

ONE ALEXANDRIA NORTH (PTS# 691942)

LOCAL MOBILITY ANALYSIS (LMA)

CITY OF SAN DIEGO, CA

JANUARY 25, 2022

JOB NUMBER: 19366-AT

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PTS# 691942
CITY OF SAN DIEGO, CA**

JANUARY 25, 2022

**PREPARED FOR:
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EXECUTIVE SUMMARY

The One Alexandria North project (the project) was required to prepare a Local Mobility Analysis (LMA) transportation document per the City of San Diego Transportation Study Manual (TSM), dated September 29, 2020. The LMA has been prepared to evaluate the project traffic effect on the project study area intersections and roadways and the VMT assessment memo (separate report) addresses potential significant impact under the California Environmental Quality Act (CEQA) and the City's TSM. The project is in a 11.4 acres site at 11255-11355 N. Torrey Pines Road, in the University Community Plan area in the City of San Diego.

The project proposes to demolish two existing buildings currently occupied by National University Corporate Headquarters Office totaling 133,660 square feet and a stand-alone amenity building and construct two new research and development buildings with two buildings of 13,824 sf of amenity spaces totaling 256,500 square feet. All parking will be provided onsite. The project will construct a parking structure that will provide a total of 570 standard parking stalls and 16 ADA accessible stalls provided on-site. The project will also provide long-term bicycle parking and short-term bicycle racks on-site, as well as motorcycle parking stalls within the parking structure. The project is expected to generate a net of approximately 715 Average Daily Traffic (ADT) with 127 (115 inbound and 12 outbound) AM peak hour trips and 86 (8 inbound and 78 outbound) PM peak hour trips. The project opening year is assumed to be in 2023 with no phasing of development.

The project requires discretionary actions required by the project consist of a Coastal Development Permit (CDP), Site Development Permit (SDP), Neighborhood Development Permit (NDP) and Tentative Parcel Map (TM) to allow for development of a two building Research and Development campus with supporting amenity uses, and a parking structure. No rezoning or Community Plan Amendments are required or proposed.

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

Intersection Operations and Roadway Segment Analysis

The LMA analyzed the nearby intersections and roadways with and without the project generated traffic at the expected Opening Year 2023. Per the results of the analysis of the proposed project, all the study area intersections and roadway segments would be expected to continue to operate at LOS D or better with the exception of the following intersections:

- Intersection #6: Genesee Avenue/I-5 SB Ramps (LOS E during the AM peak hour for both without and with project scenarios).
- Intersection #7: Genesee Avenue/I-5 NB Ramps (LOS F during the PM peak hour for both without and with project scenarios).

A review of the signal timing at these intersections revealed that the existing 100 second cycle length is not long enough to adequately serve all movements at the intersections during the peak hours. Per coordination with Caltrans, signal timing updates up to 110 second cycle length may be acceptable to help reduce delays, however, as shown in Table 7, the increase in cycle length only reduced the delays slightly and the intersections still operate at LOS E and LOS F. In addition, the increase in cycle length showed that queue lengths at the northbound I-5 off-ramp movement increased, as demonstrated in Table 9 in Section 7.

Therefore, improvements are not recommended at the two ramp intersections for the Genesee Avenue / I-5 interchange.

Table ES-1 summarizes the intersection operations and **Table ES-2** summarizes the roadway segment operations results for each scenario analyzed in this report.

Queuing Analysis

The results of the queuing analysis for Opening Year 2023 without and with project scenarios showed that the 95th percentile queue length are expected to exceed the available storage lengths at the intersection of Genesee Avenue/ I-5 Northbound Ramps. However, extending the eastbound and northbound turn pockets are not feasible due to the physical constraints of the off-ramp lengths as well as the distance between the two ramps and no signal timing adjustments could be recommended.

Pedestrian Network

Evaluation of the pedestrian network showed that near the project site, six-foot wide contiguous sidewalk is provided along the project frontage on the northbound direction of N. Torrey Pines Road for approximately 430 feet north of N.U. System Driveway except for a portion of six-foot non-contiguous sidewalk proposed between N.U. System Driveway and the southern project driveway. An eight-foot-wide non-contiguous sidewalk is provided in the southbound direction along N. Torrey Pines Road. Pedestrian crossings are currently striped with high visibility continental crosswalks along the southbound and westbound approaches as well as upgraded pedestrian ramps and pedestrian signal heads at main project entrance N. Torrey Pines Road/N.U. System Dwy intersection. Within the project site, continuous pedestrian connections will be provided between the proposed new buildings, the main parking structure area and to the existing bus stops.

Bicycle Network

Evaluation of the bicycle network showed that near the project site along N. Torrey Pines Road there are currently Class II bike lanes that are provided in both directions of travel consistent with University Community plan and City of San Diego Bicycle Master plan. The northbound Class II bike lane on N. Torrey Pines Road ranges between 6 and 8 feet in width through the study area and a four-foot wide buffer adjacent the bike lane is provided approximately 300 feet south of N. Torrey Pines Road/Torrey Pines Science Park Road intersection. The southbound Class II bike lane ranges between 5 and 6 feet in width and no buffer is provided.

Transit Network

Transit bus stops along roadways within quarter of a mile walking distance of the project site, and any major transit facilities (i.e. transit stations) within half a mile walking distance of the project site were evaluated. The North County Transit District (NCTD) and San Diego Metropolitan Transit System (MTS) provides bus and service in the vicinity of the project site.

Per the NCTD and MTS 'Rider's Guide' information, NCTD Route 101 directly serves the project site with two Northbound and two southbound bus stops provided along N. Torrey Pines Road between the project site and Torrey Pines Science Park.

Amenities such as a shelter, bench and trash receptable are not provided at the transit stops within walking distance of the project site. However, as stated in the separate VMT assessment memo for this project, the following VMT reducing measures will be provided by the project:

- The project will coordinate with NCTD to provide a bus shelter, a bench and a trash receptacle to the bus stop located approximately 65 feet north of N.U. System Dwy adjacent the project site.

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's TSM. 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

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.

The results of the Systemic Safety Review for Pedestrian Hotspots showed that none of the study intersections meet the three specific criteria for both Pedestrian Hotspot Scenarios #1, #2 and #3.

The results of the Systemic Safety Review for Bicycle Hotspots showed that, the following study intersection meets the two specific criteria for Bicycle Hotspot Scenario #2:

- Intersection #4 – N. Torrey Pines Road NB Connector /Callan Road (unsignalized)

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 no study intersections meet the criteria for Vehicle Hotspot Scenario #1, 2, 3 or 4. Therefore, no improvements are recommended.

Project Improvements

To facilitate access to/from the project site, the project proposes four access points via one forty five-foot wide existing signalized entry way, two thirty-foot wide existing right-in/right-out only driveways and a new thirty-foot wide right-in/right-out only driveway all along N. Torrey Pines Road. The project proposes to reconstruct the three existing project driveways to current standards per City of San Diego Standard Drawings. The reconstructed existing northernmost driveway is proposed as emergency access only driveway to provide a fire access loop at N. Torrey Pines Road on the northern parcel. The main signalized project driveway at N. Torrey Pines Road and N.U. System Dwy intersection will remain as full access and the remainder three driveways will operate as right-in/right-out only access.

Following City Standards and CA MUTCD, new stop signs with a right-only signage and striping will be installed for the two unsignalized re-constructed driveways and the new project access driveway just north of the N.U. System Dwy signalized intersection. Removeable/retractable bollards or a gate and signage indicating emergency access only will be installed for the northernmost driveway. In addition, internal striping, and

signage at the designated drop off area adjacent Building “B4” will be added to guide vehicles to make u-turns to exit towards the newly built project access driveway just south of the emergency access driveway. Marked accessible paths will also be provided for the 16 designated accessible parking stalls. A total of 570 standard parking stalls with 46 electric vehicle capable parking spaces will be provided. The project will also include 36 long-term bicycle parking and 36 short-term bicycle racks on-site, as well as 11 motorcycle parking stalls.

**TABLE ES-1
INTERSECTION OPERATIONS SUMMARY**

#	INTERSECTION	CONTROL	DIR.	EXISTING				OPENING YEAR (2023) WITHOUT PROJECT				OPENING YEAR (2023) WITH PROJECT			
				AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
				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/N.U. System Dwy	(S)	Overall	6.2	A	10.9	B	5.2	A	10.5	B	6.5	A	13.4	B
2	N. Torrey Pines Road/Torrey Pines Science Park	(S)	Overall	3.5	A	5.3	A	3.5	A	4.7	A	3.5	A	4.7	A
3	N. Torrey Pines Road SB Connector/Callan Road	(OWSC)	WB-L	7.3	A	8.1	A	7.4	A	8.9	A	7.4	A	8.9	A
			SB-L	10.3	B	14	B	11.8	B	30.1	D	11.8	B	30.3	D
4	N. Torrey Pines Road NB Connector/Callan Road	(OWSC)	EB-TL	7.3	A	7.9	A	7.4	A	8.6	A	7.4	A	8.6	A
			SB-LR	8.8	A	9.8	A	9.0	A	11.3	B	9.0	A	11.3	B
5	N. Torrey Pines Road/ Science Park Road	(S)	Overall	20	C	21.8	C	27.4	C	23.8	C	27.1	C	20.2	C
6	Genesee Avenue/ I-5 SB Ramps	(S)	Overall	34.6	C	19.7	B	58.6	E	20.1	C	63.1	E	19.4	B
7	Genesee Avenue/ I-5 NB Ramps	(S)	Overall	23.9	C	83.1	F	26.9	C	97.9	F	27.3	C	99.7	F
8	N. Torrey Pines Road/North Project Dwy	(OWSC)	WB-R	0	A	0	A	0.0	A	0.0	A	10.2	B	11.6	B
9	N. Torrey Pines Road/South Project Dwy	(OWSC)	WB-R	0	A	0	A	0.0	A	0.0	A	12.3	B	12.6	B

Footnotes:

Results calculated utilizing the methodologies described in Chapters 19, 20, 21, and 22 in the 6th edition of the HCM

¹ Delay is measured in seconds per vehicle. ² Level of Service

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

NB=Northbound, WB=Westbound, etc. L=Left-turn movement, T=Thru movement, R= Right-turn movement, etc.

