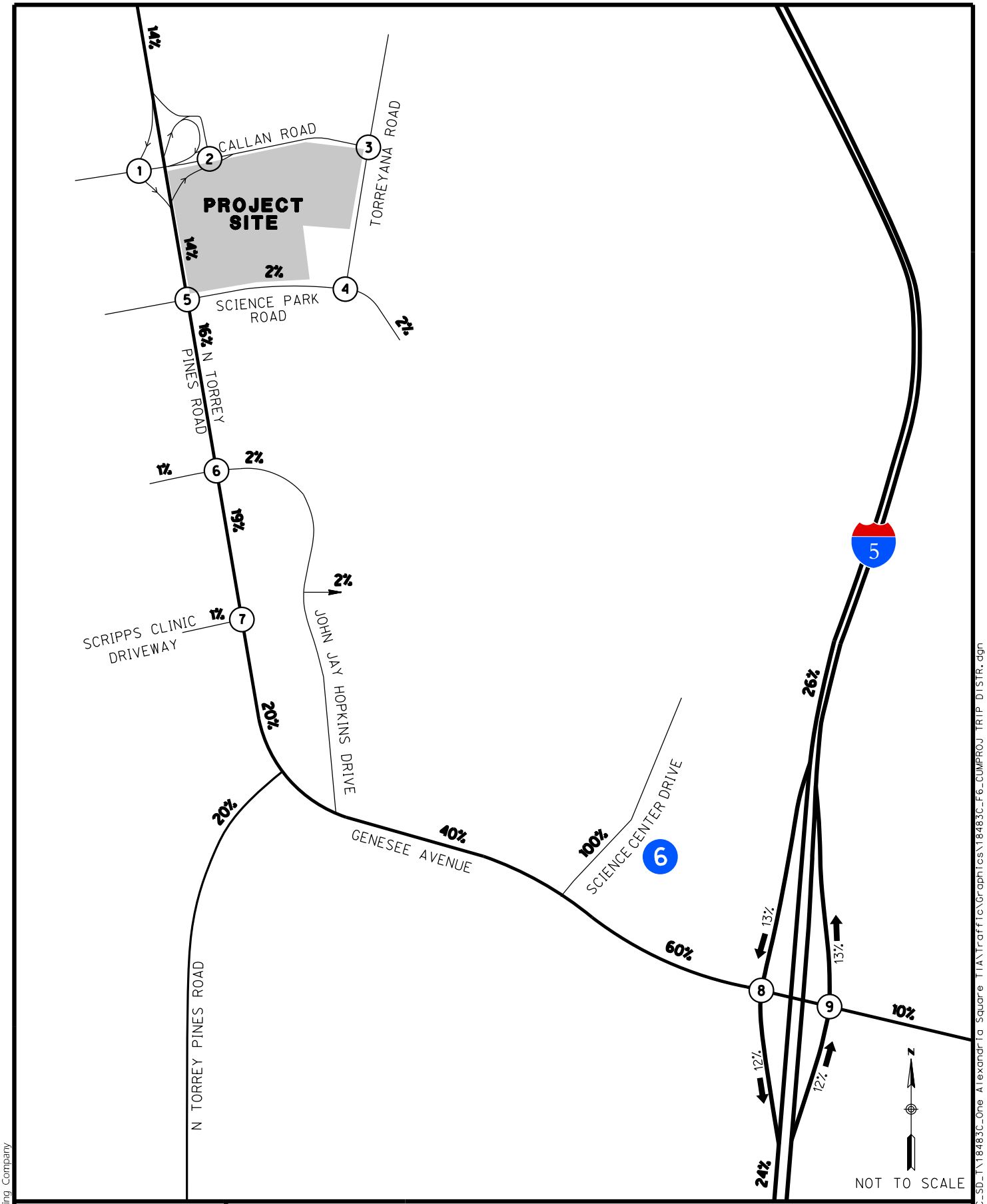

EXHIBIT F-6

THE BOARDWALK TRIP DISTRIBUTION

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

RICK ENGINEERING COMPANY

LEGEND

xx% =DISTRIBUTION PERCENTAGE

=CUMULATIVE PROJECT LOCATION

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28-JAN-2021 10:19

APPENDIX G

APPROVAL LETTER FROM SAN DIEGO CITY COUNCIL FOR ALL-WAY STOP AT SCIENCE PARK ROAD / TORREYANA ROAD

COUNCIL PRESIDENT PRO TEM BARBARA BRY
CITY OF SAN DIEGO
DISTRICT 1

MEMORANDUM

DATE: October 8, 2020

TO: Kris McFadden, Director, Transportation and Storm Water Department

FROM: Council President Pro Tem Barbara Bry Barbara Bry

SUBJECT: Installation of All-Way Stop Signs at Torreyana Road and Science Park Road

---

I respectfully request that "All-Way" stop signs be installed at the intersection of Torreyana Road and Science Park Road to help improve safety conditions for multi-modal transportation in the area.

On September 15, 2020, Alexandria Real Estate Equities Inc., and Rick Engineering Co. presented this request to the University City Planning Group (UCPG). Their presentation demonstrated that the installation of "All-Way" stop signs at this intersection will substantially aid in the safety of pedestrians and bicycle riders travelling between the two sections of the Alexandria campus.

Alexandria Real Estate Equities Inc. and Rick Engineering Co. also stressed that the need for multi-modal transportation safety will only increase once the Spectrum Bridge project is completed. The installation of these stop signs will help to meet that safety need.

Following the presentation, UCPG voted to request the installation of "All-Way" stop signs at Torreyana Road and Science Park Road, by a vote of 13 Yes, 0 No, 0 Abstentions, and 1 Recusal.

Per Council Policy 200-08, I am forwarding this request and appreciate your time and assistance. Thank you.

cc: Andrew Kleis, Transportation and Stormwater

Joe Jimenez, Traffic Engineering Operations

Jessica Lawrence, Policy and Council Affairs

APPENDIX H

QUEUING ANALYSIS WORKSHEETS

OPENING YEAR WITHOUT PROJECT CONDITIONS

Intersection: 5: N Torrey Pines Road & Science Park Road

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	LT	R	L	LT	R	L	T	T	T	R	L	T
Maximum Queue (ft)	46	42	49	47	20	128	66	90	63	66	108	86
Average Queue (ft)	27	18	24	25	4	63	23	44	30	46	95	56
95th Queue (ft)	52	42	59	56	17	122	62	106	72	62	122	103
Link Distance (ft)	175		171	171	171		1220	1220	1220			472
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)		50				260				225	200	
Storage Blk Time (%)	6	0										
Queuing Penalty (veh)	3	0										

Intersection: 5: N Torrey Pines Road & Science Park Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	84	70	52
Average Queue (ft)	37	39	18
95th Queue (ft)	83	77	48
Link Distance (ft)	472	472	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			100
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: N Torrey Pines Road & John Jay Hopkins Drive

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	LT	R	L	T	T	T	R	L	T
Maximum Queue (ft)	53	65	27	47	47	110	457	471	604	159	136	62
Average Queue (ft)	17	26	8	17	14	67	177	237	347	55	114	45
95th Queue (ft)	52	61	25	47	44	105	410	453	571	146	133	64
Link Distance (ft)		526		297			1112	1112	1112			1220
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	75		85		160	160				100	215	
Storage Blk Time (%)		0					3		45			
Queuing Penalty (veh)		0					4		52			

Intersection: 6: N Torrey Pines Road & John Jay Hopkins Drive

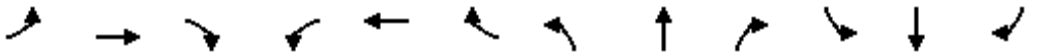
Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	90	172	23
Average Queue (ft)	59	108	5
95th Queue (ft)	95	188	20
Link Distance (ft)	1220	1220	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			100
Storage Blk Time (%)		18	
Queuing Penalty (veh)		10	

Intersection: 7: N Torrey Pines Road & Scripps Clinic Driveway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (ft)	31	31	161	50	71	163	65	70	222
Average Queue (ft)	22	19	113	20	20	51	20	24	94
95th Queue (ft)	42	43	175	51	65	149	59	66	211
Link Distance (ft)		713		1068	1068	1068	1112	1112	1112
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50		290						
Storage Blk Time (%)	0	0							
Queuing Penalty (veh)	0	0							

Zone Summary

Zone wide Queuing Penalty: 70



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	507	192	172	1969	0	0	0	0	1406	1	1557
Future Volume (vph)	0	507	192	172	1969	0	0	0	0	1406	1	1557
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285		435	0		0	0		0	810		810
Storage Lanes	0		2	2		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		589			593			1478			1723	
Travel Time (s)		8.0			8.1			33.6			39.2	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	557	211	189	2164	0	0	0	0	772	774	1711
v/c Ratio		0.25	0.22	0.94	1.04					1.01	1.01	1.29
Control Delay		24.3	4.1	79.3	45.5					61.9	61.8	160.9
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		24.3	4.1	79.3	45.5					61.9	61.8	160.9
Queue Length 50th (ft)		59	0	58	319					~458	~461	~697
Queue Length 95th (ft)		78	27	m#108	m336					#721	#722	#847
Internal Link Dist (ft)		509			513			1398			1643	
Turn Bay Length (ft)			435							810		810
Base Capacity (vph)		2246	978	202	2079					763	765	1325
Starvation Cap Reductn		0	0	0	0					0	0	0
Spillback Cap Reductn		0	0	0	0					0	0	0
Storage Cap Reductn		0	0	0	0					0	0	0
Reduced v/c Ratio		0.25	0.22	0.94	1.04					1.01	1.01	1.29

Intersection Summary

Area Type: Other

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	1651	0	0	706	575	1362	3	985	0	0	0
Future Volume (vph)	215	1651	0	0	706	575	1362	3	985	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		400	840		750	0		0
Storage Lanes	2		0	0		2	1		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		593			919			1406			1771	
Travel Time (s)		8.1			12.5			32.0			40.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	234	1795	0	0	767	625	740	743	1071	0	0	0
v/c Ratio	0.87	0.86			0.36	0.51	0.97	0.97	0.81			
Control Delay	50.1	23.8			26.3	3.8	51.8	51.7	25.0			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	50.1	23.8			26.3	3.8	51.8	51.7	25.0			
Queue Length 50th (ft)	69	218			85	0	416	418	264			
Queue Length 95th (ft)	#133	m221			109	42	#677	#680	360			
Internal Link Dist (ft)		513			839			1326			1691	
Turn Bay Length (ft)						400	840		750			
Base Capacity (vph)	270	2079			2137	1237	763	766	1322			
Starvation Cap Reductn	0	0			0	0	0	0	0			
Spillback Cap Reductn	0	0			0	0	0	0	0			
Storage Cap Reductn	0	0			0	0	0	0	0			
Reduced v/c Ratio	0.87	0.86			0.36	0.51	0.97	0.97	0.81			

Intersection Summary

Area Type: Other

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

m Volume for 95th percentile queue is metered by upstream signal.

Intersection: 5: N Torrey Pines Road & Science Park Road

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	LT	R	L	LT	R	L	T	T	T	R	L	T
Maximum Queue (ft)	65	21	161	160	49	92	191	196	216	41	18	114
Average Queue (ft)	30	20	108	127	46	55	83	117	122	20	4	90
95th Queue (ft)	71	22	182	184	50	114	176	215	237	41	15	132
Link Distance (ft)	175		160	160	160		1220	1220	1220			507
Upstream Blk Time (%)			3	1								
Queuing Penalty (veh)			6	2								
Storage Bay Dist (ft)		50				260				225	200	
Storage Blk Time (%)	8								0			
Queuing Penalty (veh)	5								0			

Intersection: 5: N Torrey Pines Road & Science Park Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	127	143	9
Average Queue (ft)	74	98	2
95th Queue (ft)	121	138	8
Link Distance (ft)	507	507	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			100
Storage Blk Time (%)		7	
Queuing Penalty (veh)		1	