LT=Left-Through lane, LTR=Left-Through-Right lane, etc.

**TABLE ES-2
ROADWAY SEGMENT OPERATIONS SUMMARY**

#	ROADWAY SEGMENT	FUNCTIONAL CLASSIFICATION	CAPACITY (LOS E) ¹	EXISTING			NO PROJECT (2023)			PLUS PROJECT (2023)		
				ADT	V/C	LOS	ADT	V/C	LOS	ADT	V/C	LOS
1	N. Torrey Pines Road between N.U. System Dwy and North Project Dwy	Major Arterial (4-lane, divided)	40,000	10,723	0.27	A	12,127	0.30	A	12,270	0.31	A
2	N. Torrey Pines Road between N.U. System Dwy and Callan Road	Major Arterial (5-lane, divided)	45,000	11,615	0.26	A	13,019	0.29	A	13,591	0.30	A
3	N. Torrey Pines Road between Callan Road and Science Park Road	Primary Arterial (6-lane, divided)	60,000	15,387	0.26	A	18,250	0.30	A	18,815	0.31	A

¹ Source: City of San Diego Transportation Study Manual (September 29, 2020)

1.0- BACKGROUND INFORMATION

1.1- INTRODUCTION

The One Alexandria North project (the project) was required to prepare a Local Mobility Analysis (LMA) transportation document per the City of San Diego Transportation Study Manual (TSM), dated September 29, 2020. The LMA has been prepared to evaluate potential operational deficiencies and transportation improvements that may need to be considered in association with the traffic generated by the proposed One Alexandria North project. The project is in a 11.4 acres site at 11255-11355 N. Torrey Pines Road, in the University Community Plan area in the City of San Diego.

Discretionary actions required by the project consist of a Coastal Development Permit (CDP), Site Development Permit (SDP), Neighborhood Development Permit (NDP) and Tentative Parcel Map (TM) to allow for development of a two building Research and Development campus with supporting amenity uses, and a parking structure. No rezoning or Community Plan Amendments are required or proposed.

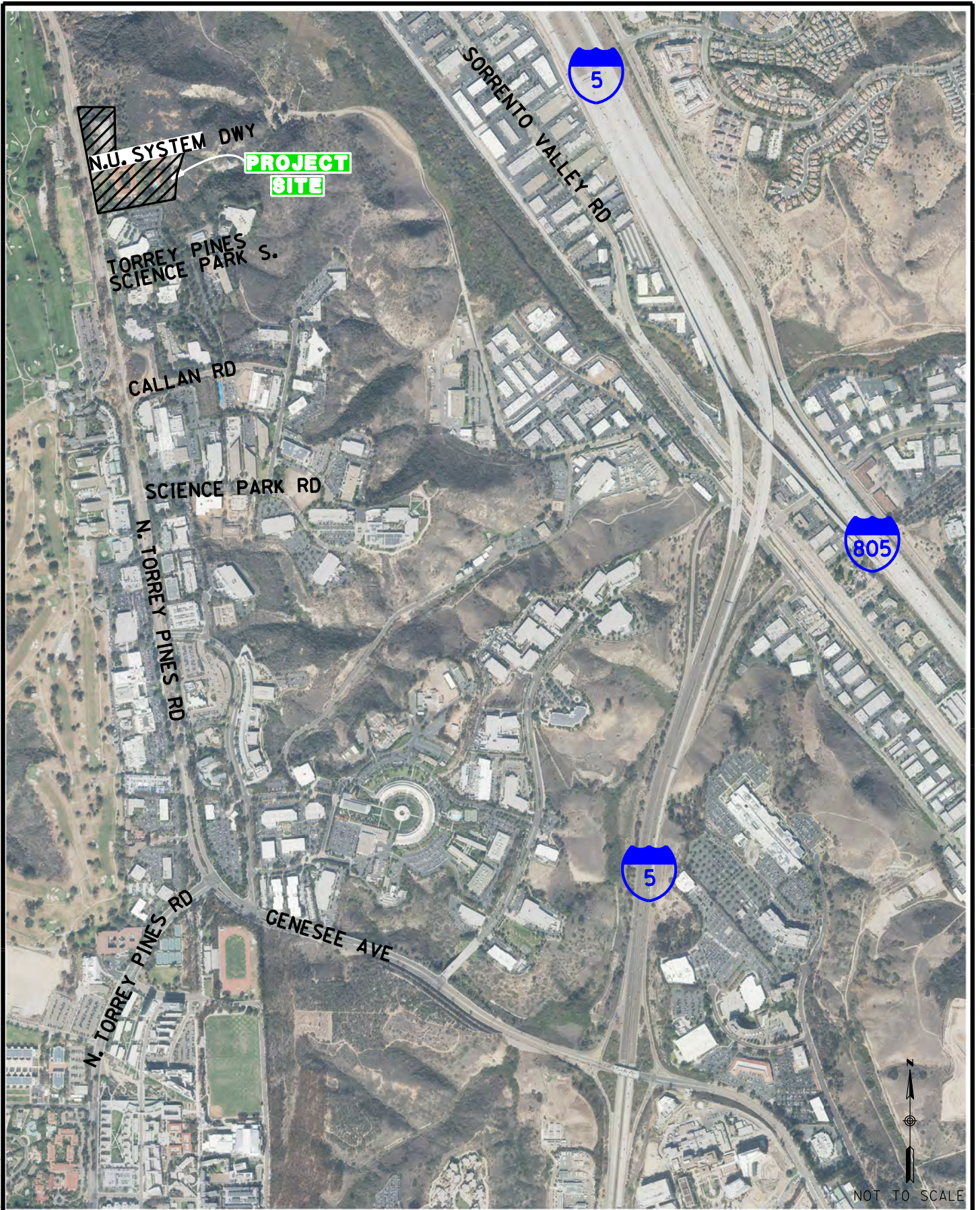
Exhibit 1 shows the project vicinity map.

1.2- PROJECT DESCRIPTION

The project proposes to demolish two existing buildings currently occupied by National University Corporate Headquarters Office totaling 133,660 square feet and a stand-alone amenity building and construct two new research and development buildings with two buildings of 13,824 sf of amenity spaces totaling 256,500 square feet. All parking will be provided onsite. The project will construct a parking structure that will provide 502 standard parking stalls and 11 ADA accessible stalls, with additional 52 standard parking stalls and 5 ADA accessible stalls within the two new research and development buildings for a total of 570 standard parking stalls and 16 ADA accessible stalls provided on-site. Out of the total 570 standard parking stalls, 46 designated clean air vehicle parking/carpool stalls will be provided. The project will also provide 36 long-term bicycle parking and 36 short-term bicycle racks on-site, as well as 11 motorcycle parking stalls.

The project proposes four access points via one forty five-foot wide existing signalized entry way, two thirty-foot wide existing right-in/right-out only driveways and a new thirty-foot wide right-in/right-out only driveway all along N. Torrey Pines Road. The project proposes to reconstruct the three existing project driveways to current standards per City of San Diego Standard Drawings. The reconstructed existing northernmost driveway is proposed as emergency access only driveway to provide a fire access loop at N. Torrey Pines Road on the northern parcel. The main signalized project driveway at N. Torrey Pines Road and N.U. System Dwy intersection will remain as full access and the remainder three driveways will operate as right-in/right-out only access. Currently, the two existing right-in/right out driveways are gated, and no vehicles were observed accessing the driveways during traffic count collection. The Project opening year is assumed to be in 2023 with no phasing of development.

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



N.U. SYSTEM DWY

PROJECT SITE

TORREY PINES SCIENCE PARK S.

CALLAN RD

SCIENCE PARK RD

N. TORREY PINES RD

N. TORREY PINES RD

GENESEE AVE

SORRENTO VALLEY RD



NOT TO SCALE



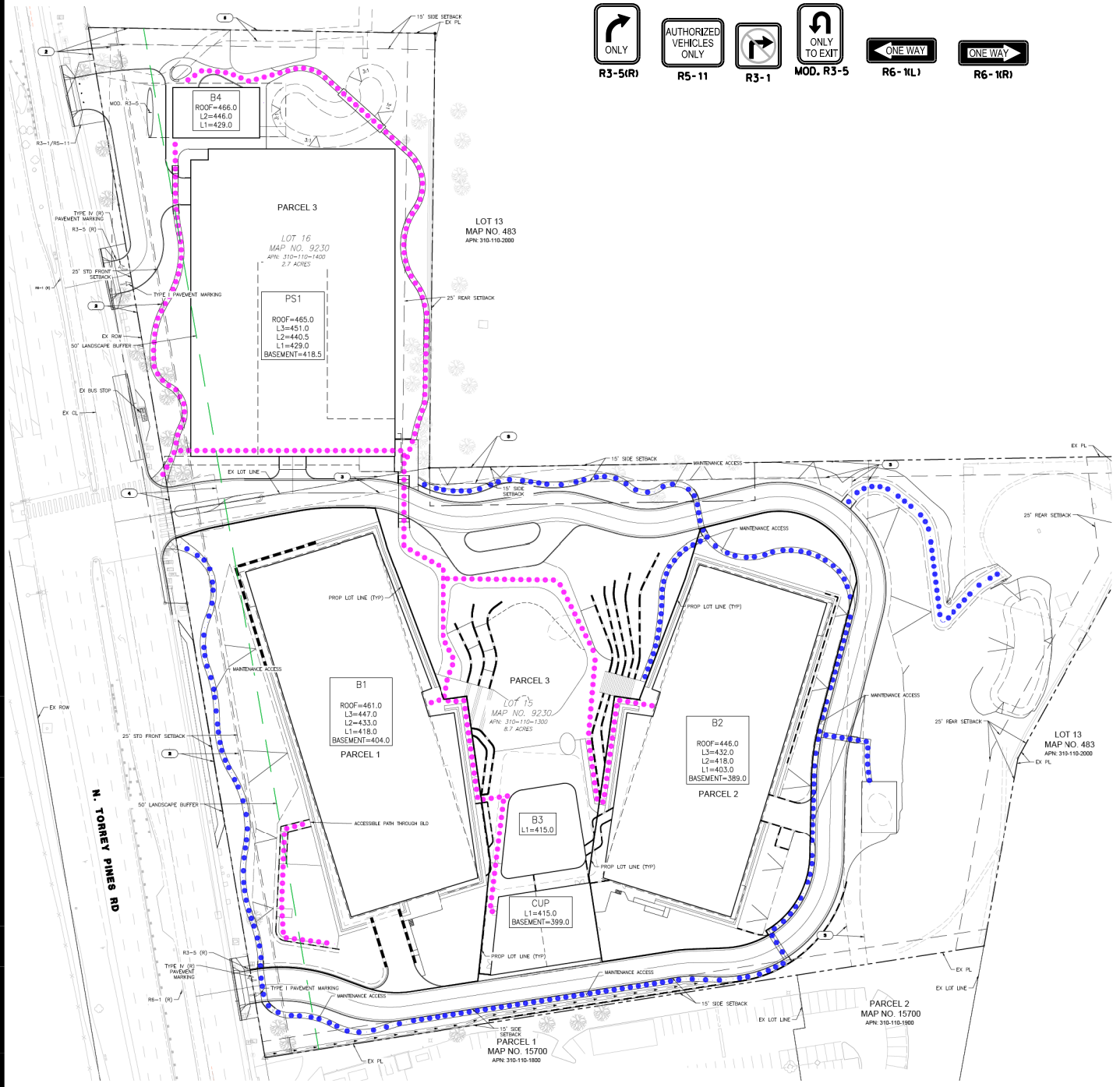
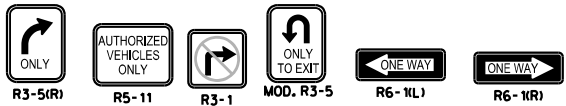
EXHIBIT 1
VICINITY MAP
ONE ALEXANDRIA NORTH

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designated for scientific research use. Therefore, the proposed project is consistent with the land use designation for the site per the *University Community Plan*.

Regional access to the site is provided by the I-5 Freeway, I-805 Freeway and SR-56 Highway, and local access to the site is provided via N. Torrey Pines Road and Genesee Avenue.

Exhibit 2 shows the proposed project site plan.



NOT TO SCALE

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EXHIBIT 2
PROPOSED PROJECT SITE PLAN
ONE ALEXANDRIA NORTH

2.0- ANALYSIS APPROACH AND METHODOLOGY

2.1- ANALYSIS APPROACH

The LMA was prepared based on the *City of San Diego's Transportation Study Manual (TSM)*, dated September 29, 2020, and approved by City Council on November 09, 2020.

Appendix A contains the project information form (PIF) and Climate Action Plan (CAP) Consistency checklist.

The intersections and roadways within the project were analyzed for the following scenarios:

- Existing (2021) Conditions
- Opening Year (2023) without Project Conditions
- Opening Year (2023) with Project Conditions

2.2- TRAFFIC ANALYSIS METHODOLOGY

Intersection Analysis Methodology

The Level of Service (LOS) for signalized intersections was calculated 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 HCM 6 methodologies for signalized and stop controlled intersections and was utilized to produce the analysis results.

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.

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 TSM. 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.

**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 City's TSM, pedestrian analysis should primarily focus on pedestrian connectivity, walkshed analysis, presence of adequate facilities, etc.

Bicycle Analysis Methodology

As required per City's TSM, 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 University Community Plan.
- On-site bike parking supply as well as bikeshare bicycles that may be parked/stored on public sidewalks.

Transit Analysis Methodology

As required per City's TSM, 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 most recent (2021) SANDAG Regional Transportation Improvement Program (RTIP) and/or the most recent (2019) Federal Regional Transportation Plan (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 TSM, the following criteria should be considered for identifying off-site improvements for each transportation mode:

Pedestrian Facilities

- 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 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 half a 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 half a 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 half a 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 half a 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 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 half a 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 half a 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.

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.

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.

3.0- LOCAL MOBILITY ANALYSIS STUDY AREA

The City's TSM requires that the project study area for the Local Mobility Analysis includes the following:

- All signalized and unsignalized intersections located within half 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 half mile of the project site.
- Bicycle facilities located within half mile of the project site.
- Transit facilities located within half mile of the project site.

Exhibit 3 illustrates the study area intersections, study roadway segments and the existing public transportation locations within the project area.

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

Study intersections:

1. N. Torrey Pines Road/ N.U. System Dwy – Project Dwy (signalized)
2. N. Torrey Pines Road/ Torrey Pines Science Park (signalized)
3. N. Torrey Pines Road SB Connector/ Callan Road (unsignalized)
4. N. Torrey Pines Road NB Connector /Callan Road (unsignalized)
5. N. Torrey Pines Road/ Science Park Road (signalized)
6. Genesee Avenue/ I-5 SB Ramps (signalized)
7. Genesee Avenue/ I-5 NB Ramps (signalized)
8. N. Torrey Pines Road/North Project Dwy (unsignalized)
9. N. Torrey Pines Road/South Project Dwy (unsignalized)

Although the following study roadway segments listed are built to the University Community Plan ultimate classification, they are included in this LMA, as they are located along the project site frontage.

Study roadway segments:

1. N. Torrey Pines Road north of N.U. System Dwy
2. N. Torrey Pines Road between N.U. System Dwy and Callan Road
3. N. Torrey Pines Road between Callan Road and Science Park Road

Study pedestrian facilities:

Evaluation of all pedestrian facilities along roadways with direct connectivity to the project site and are located within half a 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 located within half a mile distance of the project site.

Study transit facilities:

Evaluation of all transit bus stops along roadways located within quarter of a mile walking distance of the project site, and any major transit facilities (i.e. transit stations) located within half a mile walking distance of the project site.

4.0 EXISTING MOBILITY

4.1- EXISTING ROADWAY NETWORK

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

North Torrey Pines Road is classified as a six-lane Primary Arterial between Genesee Road and Callan Road, and is classified as a five-lane Major Street north of Callan Road in the University Community Plan. Although the existing functional classification north of N.U. System Driveway is a four-lane Major arterial, the Community Plan states that no further improvements are required north of the Callan Road bridge. Therefore, 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. Six-foot wide contiguous sidewalk is provided along the project frontage for approximately 430 feet north of N.U. System Driveway and eight-foot-wide non-contiguous sidewalk is provided in the southbound direction. On-street parking along North Torrey Pines Road is not permitted. The posted speed limit near the project site on North Torrey Pines Road is 45 miles per hour northbound and 50 miles per hour southbound.

Genesee Avenue is classified as a six-lane Primary Arterial between N. Torrey Pines Road and Regents Road. Genesee Avenue is built to its ultimate classification within the project study area. Class II bikes lanes are provided in both directions of travel with five-foot wide contiguous sidewalks along the northside of street. On-street parking is not permitted. The posted speed limit is 50 miles per hour.

4.2- EXISTING PEDESTRIAN NETWORK

Near the project site, six-foot wide contiguous sidewalk is provided along the project frontage on the northbound direction of N. Torrey Pines Road for approximately 430 feet north of N.U. System Driveway and an eight-foot-wide non-contiguous sidewalk is provided in the southbound direction along N. Torrey Pines Road. Five-foot wide contiguous sidewalks are also provided in both directions of travel along Callan Road and Science Park Road. Pedestrian crossings currently striped with high visibility continental crosswalks are provided along the southbound and westbound approaches as well as upgraded pedestrian ramps and pedestrian signal heads at N. Torrey Pines Road/N.U. System Dwy intersection. Pedestrian crossings, pedestrian ramps and pedestrian signal heads are provided along the southbound and westbound approaches of N. Torrey Pines Road/Torrey Pines Science Park S. intersection.

4.3- EXISTING BICYCLE NETWORK

N. Torrey Pines Road currently has Class II bike lanes that are provided in both directions of travel. The northbound Class II bike lane on N. Torrey Pines Road ranges between 6 and 8 feet in width through the study area and a 4 foot wide buffer adjacent the bike lane is provided approximately 300 feet south of N. Torrey Pines Road/Torrey Pines Science Park Road intersection. The southbound Class II bike lane, south of N.U. System Dwy, ranges between 5 and 6 feet in width and no buffer is provided. North of N.U. System Dwy, the southbound Class II bike facility includes two separate 5 foot wide lanes and 7 foot wide buffer that extends to Los Penasquitos Creek Bridge. There is a 250 feet long section on northbound N. 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 N. 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.