Intersection: 6: N Torrey Pines Road & John Jay Hopkins Drive

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	LT	R	L	T	T	T	R	L	T
Maximum Queue (ft)	55	108	104	164	117	48	115	92	117	26	50	158
Average Queue (ft)	43	84	32	96	71	19	81	57	52	5	35	125
95th Queue (ft)	61	120	95	162	121	49	126	98	107	23	54	163
Link Distance (ft)		526		297			1112	1112	1112			1220
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	75		85		160	160				100	215	
Storage Blk Time (%)		17		12					5			
Queuing Penalty (veh)		8		40					1			

Intersection: 6: N Torrey Pines Road & John Jay Hopkins Drive

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	220	278	17
Average Queue (ft)	171	227	3
95th Queue (ft)	235	314	14
Link Distance (ft)	1220	1220	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			100
Storage Blk Time (%)		32	
Queuing Penalty (veh)		8	

Intersection: 7: N Torrey Pines Road & Scripps Clinic Driveway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (ft)	31	92	115	50	48	49	142	248	389
Average Queue (ft)	21	48	48	15	15	20	63	83	174
95th Queue (ft)	41	101	110	48	48	59	140	227	372
Link Distance (ft)		713		1068	1068	1068	1112	1112	1112
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50		290						
Storage Blk Time (%)	0	10					0		
Queuing Penalty (veh)	0	3					0		

Zone Summary

Zone wide Queuing Penalty: 74

Intersection: 8: I-5 SB Ramps & Genesee Avenue

Movement	EB	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB
Directions Served	T	T	T	T	T	R	R	L	L	T	T	T
Maximum Queue (ft)	240	271	89	107	62	58	100	134	120	87	109	113
Average Queue (ft)	175	184	71	62	33	37	61	96	86	64	58	67
95th Queue (ft)	249	261	98	107	67	66	110	134	117	103	110	113
Link Distance (ft)	521	521	521	521	521			502	502	502	502	502
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)						435	435					
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 8: I-5 SB Ramps & Genesee Avenue

Movement	SB	SB	SB	SB
Directions Served	L	LT	R	R
Maximum Queue (ft)	114	205	53	111
Average Queue (ft)	69	164	46	51
95th Queue (ft)	115	229	60	103
Link Distance (ft)		1604	1604	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	810			810
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: I-5 NB Ramps & Genesee Avenue

Movement	EB	EB	WB	WB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	T	T	T	R	R	L	L	R
Maximum Queue (ft)	494	492	86	36	107	81	544	425	411	181	281	74
Average Queue (ft)	348	348	54	11	65	47	116	349	290	137	230	32
95th Queue (ft)	597	586	105	36	112	89	469	419	412	202	315	69
Link Distance (ft)	486	486	884	884	884	884	884			1789	1789	1789
Upstream Blk Time (%)	2	1										
Queuing Penalty (veh)	10	6										
Storage Bay Dist (ft)								400	400	840		
Storage Blk Time (%)								0	0			
Queuing Penalty (veh)								0	0			

Intersection: 9: I-5 NB Ramps & Genesee Avenue

Movement	NB
Directions Served	R
Maximum Queue (ft)	47
Average Queue (ft)	25
95th Queue (ft)	50
Link Distance (ft)	1789
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	750
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 129

OPENING YEAR WITH PROJECT CONDITIONS

Intersection: 5: N Torrey Pines Road & Science Park Road

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	LT	R	L	LT	R	L	T	T	T	R	L	T
Maximum Queue (ft)	24	43	67	47	21	195	127	133	116	152	149	65
Average Queue (ft)	7	18	29	35	8	122	43	67	60	75	123	45
95th Queue (ft)	22	42	72	52	25	217	123	149	137	174	155	72
Link Distance (ft)	175		171	171	171		1220	1220	1220			471
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)		50				260				225	200	
Storage Blk Time (%)		0										
Queuing Penalty (veh)		0										

Intersection: 5: N Torrey Pines Road & Science Park Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	44	146	14
Average Queue (ft)	25	72	6
95th Queue (ft)	60	142	17
Link Distance (ft)	471	471	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			100
Storage Blk Time (%)		3	
Queuing Penalty (veh)		1	

Intersection: 6: N Torrey Pines Road & John Jay Hopkins Drive

Movement	EB	EB	WB	WB	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	R	L	T	T	T	R	L	T	T
Maximum Queue (ft)	24	79	27	44	208	200	155	261	160	195	91	97
Average Queue (ft)	9	36	11	19	116	112	123	202	74	150	66	83
95th Queue (ft)	28	74	33	47	199	205	173	287	193	210	104	106
Link Distance (ft)		526	297			1112	1112	1112			1220	1220
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	75			160	160				100	215		
Storage Blk Time (%)		1				5		37				
Queuing Penalty (veh)		0				6		43				

Intersection: 6: N Torrey Pines Road & John Jay Hopkins Drive

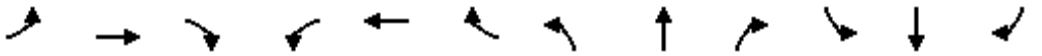
Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	154	23
Average Queue (ft)	113	8
95th Queue (ft)	162	25
Link Distance (ft)	1220	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)	15	
Queuing Penalty (veh)	9	

Intersection: 7: N Torrey Pines Road & Scripps Clinic Driveway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (ft)	32	31	156	80	94	105	71	71	117
Average Queue (ft)	15	24	119	33	48	59	32	21	63
95th Queue (ft)	37	43	168	84	103	120	83	65	134
Link Distance (ft)		713		1068	1068	1068	1112	1112	1112
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50		290						
Storage Blk Time (%)	0	0							
Queuing Penalty (veh)	0	0							