Exhibit 3 illustrates the existing transportation conditions within the project area as described above.

4.4- EXISTING TRANSIT NETWORK

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

- **NCTD Route 101:** Extends between the UTC Transit Center and the Oceanside Transit Center via N. Torrey Pines Road and Coast Highway 101. Service is provided seven days per week between 5:00am and 11:00pm, 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 (6:30am – 8:37am) with 40-minute headway and afternoon/evening (4:10pm – 6:37pm) with 60-minute headway.
- **MTS Route 985:** Extends between UCSD Central Campus Station and the study area via North Torrey Pines Road and circulates around the project site via Torreyana Road (northbound) and Callan Road (westbound). Service is provided Monday through Friday during the morning (6:27am – 9:12am) and afternoon/evening (2:59pm – 6:17pm) both with 15-minute headways.

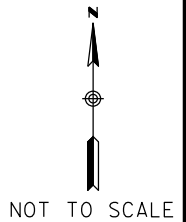
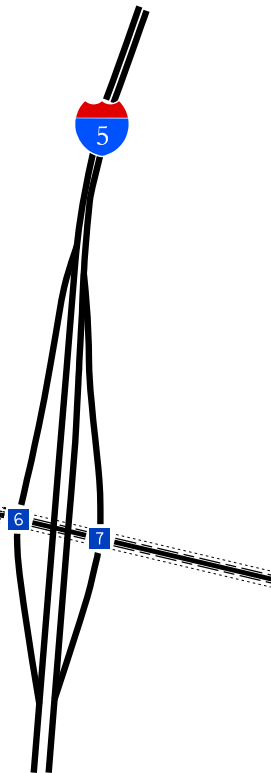
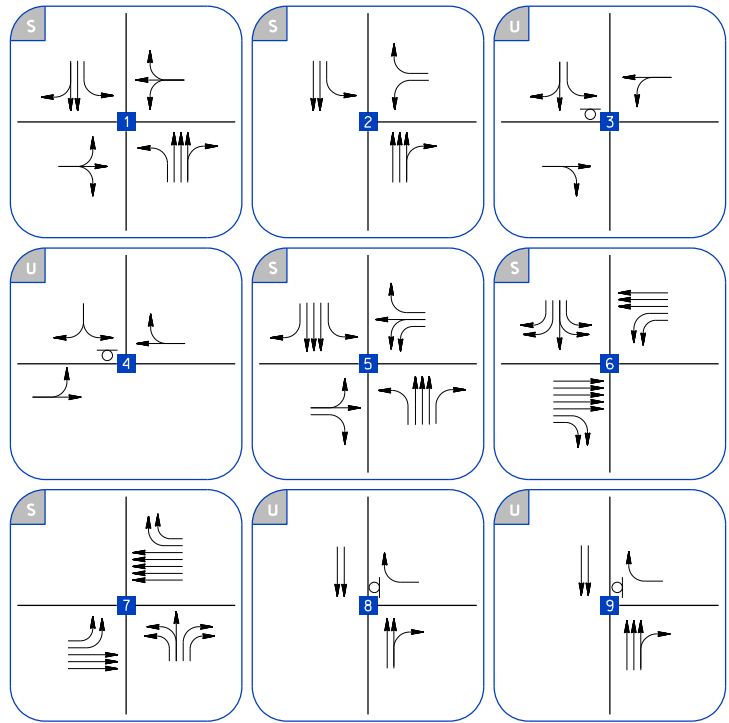
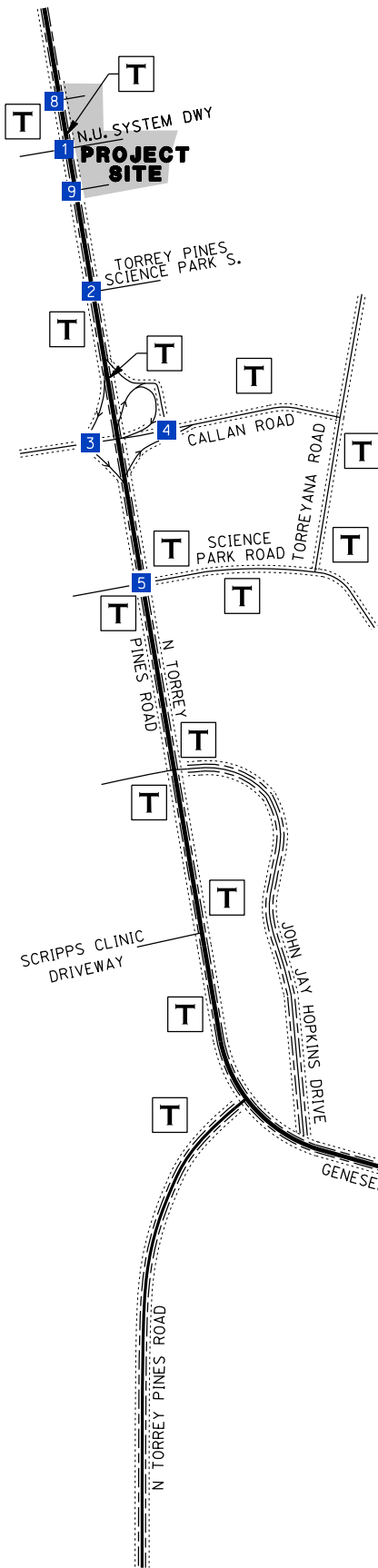
The following transit bus stops are currently provided within a quarter mile walking distance of the project site:

NCTD Route 101

- Northbound N. Torrey Pines Road at N.U. System Dwy (located approximately 65 feet north of N.U. System Dwy on project frontage). No shelter or amenities provided.
- Southbound N. Torrey Pines Road at N.U. System Dwy (located approximately 20 feet north of N.U. System Dwy). No shelter or amenities provided.
- Northbound N. Torrey Pines Road at Torrey Pines Science Park (located approximately 75 feet north of Torrey Pines Science Park). No shelter or amenities provided.
- Southbound N. Torrey Pines Road at Torrey Pines Science Park (located approximately 220 feet south of Torrey Pines Science Park). No shelter or amenities provided.

Exhibit 4 illustrates the existing transit network and walking distances from the project site to the nearby bus stops within the project area as described above.

Appendix B contains NCTD and MTS ridership maps and information.



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EXHIBIT 3
EXISTING CONDITIONS

ONE ALEXANDRIA NORTH

LEGEND

- X = INTERSECTION NUMBER
- S = SIGNALIZED
- U = UNSIGNALIZED
- X = STOP CONTROL

- T = BUS STOP
- = EX. SIDEWALK
- = EX. BIKE LANES

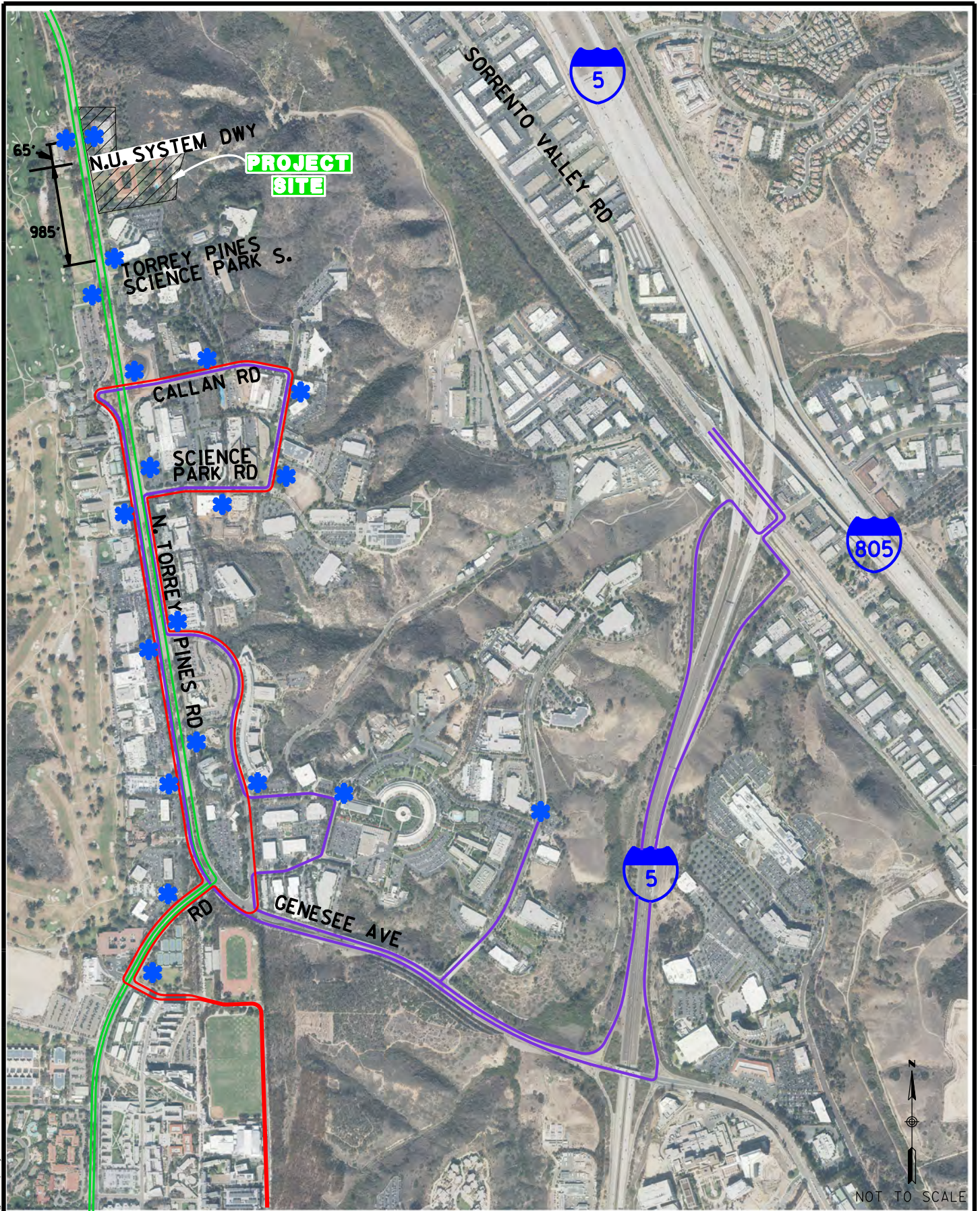


EXHIBIT 4
 EXISTING TRANSIT ROUTES
 ONE ALEXANDRIA NORTH

LEGEND

- ROUTE 101
- ROUTE 978
- ROUTE 985
- ★ BUS STOP
- xxx'** DISTANCE FROM PROJECT TO NEAREST BUS STOP

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4.5- EXISTING TRAFFIC VOLUMES

Existing vehicular, pedestrian and bicycle traffic data at the study intersections and roadway segments listed below was obtained from traffic counts conducted by Veracity Traffic Group on Tuesday, April 6, 2021. The turning movement counts were conducted during the weekday AM (7-9) and PM (4-6) peak periods. During the same day, twenty-four-hour tube counts were conducted to document the average daily traffic (ADT).

Study intersections:

- N. Torrey Pines Road/ N.U. System Dwy – Project Dwy (signalized)
- N. Torrey Pines Road/ Torrey Pines Science Park (signalized)
- N. Torrey Pines Road/North Project Dwy (unsignalized)
 - When traffic counts were conducted, existing driveway was gated/locked, and no vehicles were observed accessing the driveway.
- N. Torrey Pines Road/South Project Dwy (unsignalized)
 - When traffic counts were conducted, existing driveway was gated/locked, and no vehicles were observed accessing the driveway.

Study roadway segments:

- N. Torrey Pines Road north of N.U. System Dwy
- N. Torrey Pines Road between N.U. System Dwy and Callan Road
- N. Torrey Pines Road between Callan Road and Science Park Road

Due to COVID-19, the traffic counts collected are not representative of typical conditions, therefore, traffic counts for the study intersection listed below that were counted for the adjacent *One Alexandria Square (OAS) PTS#660043* project on October 29, 2019 and November 13, 2019 were utilized as Existing Conditions base volumes.

- N. Torrey Pines Road SB Connector/ Callan Road (unsignalized)
- N. Torrey Pines Road NB Connector /Callan Road (unsignalized)
- N. Torrey Pines Road/ Science Park Road (signalized)
- Genesee Avenue/ I-5 SB Ramps (signalized)
- Genesee Avenue/ I-5 NB Ramps (signalized)

For the remainder of the study intersections where the OAS project did not conduct counts, the traffic counts collected in 2021 for this project were increased by an average of twelve percent (12%) to obtain Existing Conditions base volumes. This growth is based on the differences from the 2019 and 2021 study segment counts of N. Torrey Pines Road between Callan Road and Science Park Road.

In addition to the 12% increase, the trips that would've been generated pre-COVID by the existing National University Corporate Headquarters Office (1,337 Average Daily Traffic (ADT) with 201 AM peak hour trips and 201 PM peak hour trips, as shown in Table 5 later in the report), were added to the existing conditions base volumes and distributed to the following:

Study intersections:

- N. Torrey Pines Road/ N.U. System Dwy – Project Dwy (signalized)
- N. Torrey Pines Road/ Torrey Pines Science Park (signalized)
- N. Torrey Pines Road/North Project Dwy (unsignalized) – through volumes only
- N. Torrey Pines Road/South Project Dwy (unsignalized) – through volumes only

Study roadway segments:

- N. Torrey Pines Road north of N.U. System Dwy
- N. Torrey Pines Road between N.U. System Dwy and Callan Road

Exhibit 5 shows the existing intersection turning movement counts and ADT's within the study area.

Appendix C contains the intersection turning movement and roadway segment count sheets, including the counts from OAS project, as well as percent increase adjustment table.

4.6- EXISTING TRAFFIC OPERATIONS

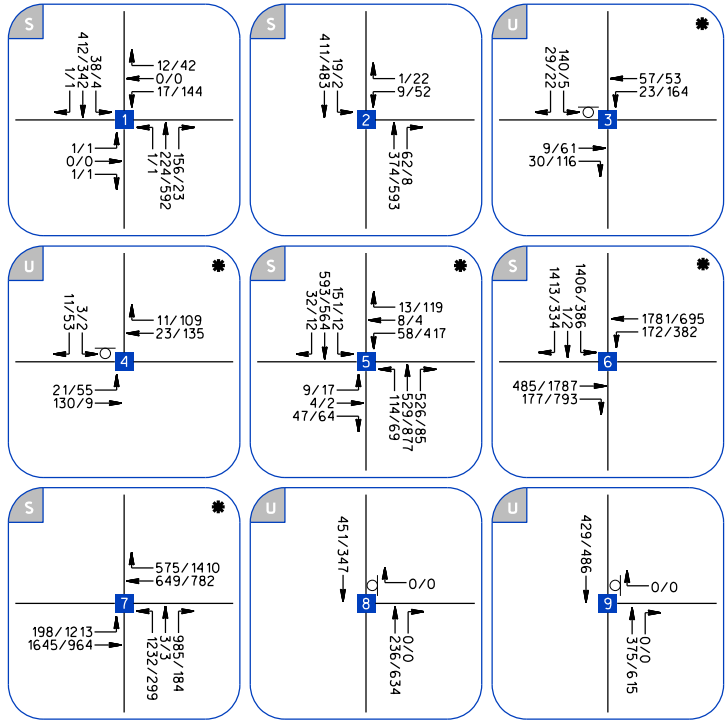
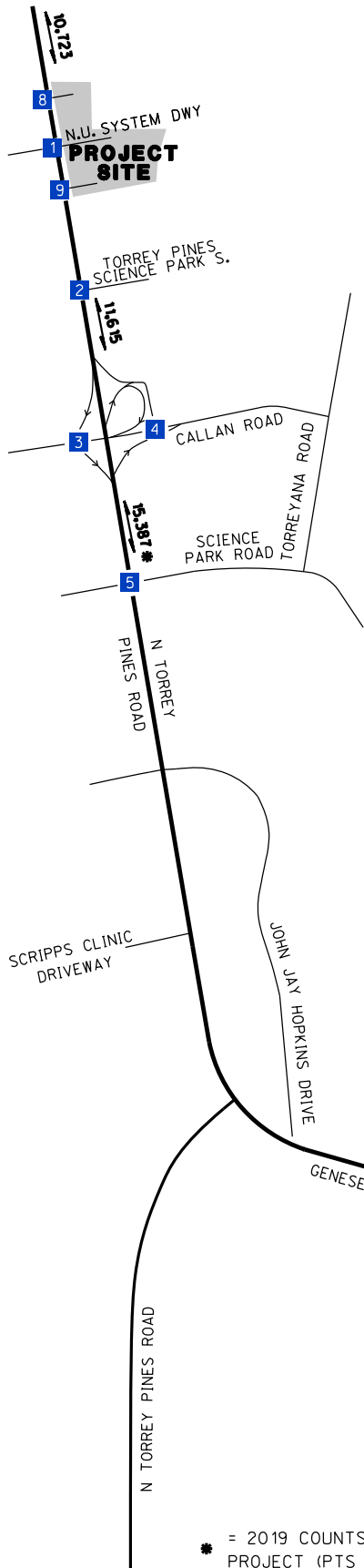
The existing intersection operations and roadway segment capacity results are based on existing base traffic volumes as described above, existing intersection geometry and existing signal timing. In accordance with the City of San Diego's benchmark for intersections and roadway segments, LOS D or better is considered acceptable.

Table 3 shows that all the studied intersections currently operate at acceptable levels of service (LOS D or better) for existing conditions except for the following intersection:

- Intersection #7: Genesee Avenue/I-5 NB Ramps (LOS F during the PM peak hour)

Table 4 shows that all the studied roadway segments currently operate at acceptable levels of service (LOS D or better) for existing conditions.

Appendix D contains the intersection capacity analysis worksheets for all scenarios.



* = 2019 COUNTS PER ONE ALEXANDRIA SQUARE PROJECT (PTS #660043)

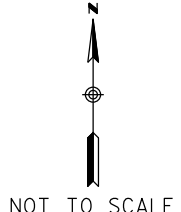


EXHIBIT 5

EXISTING TRAFFIC VOLUMES

ONE ALEXANDRIA NORTH

LEGEND

- X = INTERSECTION NUMBER
- S = SIGNALIZED
- U = UNSIGNALIZED
- O = STOP CONTROL
- X,XXX** = TWO-WAY ADT
- X,XXX** = ONE-WAY ADT
- XX/XX = AM/PM PEAK HR VOLUMES

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**TABLE 3
EXISTING INTERSECTION OPERATIONS**

#	INTERSECTION	CONTROL	DIR.	EXISTING			
				AM Peak		PM Peak	
				DELAY ¹	LOS ²	DELAY ¹	LOS ²
1	N. Torrey Pines Road/N.U. System Dwy	(S)	Overall	6.2	A	10.9	B
2	N. Torrey Pines Road/Torrey Pines Science Park	(S)	Overall	3.5	A	5.3	A
3	N. Torrey Pines Road SB Connector/ Callan Road	(OWSC)	WB-L	7.3	A	8.1	A
			SB-L	10.3	B	14.0	B
4	N. Torrey Pines Road NB Connector /Callan Road	(OWSC)	EB-TL	7.3	A	7.9	A
			SB-LR	8.8	A	9.8	A
5	N. Torrey Pines Road/ Science Park Road	(S)	Overall	20.0	C	21.8	C
6	Genesee Avenue/ I-5 SB Ramps	(S)	Overall	34.6	C	19.7	B
7	Genesee Avenue/ I-5 NB Ramps	(S)	Overall	23.9	C	83.1	F
8	N. Torrey Pines Road/North Project Dwy	(OWSC)	WB-R	0.0	A	0.0	A
9	N. Torrey Pines Road/South Project Dwy	(OWSC)	WB-R	0.0	A	0.0	A

Footnotes:

Results calculated utilizing the methodologies described in Chapters 19, 20, 21, and 22 in the 6th edition of the HCM

¹Delay is measured in seconds per vehicle. ²Level of Service

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

NB=Northbound, WB=Westbound, etc. L=Left-turn movement, T=Thru movement, R= Right-turn movement, etc.