Zone Summary

Zone wide Queuing Penalty: 59



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	512	195	172	2012	0	0	0	0	1406	1	1588
Future Volume (vph)	0	512	195	172	2012	0	0	0	0	1406	1	1588
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285		435	0		0	0		0	810		810
Storage Lanes	0		2	2		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		589			593			1502			1713	
Travel Time (s)		8.0			8.1			34.1			38.9	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	563	214	189	2211	0	0	0	0	772	774	1745
v/c Ratio		0.25	0.22	0.94	1.06					1.01	1.01	1.32
Control Delay		24.3	4.1	79.3	54.6					61.9	61.8	172.0
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		24.3	4.1	79.3	54.6					61.9	61.8	172.0
Queue Length 50th (ft)		59	0	60	~377					~458	~461	~720
Queue Length 95th (ft)		79	27	#126	m#358					#721	#722	#871
Internal Link Dist (ft)		509			513			1422			1633	
Turn Bay Length (ft)			435							810		810
Base Capacity (vph)		2246	980	202	2079					763	765	1325
Starvation Cap Reductn		0	0	0	0					0	0	0
Spillback Cap Reductn		0	0	0	0					0	0	0
Storage Cap Reductn		0	0	0	0					0	0	0
Reduced v/c Ratio		0.25	0.22	0.94	1.06					1.01	1.01	1.32

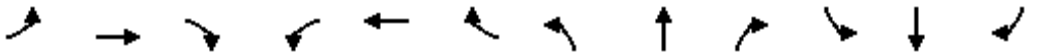
Intersection Summary

Area Type: Other

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

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

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	1653	0	0	720	575	1391	3	985	0	0	0
Future Volume (vph)	219	1653	0	0	720	575	1391	3	985	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		400	840		750	0		0
Storage Lanes	2		0	0		2	1		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		593			919			1424			1752	
Travel Time (s)		8.1			12.5			32.4			39.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	238	1797	0	0	783	625	756	759	1071	0	0	0
v/c Ratio	0.88	0.86			0.37	0.51	0.99	0.99	0.81			
Control Delay	52.4	23.8			26.4	3.8	56.6	56.6	25.0			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	52.4	23.8			26.4	3.8	56.6	56.6	25.0			
Queue Length 50th (ft)	70	219			87	0	432	435	264			
Queue Length 95th (ft)	#136	m222			111	42	#700	#702	360			
Internal Link Dist (ft)		513			839			1344			1672	
Turn Bay Length (ft)						400	840		750			
Base Capacity (vph)	270	2079			2137	1237	763	766	1322			
Starvation Cap Reductn	0	0			0	0	0	0	0			
Spillback Cap Reductn	0	0			0	0	0	0	0			
Storage Cap Reductn	0	0			0	0	0	0	0			
Reduced v/c Ratio	0.88	0.86			0.37	0.51	0.99	0.99	0.81			

Intersection Summary

Area Type: Other

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

m Volume for 95th percentile queue is metered by upstream signal.

Intersection: 5: N Torrey Pines Road & Science Park Road

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	LT	R	L	LT	R	L	T	T	T	R	L	T
Maximum Queue (ft)	42	21	128	194	48	113	221	260	280	38	63	104
Average Queue (ft)	19	21	108	141	40	55	111	141	145	21	35	80
95th Queue (ft)	46	21	130	207	55	115	236	292	319	36	63	119
Link Distance (ft)	175		160	160	160		1220	1220	1220			507
Upstream Blk Time (%)				5								
Queuing Penalty (veh)				10								
Storage Bay Dist (ft)		50				260				225	200	
Storage Blk Time (%)	0								5			
Queuing Penalty (veh)	0								5			

Intersection: 5: N Torrey Pines Road & Science Park Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	101	212	12
Average Queue (ft)	48	100	2
95th Queue (ft)	99	197	10
Link Distance (ft)	507	507	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			100
Storage Blk Time (%)		7	
Queuing Penalty (veh)		1	

Intersection: 6: N Torrey Pines Road & John Jay Hopkins Drive

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	LT	R	L	T	T	T	R	L	T
Maximum Queue (ft)	68	65	90	164	112	27	180	189	199	31	69	220
Average Queue (ft)	47	44	35	124	73	21	106	135	147	6	47	176
95th Queue (ft)	71	67	84	180	107	33	176	188	221	27	70	227
Link Distance (ft)		526		297			1112	1112	1112			1220
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	75		85		160	160				100	215	
Storage Blk Time (%)	0	0	0	13			5		26			0
Queuing Penalty (veh)	1	0	1	43			2		4			0

Intersection: 6: N Torrey Pines Road & John Jay Hopkins Drive

Movement	SB	SB
Directions Served	T	T
Maximum Queue (ft)	398	433
Average Queue (ft)	208	317
95th Queue (ft)	375	457
Link Distance (ft)	1220	1220
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		44
Queuing Penalty (veh)		11

Intersection: 7: N Torrey Pines Road & Scripps Clinic Driveway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (ft)	31	74	88	93	92	112	243	267	651
Average Queue (ft)	6	45	65	33	38	37	98	118	230
95th Queue (ft)	26	76	102	101	100	106	244	269	622
Link Distance (ft)		713		1068	1068	1068	1112	1112	1112
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50		290						
Storage Blk Time (%)	0	8					4		
Queuing Penalty (veh)	0	2					0		

Zone Summary

Zone wide Queuing Penalty: 79

Intersection: 8: I-5 SB Ramps & Genesee Avenue

Movement	EB	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB
Directions Served	T	T	T	T	T	R	R	L	L	T	T	T
Maximum Queue (ft)	226	225	89	89	74	119	101	134	114	85	97	77
Average Queue (ft)	159	170	65	63	37	44	57	92	81	48	55	59
95th Queue (ft)	219	226	99	89	82	116	109	156	119	86	98	74
Link Distance (ft)	521	521	521	521	521			502	502	502	502	502
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)						435	435					
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 8: I-5 SB Ramps & Genesee Avenue

Movement	SB	SB	SB	SB
Directions Served	L	LT	R	R
Maximum Queue (ft)	167	188	75	69
Average Queue (ft)	91	134	51	47
95th Queue (ft)	169	189	75	69
Link Distance (ft)		1615	1615	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	810			810
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: I-5 NB Ramps & Genesee Avenue