LT=Left-Through lane, LTR=Left-Through-Right lane, etc.

**TABLE 4
EXISTING ROADWAY SEGMENT CAPACITY ANALYSIS RESULTS**

#	ROADWAY SEGMENT	FUNCTIONAL CLASSIFICATION	CAPACITY (LOS E) ¹	EXISTING		
				ADT	V/C	LOS
1	N. Torrey Pines Road between N.U. System Dwy and North Project Dwy	Major Arterial (4-lane, divided)	40,000	10,360	0.26	A
2	N. Torrey Pines Road between N.U. System Dwy and Callan Road	Major Arterial (5-lane, divided)	45,000	10,450	0.23	A
3	N. Torrey Pines Road between Callan Road and Science Park Road	Primary Arterial (6-lane, divided)	60,000	15,387	0.26	A

¹Source: City of San Diego Transportation Study Manual (September 29, 2020)

5.0- PROJECT TRAFFIC

5.1- TRIP GENERATION

The project traffic volumes generated by the proposed development were estimated utilizing City of San Diego’s Trip Generation Manual (May 2003) for a Scientific Research and Development use. Using the driveway trip rates of 8 weekday trips/thousand square feet, the project is expected to generate approximately 2,052 Average Daily Traffic (ADT) with 328 (295 inbound and 33 outbound) AM peak hour trips and 287 (29 inbound and 259 outbound) PM peak hour trips. The two existing buildings totaling 133,660 square feet to be demolished are currently occupied by National University Corporate office. Using driveway trip rates of 10 weekday trips/thousand square feet for a Corporate Headquarters/Single Tenant Office use, it is estimated that it currently generates approximately 1,337 Average Daily Traffic (ADT) with 201 (180 inbound and 21 outbound) AM peak hour trips and 201 (21 inbound and 180 outbound) PM peak hour trips. These trips were subtracted out for a net of 715 Average Daily Traffic (ADT) with 127 (115 inbound and 12 outbound) AM peak hour trips and 86 (8 inbound and 78 outbound) PM peak hour trips.

Table 5 summarizes the anticipated trips that would be generated by the project.

**TABLE 5
PROJECT TRIP GENERATION SUMMARY**

LAND USE	QUANTITY		DWY Rate ²	ADT ³	AM PEAK HOUR						PM PEAK HOUR					
					Peak Hr Rate	SPLIT		VOLUMES			Peak Hr Rate	SPLIT		VOLUMES		
						IN	OUT	IN	OUT	TOTAL		IN	OUT	IN	OUT	TOTAL
Research and Development	256.5	TSF ¹	8	2,052	16%	90%	10%	295	33	328	14%	10%	90%	29	259	287
Total	256.5	TSF		2,052				295	33	328				29	259	287
Existing National University Headquarters Office to be Demolished	133.7	TSF	10	1,337	15%	90%	10%	180	21	201	15%	10%	90%	21	180	201
Existing Total	133.7	TSF		1,337				180	21	201				21	180	201
Net Total	122.8			715				115	12	127				8	78	86

¹TSF = Thousand Square Feet

²Rates based on City of San Diego’s Trip Generation Rate Summary for Scientific Research and Development and Corporate Headquarters/Single Tenant Office.

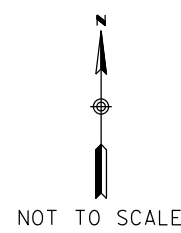
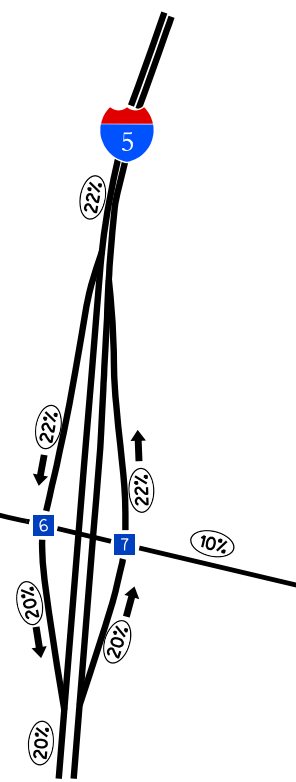
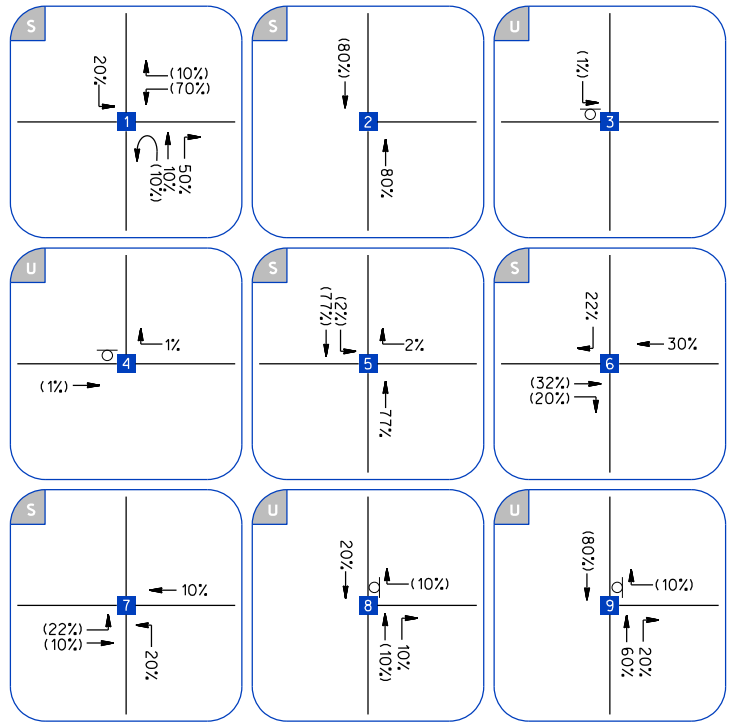
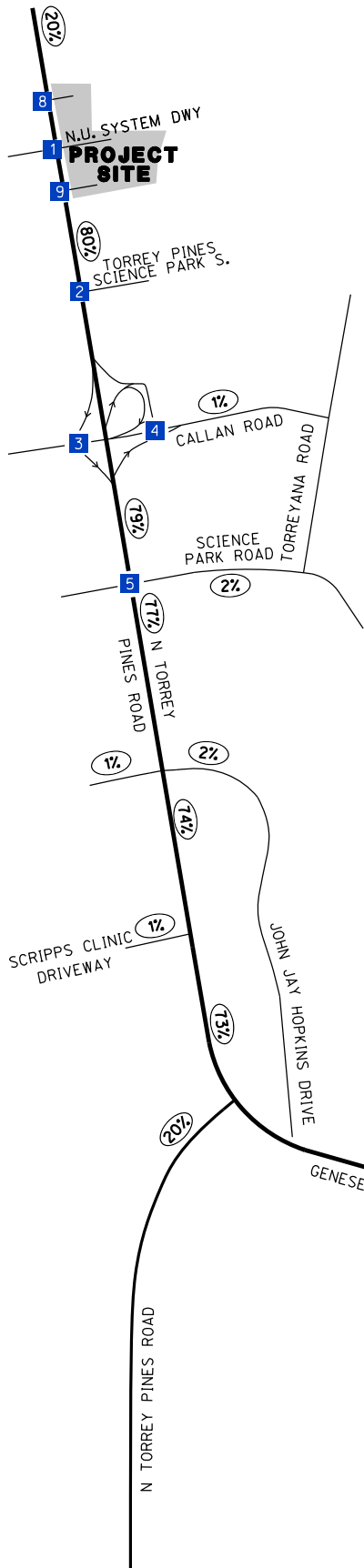
³ADT = Average Daily Traffic

5.2- TRIP DISTRIBUTION

The project traffic distribution was estimated based on the site’s proximity to the nearby major roadways, freeways, existing, future traffic patterns, as well as adjacent land uses, and our knowledge of local traffic patterns in the surrounding area. Once the project distributions were established the project traffic volumes were added to the project area intersections and roadways.

Exhibit 6 illustrates the project distribution percentages.

Exhibit 7 illustrates the anticipated project traffic volumes.



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EXHIBIT 6
PROJECT TRIP DISTRIBUTION
ONE ALEXANDRIA NORTH

LEGEND

- X = INTERSECTION NUMBER
- S = SIGNALIZED
- U = UNSIGNALIZED
- XX% = PERCENT DISTRIBUTION
- XX%** = INBOUND PERCENT DISTRIBUTION
- (XX%)** = OUTBOUND PERCENT DISTRIBUTION

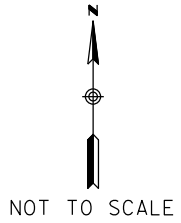
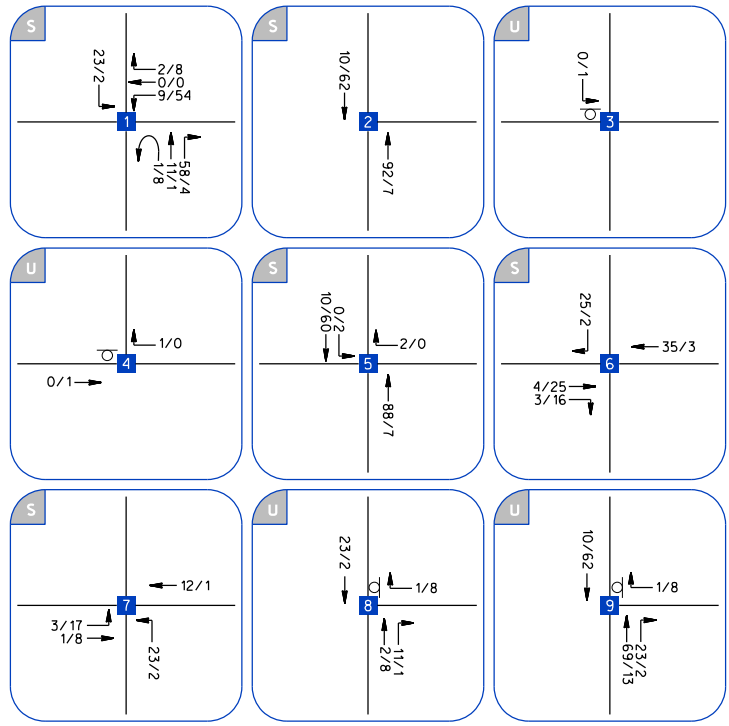
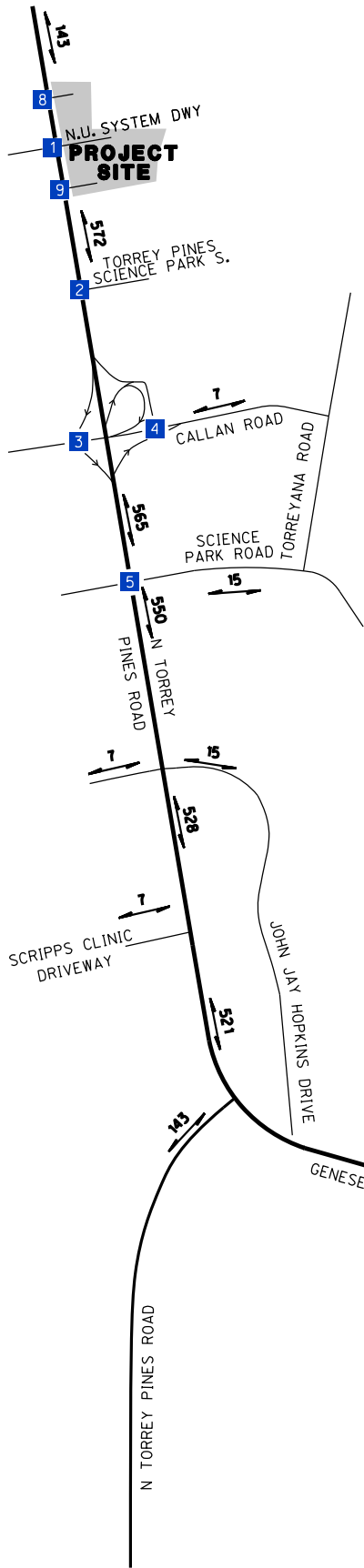


EXHIBIT 7
PROJECT TRIP VOLUMES
ONE ALEXANDRIA NORTH

LEGEND

- X = INTERSECTION NUMBER
- S = SIGNALIZED
- U = UNSIGNALIZED
- = STOP CONTROL
- X,XXX** = TWO-WAY ADT
- X,XXX** = ONE-WAY ADT

6.0- OPENING YEAR (2023) TRAFFIC CONDITIONS

6.1- OPENING YEAR (2023) TRAFFIC VOLUMES

To determine the Opening Year 2023 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 projects were 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://opensd.sandiego.gov/Web/Maps/ApprovalsDiscretionary>).

The research of the OpenDSD online map search tool and information provided by the project applicant revealed a total of eight 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.

As shown in Table 6, the cumulative projects are expected to generate a combined total of 12,087 daily trips, 1,935 AM peak hour trips, and 1,692 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 Local Mobility Analysis for the One Alexandria Square (PTS#660043) project, dated November 10, 2021 was utilized for most of the cumulative projects as that study also included most of the same cumulative projects. Additional cumulative project information was provided by City on September 07, 2021.

Appendix E contains the list of the cumulative projects in the vicinity.

Table 6 summarizes the anticipated trips that would be generated by the cumulative projects.

**TABLE 6
CUMULATIVE PROJECTS TRIP GENERATION**

CUMULATIVE PROJECT	PTS#	ADDRESS	LAND USE	SIZE (TSF) ¹	STATUS	ADT	AM PEAK HOUR			PM PEAK HOUR		
							IN	OUT	TOTAL	IN	OUT	TOTAL
Touchstone EOT	560826	11099 North Torrey Pines Road	Research & Development	58.1	Approved	464	67	7	74	6	59	65
Healthpeak Campus CDP/SDP/PDP	658398	3020-3030 Callan	Research & Development	148.2	Under Review	1,186	171	19	190	17	149	166
Spectrum III and IV Amendment PDP (Spectrum IV is completed)	566056	3115 Merryfield Row	Research & Development	118.9	Under Construction (Spectrum III)	951	137	15	152	13	120	133
Spectrum V	N/A	3545 Cray Court	Research & Development	66.4	Under Construction	531	77	8	85	7	67	74
SBPMDI Building One SCR	548681	10901 North Torrey Pines Road	Research & Development	19.5	Approved	156	22	3	25	2	20	22
The Boardwalk (Torrey Pines Science Park SCR)	263900, 263915	10265, 10285 Science Center Drive	Research & Development	110	Under Construction	880	127	14	141	12	111	123
One Alexandria Square	660043	3010 Science Park Road and 3033 Callan Road	Research & Development	117.8	Under Review	942	136	15	151	13	119	132
Towne Centre View	624751	9845 Towne Centre Dr.	Research & Development	872.1	Under Review	6,977	1,005	112	1,117	98	879	977
Total				1,511		12,087	1,742	193	1,935	168	1,524	1,692

¹TSF = Thousand Square Feet

N/A = Not Available

Source: City of San Diego Development Services Department “OpenDSD” interactive map search tool.

(URL: <https://opensd.sandiego.gov/Web/Maps/ApprovalsDiscretionary>)

Exhibit 8 shows the locations of the cumulative projects and traffic volumes.

Exhibit 9 illustrates the Opening Year (2023) without Project traffic volumes.

Exhibit 10 illustrates the Opening Year (2023) with Project traffic volumes.

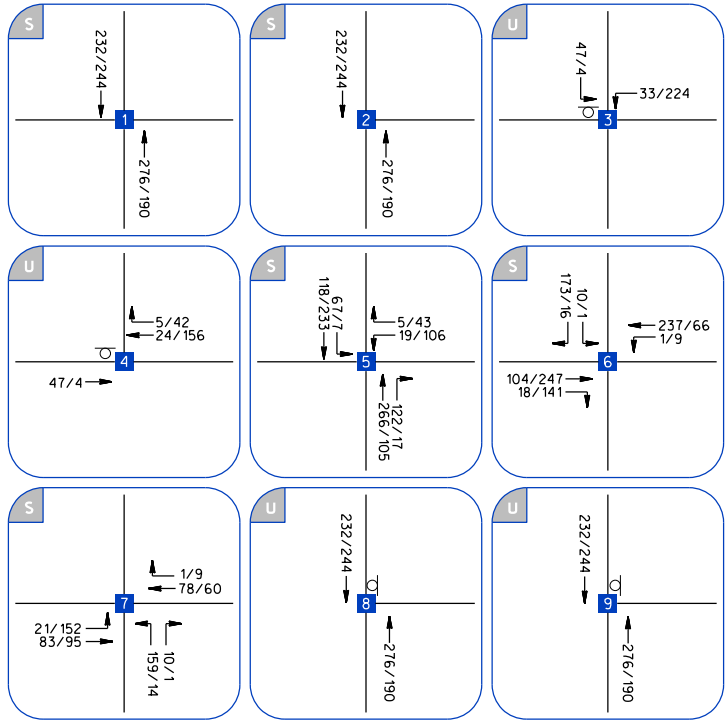
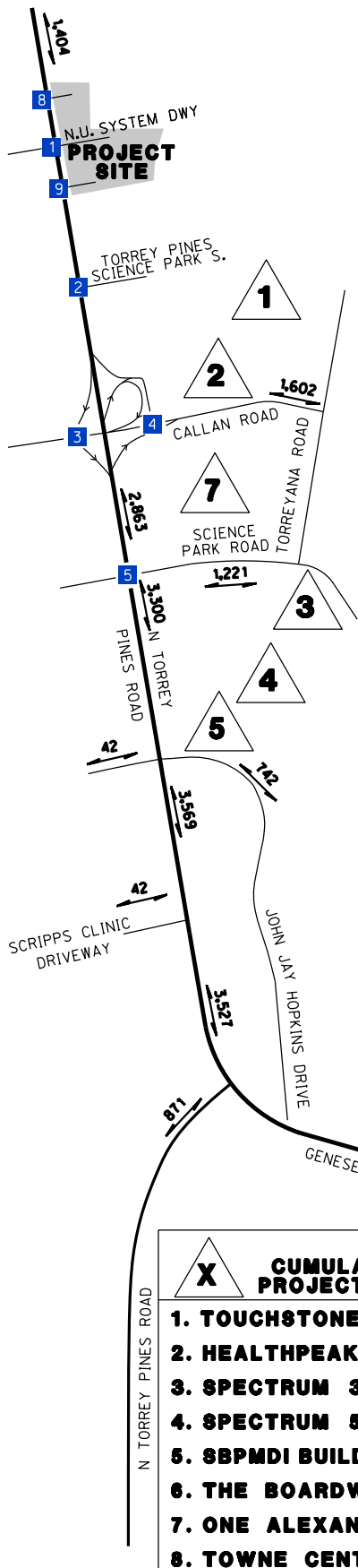
6.2-OPENING YEAR (2023) TRAFFIC OPERATIONS