Movement	EB	EB	WB	WB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	T	T	T	R	R	L	LT	R
Maximum Queue (ft)	549	523	83	98	72	502	592	425	412	206	283	74
Average Queue (ft)	380	382	61	41	52	140	222	410	395	137	237	34
95th Queue (ft)	620	581	89	103	78	442	652	443	432	214	315	69
Link Distance (ft)	502	502	869	869	869	869	869			1844	1844	1844
Upstream Blk Time (%)	5	2										
Queuing Penalty (veh)	25	11										
Storage Bay Dist (ft)								400	400	840		
Storage Blk Time (%)								6	1			
Queuing Penalty (veh)								10	2			

Intersection: 9: I-5 NB Ramps & Genesee Avenue

Movement	NB
Directions Served	R
Maximum Queue (ft)	47
Average Queue (ft)	30
95th Queue (ft)	50
Link Distance (ft)	1844
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	750
Storage Blk Time (%)	
Queuing Penalty (veh)	

APPENDIX I

EMAIL DOCUMENTATION OF COORDINATION WITH CALTRANS FOR SIGNAL TIMING IMPROVEMENTS

David Mizell

From: Woldeabzghi, Beraki T@DOT <beraki.woldeabzghi@dot.ca.gov>
Sent: Wednesday, December 16, 2020 11:38 AM
To: David Mizell
Subject: RE: Signal Timing Adjustments

Hi David,

Due to time constrain I have not looked at the synchro file. No we have not increased the cycle length , we may have change the offset or minor timing change since 2018. We do not have any plan to increase the cycle length but we are open to any change in the future if the traffic pattern change over all in the area.

Thanks
Beraki Woldeabzghi
Signal Operations
(858) 518-3665

From: David Mizell <dmizell@rickengineering.com>
Sent: Wednesday, December 16, 2020 10:41 AM
To: Woldeabzghi, Beraki T@DOT <beraki.woldeabzghi@dot.ca.gov>
Subject: FW: Signal Timing Adjustments

Hi Beraki,

Would you be able to assist me with the questions I have in my email below from yesterday regarding the I-5/Genesee interchange signal timing?

Thank you,

David Mizell, AICP

RICK ENGINEERING COMPANY
5620 FRIARS ROAD, SAN DIEGO, CA 92110

t 619.291.0707 / d 619.908.3503 / c 760.845.4711
dmizell@rickengineering.com / www.rickengineering.com

From: Ellyazidi, Sonya S@DOT <sonya.ellyazidi@dot.ca.gov>
Sent: Tuesday, December 15, 2020 12:58 PM
To: David Mizell <dmizell@rickengineering.com>
Cc: Woldeabzghi, Beraki T@DOT <beraki.woldeabzghi@dot.ca.gov>
Subject: FW: Signal Timing Adjustments

Hi David,

The subject locations are operated by Beraki.
Please contact him at beraki.woldeabzghi@dot.ca.gov for more details.

Sincerely,

Sonya Ellyazidi
Transportation Engineer-Electrical
7183 Opportunity Road
San Diego, CA 92111
Office # (858) 467-3035
Cell # (858) 518-3669

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

From: David Mizell <dmizell@rickengineering.com>
Sent: Tuesday, December 15, 2020 11:55 AM
To: Ellyazidi, Sonya S@DOT <sonya.ellyazidi@dot.ca.gov>
Subject: Signal Timing Adjustments

Hi Sonya,

Last year I received the attached signal timing plans at the I-5/Genesee Avenue interchange for a traffic impact study I've been working on. The timing plans show a date of 7/9/2018 and according to the information shown in these plans, the cycle length for the I-5/Genesee Avenue ramp intersections is 90 seconds for both the AM and PM peak periods.

However, the LOS analysis I had done for existing (November 2019) conditions showed LOS F at the Northbound I-5 Ramps/Genesee Avenue intersection during the PM peak hour, based on the HCM 6th Edition methodology using the Synchro software program, see attached. The issue appears to be that a 90 second cycle is simply not long enough to accommodate all the turning movements at the intersection, particularly the EB left turn and WB right turn, which are both feeding into the NB I-5 On-Ramp.

I had tried increasing the cycle length as a test to see if a longer cycle length would improve delay, and according to the HCM 6th methodology in Synchro, increasing the cycle length at the Northbound I-5 Ramps/Genesee Avenue intersection to 135 seconds during the PM peak hour would improve delay to LOS D, see attached PDF labeled "TEST".

I have a couple questions for Caltrans about the existing signal timing at the I-5/Genesee Avenue interchange. One, has the cycle length been adjusted to a longer cycle since these signal timing plans were prepared in 2018?

And two, if the current cycle length is still 90 seconds during the PM peak period, is it reasonable to assume that the cycle length would be increased in the near future to accommodate the increase in traffic? In my TIA report for the development project I'm working on, I'll need to recommend a signal timing adjustment to increase the cycle length to 135 seconds during the PM peak hour. Is it also reasonable that the project applicant could work with Caltrans to increase the cycle length at the I-5/Genesee Avenue interchange?

I'm not sure if you are the correct person to contact with these questions. If you aren't able to help me with these questions, could you forward my email to the appropriate person at Caltrans D11 who could answer my questions and provide some input on signal timing at this location?

Thanks,

David Mizell, AICP

RICK ENGINEERING COMPANY
5620 FRIARS ROAD, SAN DIEGO, CA 92110

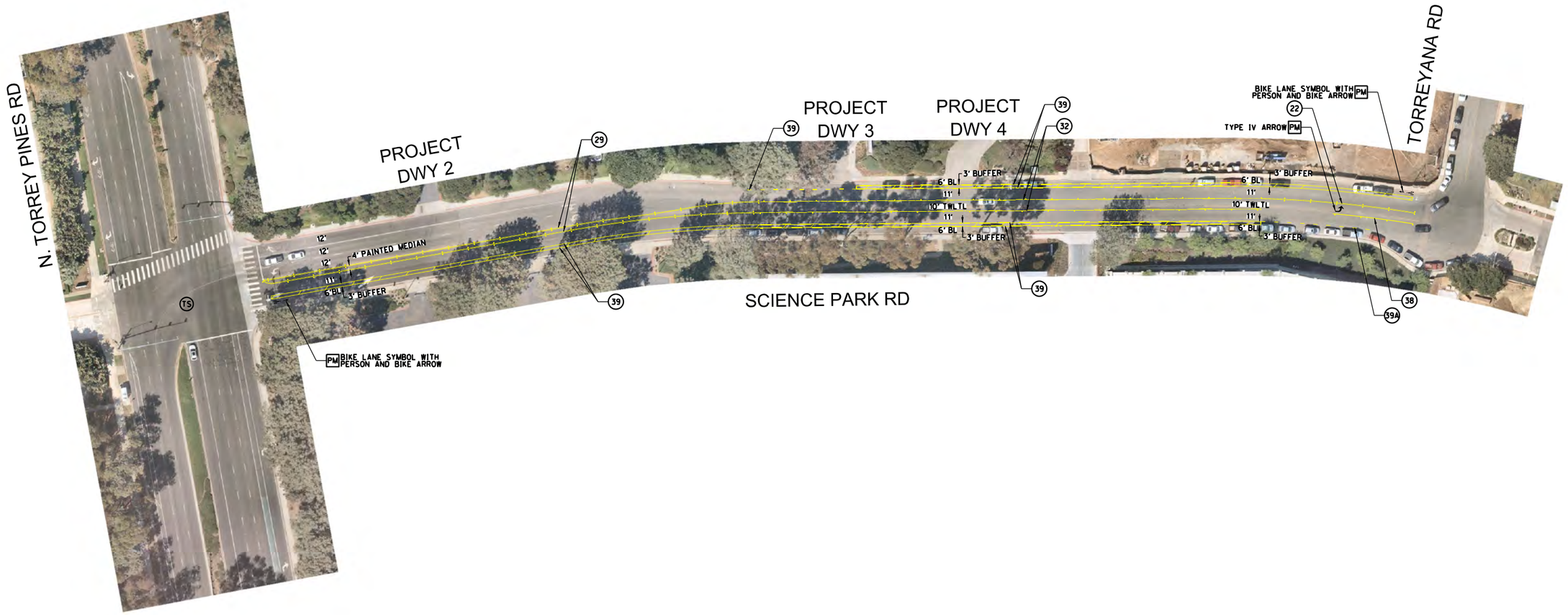
t 619.291.0707 / d 619.908.3503 / c 760.845.4711
dmizell@rickengineering.com / www.rickengineering.com

APPENDIX J

CONCEPTUAL DESIGN PLAN FOR RECOMMENDED SCIENCE PARK ROAD IMPROVEMENTS

LEGEND:

TRAFFIC SIGNAL	TS
STRIPING DETAIL NO.	XX
PAVEMENT MARKINGS:	PM



NOT TO SCALE

RICK ENGINEERING COMPANY

EXHIBIT J-1

CONCEPTUAL PLAN OF RECOMMENDED IMPROVEMENTS ON SCIENCE PARK ROAD

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

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\\cp.rickeng.com\projects\C_SD_T\18483C_One Alexandria Square TIA\Traffic\Graphics\SD CorpStds 2005.dscript

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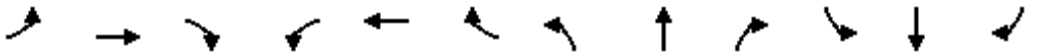
APPENDIX K

INTERSECTION OPERATIONS AND QUEUING ANALYSIS WORKSHEETS WITH SIGNAL TIMING ADJUSTMENTS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	512	195	172	2012	0	0	0	0	1406	1	1588
Future Volume (veh/h)	0	512	195	172	2012	0	0	0	0	1406	1	1588
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	563	214	189	2211	0				1546	0	1745
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91				0.91	0.91	0.91
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2147	791	249	2033	0				1749	0	1556
Arrive On Green	0.00	0.28	0.28	0.14	0.80	0.00				0.49	0.00	0.49
Sat Flow, veh/h	0	7930	2790	3456	5274	0				3563	0	3170
Grp Volume(v), veh/h	0	563	214	189	2211	0				1546	0	1745
Grp Sat Flow(s),veh/h/ln	0	1515	1395	1728	1702	0				1781	0	1585
Q Serve(g_s), s	0.0	6.3	6.5	5.8	43.8	0.0				42.9	0.0	54.0
Cycle Q Clear(g_c), s	0.0	6.3	6.5	5.8	43.8	0.0				42.9	0.0	54.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2147	791	249	2033	0				1749	0	1556
V/C Ratio(X)	0.00	0.26	0.27	0.76	1.09	0.00				0.88	0.00	1.12
Avail Cap(c_a), veh/h	0	2147	791	349	2033	0				1749	0	1556
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.72	0.72	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	30.5	30.6	46.2	11.2	0.0				25.2	0.0	28.0
Incr Delay (d2), s/veh	0.0	0.3	0.8	4.4	46.1	0.0				5.8	0.0	63.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.2	2.2	2.4	12.6	0.0				18.7	0.0	33.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	30.8	31.4	50.6	57.3	0.0				31.0	0.0	91.7
LnGrp LOS	A	C	C	D	F	A				C	A	F
Approach Vol, veh/h		777			2400						3291	
Approach Delay, s/veh		31.0			56.8						63.2	
Approach LOS		C			E						E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	12.6	38.4		59.0		51.0
Change Period (Y+Rc), s	* 4.7	7.2		5.0		7.2
Max Green Setting (Gmax), s	* 11	28.0		54.0		43.8
Max Q Clear Time (g_c+I1), s	7.8	8.5		56.0		45.8
Green Ext Time (p_c), s	0.2	4.1		0.0		0.0

Intersection Summary		
HCM 6th Ctrl Delay		56.9
HCM 6th LOS		E

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

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

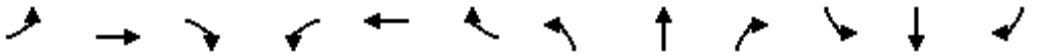
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	219	1653	0	0	720	575	1391	3	985	0	0	0
Future Volume (veh/h)	219	1653	0	0	720	575	1391	3	985	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	238	1797	0	0	783	625	1514	0	1071			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	294	2107	0	0	2191	807	1698	0	1511			
Arrive On Green	0.17	0.83	0.00	0.00	0.29	0.29	0.48	0.00	0.48			
Sat Flow, veh/h	3456	5274	0	0	7930	2790	3563	0	3170			
Grp Volume(v), veh/h	238	1797	0	0	783	625	1514	0	1071			
Grp Sat Flow(s),veh/h/ln	1728	1702	0	0	1515	1395	1781	0	1585			
Q Serve(g_s), s	7.3	22.9	0.0	0.0	9.0	22.6	42.6	0.0	29.4			
Cycle Q Clear(g_c), s	7.3	22.9	0.0	0.0	9.0	22.6	42.6	0.0	29.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	294	2107	0	0	2191	807	1698	0	1511			
V/C Ratio(X)	0.81	0.85	0.00	0.00	0.36	0.77	0.89	0.00	0.71			
Avail Cap(c_a), veh/h	324	2107	0	0	2191	807	1781	0	1585			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.70	0.70	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	44.8	7.6	0.0	0.0	31.0	35.8	26.2	0.0	22.8			
Incr Delay (d2), s/veh	9.6	3.3	0.0	0.0	0.5	7.2	6.0	0.0	1.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.2	3.5	0.0	0.0	3.2	8.0	18.6	0.0	10.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.3	11.0	0.0	0.0	31.4	43.0	32.2	0.0	24.2			
LnGrp LOS	D	B	A	A	C	D	C	A	C			
Approach Vol, veh/h		2035			1408			2585				
Approach Delay, s/veh		16.0			36.6			28.9				
Approach LOS		B			D			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		52.6			13.6	39.0		57.4				
Change Period (Y+Rc), s		7.2			* 4.2	7.2		5.0				
Max Green Setting (Gmax), s		42.8			* 10	28.3		55.0				
Max Q Clear Time (g_c+I1), s		24.9			9.3	24.6		44.6				
Green Ext Time (p_c), s		11.3			0.1	2.4		7.9				

Intersection Summary	
HCM 6th Ctrl Delay	26.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1999	934	388	717	0	0	0	0	386	2	350
Future Volume (veh/h)	0	1999	934	388	717	0	0	0	0	386	2	350
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	2127	994	413	763	0				412	0	372
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	3016	1111	939	3755	0				547	0	487
Arrive On Green	0.00	0.40	0.40	0.54	1.00	0.00				0.15	0.00	0.15
Sat Flow, veh/h	0	7930	2790	3456	5274	0				3563	0	3170
Grp Volume(v), veh/h	0	2127	994	413	763	0				412	0	372
Grp Sat Flow(s),veh/h/ln	0	1515	1395	1728	1702	0				1781	0	1585
Q Serve(g_s), s	0.0	25.8	36.6	7.9	0.0	0.0				12.2	0.0	12.4
Cycle Q Clear(g_c), s	0.0	25.8	36.6	7.9	0.0	0.0				12.2	0.0	12.4
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3016	1111	939	3755	0				547	0	487
V/C Ratio(X)	0.00	0.71	0.89	0.44	0.20	0.00				0.75	0.00	0.76
Avail Cap(c_a), veh/h	0	3016	1111	939	3755	0				842	0	749
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.91	0.91	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	27.7	30.9	20.1	0.0	0.0				44.5	0.0	44.6
Incr Delay (d2), s/veh	0.0	1.4	11.2	0.3	0.1	0.0				2.1	0.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.9	13.0	2.6	0.0	0.0				5.5	0.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	29.1	42.1	20.4	0.1	0.0				46.7	0.0	47.2
LnGrp LOS	A	C	D	C	A	A				D	A	D
Approach Vol, veh/h		3121			1176						784	
Approach Delay, s/veh		33.2			7.2						46.9	
Approach LOS		C			A						D	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	37.1	51.0		21.9		88.1						
Change Period (Y+Rc), s	7.2	* 7.2		5.0		7.2						
Max Green Setting (Gmax), s	23.3	* 44		26.0		71.8						
Max Q Clear Time (g_c+I1), s	9.9	38.6		14.4		2.0						
Green Ext Time (p_c), s	1.2	4.9		2.5		5.4						

Intersection Summary		
HCM 6th Ctrl Delay		29.3
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

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

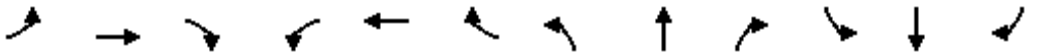
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1365	1026	0	0	789	1410	313	3	184	0	0	0
Future Volume (veh/h)	1365	1026	0	0	789	1410	313	3	184	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	1452	1091	0	0	839	1500	335	0	196			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	1659	4819	0	0	3016	1111	324	0	288			
Arrive On Green	0.80	1.00	0.00	0.00	0.40	0.40	0.09	0.00	0.09			
Sat Flow, veh/h	3456	5274	0	0	7930	2790	3563	0	3170			
Grp Volume(v), veh/h	1452	1091	0	0	839	1500	335	0	196			
Grp Sat Flow(s),veh/h/ln	1728	1702	0	0	1515	1395	1781	0	1585			
Q Serve(g_s), s	30.7	0.0	0.0	0.0	8.2	43.8	10.0	0.0	6.6			
Cycle Q Clear(g_c), s	30.7	0.0	0.0	0.0	8.2	43.8	10.0	0.0	6.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1659	4819	0	0	3016	1111	324	0	288			
V/C Ratio(X)	0.87	0.23	0.00	0.00	0.28	1.35	1.03	0.00	0.68			
Avail Cap(c_a), veh/h	1659	4819	0	0	3016	1111	324	0	288			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.74	0.74	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	8.7	0.0	0.0	0.0	22.4	33.1	50.0	0.0	48.5			
Incr Delay (d2), s/veh	4.2	0.1	0.0	0.0	0.2	163.7	59.2	0.0	6.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.9	0.0	0.0	0.0	2.8	38.7	7.1	0.0	2.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.9	0.1	0.0	0.0	22.6	196.8	109.2	0.0	54.8			
LnGrp LOS	B	A	A	A	C	F	F	A	D			
Approach Vol, veh/h		2543			2339			531				
Approach Delay, s/veh		7.4			134.3			89.1				
Approach LOS		A			F			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		111.0			60.0	51.0		15.0				
Change Period (Y+Rc), s		7.2			7.2	* 7.2		5.0				
Max Green Setting (Gmax), s		87.8			39.8	* 44		10.0				
Max Q Clear Time (g_c+I1), s		2.0			32.7	45.8		12.0				
Green Ext Time (p_c), s		8.7			3.6	0.0		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	70.3
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

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



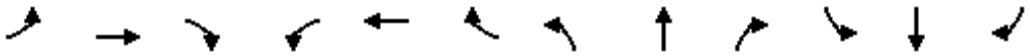
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	512	195	172	2012	0	0	0	0	1406	1	1588
Future Volume (vph)	0	512	195	172	2012	0	0	0	0	1406	1	1588
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285		435	0		0	0		0	0		0
Storage Lanes	0		2	2		0	0		0	1		2
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		589			593			1956			1804	
Travel Time (s)		8.0			8.1			44.5			41.0	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	563	214	189	2211	0	0	0	0	772	774	1745
v/c Ratio		0.29	0.24	0.59	1.09					0.94	0.94	1.24
Control Delay		33.1	5.1	89.0	80.3					46.6	46.6	138.9
Queue Delay		0.0	0.0	0.0	1.9					0.0	0.0	0.0
Total Delay		33.1	5.1	89.0	82.1					46.6	46.6	138.9
Queue Length 50th (ft)		79	0	74	~608					522	523	~855
Queue Length 95th (ft)		101	31	111	#644					#802	#804	#1007
Internal Link Dist (ft)		509			513			1876			1724	
Turn Bay Length (ft)			435									
Base Capacity (vph)		1973	886	346	2024					825	827	1412
Starvation Cap Reductn		0	0	0	8					0	0	0
Spillback Cap Reductn		193	0	0	0					0	0	0
Storage Cap Reductn		0	0	0	0					0	0	0
Reduced v/c Ratio		0.32	0.24	0.55	1.10					0.94	0.94	1.24

Intersection Summary

Area Type: Other

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

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	1653	0	0	720	575	1391	3	985	0	0	0
Future Volume (vph)	219	1653	0	0	720	575	1391	3	985	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		400	0		0	0		0
Storage Lanes	2		0	0		2	1		2	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		593			919			1868			1869	
Travel Time (s)		8.1			12.5			42.5			42.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	238	1797	0	0	783	625	756	759	1071	0	0	0
v/c Ratio	0.75	0.91			0.40	0.53	0.90	0.90	0.75			
Control Delay	100.0	42.9			34.5	4.4	40.7	40.7	24.1			
Queue Delay	0.0	0.1			0.3	0.0	0.0	0.0	0.0			
Total Delay	100.0	42.9			34.8	4.4	40.7	40.7	24.1			
Queue Length 50th (ft)	92	494			113	0	492	494	307			
Queue Length 95th (ft)	#140	m535			139	47	#765	#766	400			
Internal Link Dist (ft)		513			839			1788			1789	
Turn Bay Length (ft)						400						
Base Capacity (vph)	321	1978			1950	1184	840	843	1435			
Starvation Cap Reductn	0	6			0	0	0	0	0			
Spillback Cap Reductn	0	0			505	0	0	0	0			
Storage Cap Reductn	0	0			0	0	0	0	0			
Reduced v/c Ratio	0.74	0.91			0.54	0.53	0.90	0.90	0.75			

Intersection Summary

Area Type: Other

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

m Volume for 95th percentile queue is metered by upstream signal.

Intersection: 8: I-5 SB Ramps & Genesee Avenue

Movement	EB	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB
Directions Served	T	T	T	T	T	R	R	L	L	T	T	T
Maximum Queue (ft)	282	318	118	133	124	62	77	196	164	103	82	102
Average Queue (ft)	202	213	78	82	60	41	41	122	99	53	43	56
95th Queue (ft)	301	323	125	128	118	59	73	220	195	108	92	114
Link Distance (ft)	521	521	521	521	521			502	502	502	502	502
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)						435	435					
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 8: I-5 SB Ramps & Genesee Avenue

Movement	SB	SB	SB	SB
Directions Served	L	LT	R	R
Maximum Queue (ft)	293	329	72	88
Average Queue (ft)	154	187	47	43
95th Queue (ft)	342	365	80	82
Link Distance (ft)		1631	1631	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	810			810
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: I-5 NB Ramps & Genesee Avenue

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	T	T	T	T	T	R	R
Maximum Queue (ft)	345	516	29	28	53	126	125	141	140	70	411	367
Average Queue (ft)	261	306	28	6	25	80	34	102	65	35	335	316
95th Queue (ft)	377	518	30	24	62	145	112	137	137	79	406	363
Link Distance (ft)	502	502	502	502	502	871	871	871	871	871		
Upstream Blk Time (%)		0										
Queuing Penalty (veh)		2										
Storage Bay Dist (ft)											400	400
Storage Blk Time (%)											0	
Queuing Penalty (veh)											1	

Intersection: 9: I-5 NB Ramps & Genesee Avenue

Movement	NB	NB	NB	NB
Directions Served	L	LT	R	R
Maximum Queue (ft)	292	326	107	20
Average Queue (ft)	219	302	53	12
95th Queue (ft)	342	336	99	28
Link Distance (ft)		1384	1384	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	840			750
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 2

Intersection: 4: Science Park Road/Merryfield Row & Torreyana Road

Movement	EB	EB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (ft)	56	79	31	51
Average Queue (ft)	45	58	25	34
95th Queue (ft)	65	86	45	48
Link Distance (ft)		421	782	649
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	75			
Storage Blk Time (%)	0	1		
Queuing Penalty (veh)	0	1		

Intersection: 4: Science Park Road/Merryfield Row & Torreyana Road

Movement	EB	EB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (ft)	55	31	153	53
Average Queue (ft)	40	25	83	34
95th Queue (ft)	58	45	143	50
Link Distance (ft)		404	782	650
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	75			
Storage Blk Time (%)				
Queuing Penalty (veh)				