Table 7 shows that all the studied intersections currently operate at acceptable levels of service (LOS D or better) for Opening Year (2023) without and with project scenarios, except for the following intersections:

- Intersection #6: Genesee Avenue/I-5 SB Ramps (LOS E during the AM peak hour for both without and with project scenarios)
- Intersection #7: Genesee Avenue/I-5 NB Ramps (LOS F during the PM peak hour for both without and with project scenarios)

A review of the signal timing at these intersections revealed that the existing 100 second cycle length is not long enough to adequately serve all movements at the intersections during the peak hours. Per coordination with Caltrans, signal timing updates up to 110 second cycle length may be acceptable to help reduce delays, however, as shown in Table 7, the increase in cycle length only reduced the delays slightly and the intersections still operate at LOS E and LOS F. In addition, the increase in cycle length showed that queue lengths at the northbound I-5 off-ramp movement increased as demonstrated in Table 9 within Section 7. Therefore, improvements are not recommended at the two ramp intersections for the Genesee Avenue / I-5 interchange.

Table 8 shows that all the studied roadway segments currently operate at acceptable levels of service (LOS D or better) for Opening Year (2023) without and with project scenarios.



- | | |
|----------|--------------------------------|
| X | CUMULATIVE PROJECT LIST |
| 1. | TOUCHSTONE |
| 2. | HEALTHPEAK |
| 3. | SPECTRUM 3 |
| 4. | SPECTRUM 5 |
| 5. | SBPMDI BUILDING 1 |
| 6. | THE BOARDWALK |
| 7. | ONE ALEXANDRIA SQUARE |
| 8. | TOWNE CENTRE VIEW |

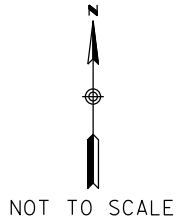
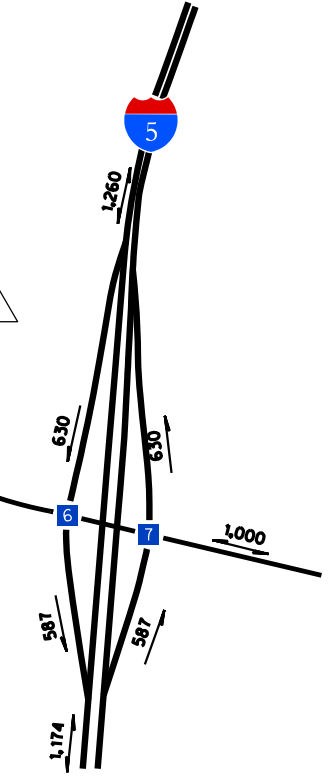


EXHIBIT 8
CUMULATIVE PROJECT TRIP DISTRIBUTION AND VOLUMES
ONE ALEXANDRIA NORTH

- LEGEND**
- X = INTERSECTION NUMBER
 - S = SIGNALIZED
 - U = UNSIGNALIZED
 - ⊙ = STOP CONTROL
 - X,XXX = TWO-WAY ADT
 - X,XXX = ONE-WAY ADT

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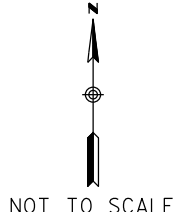
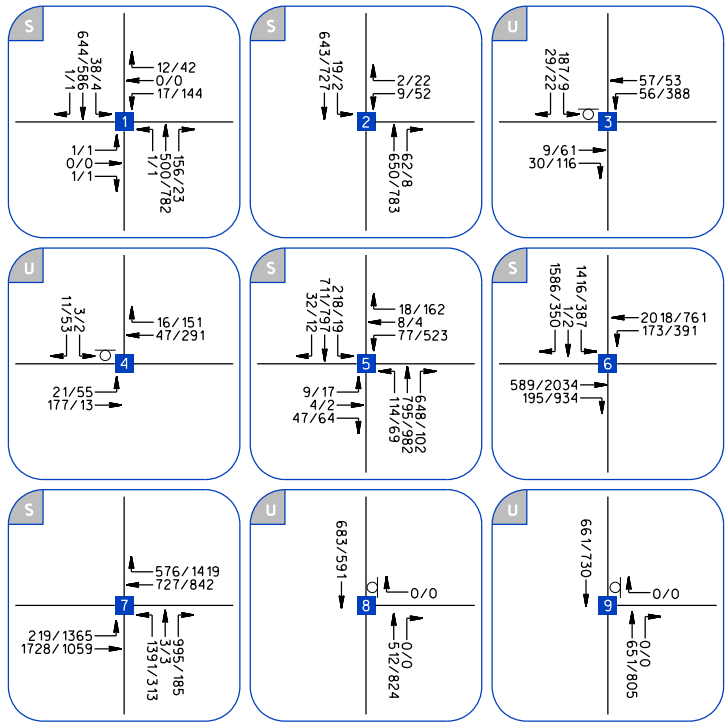
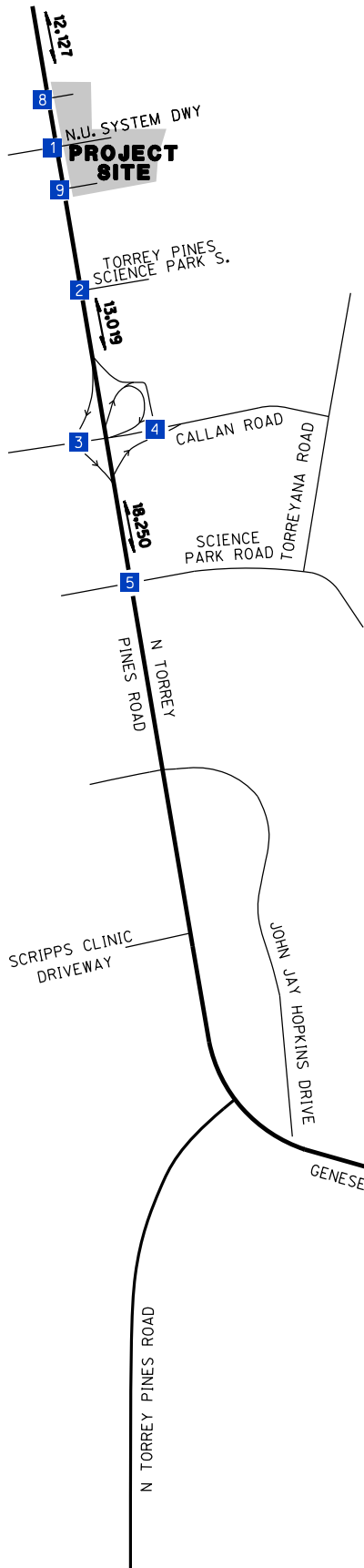
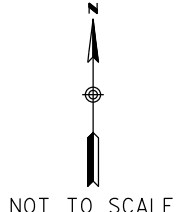
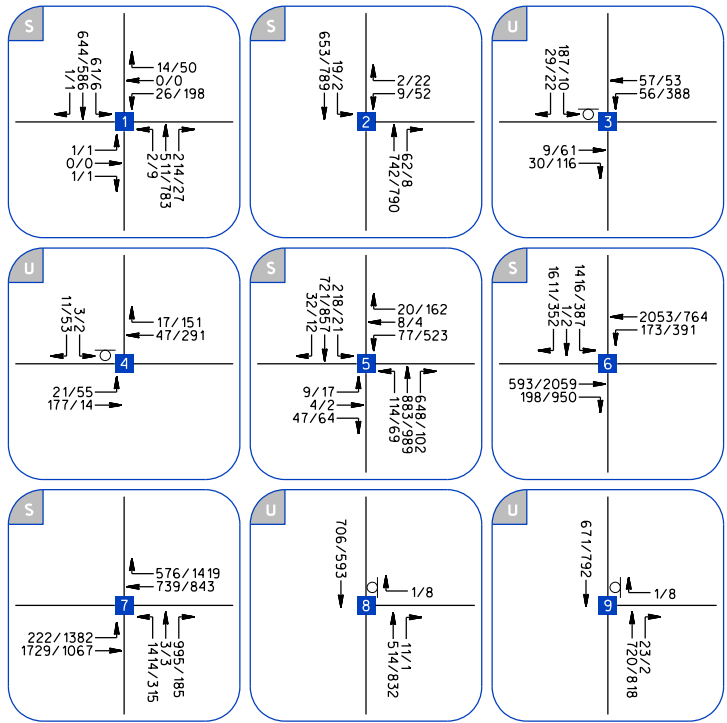
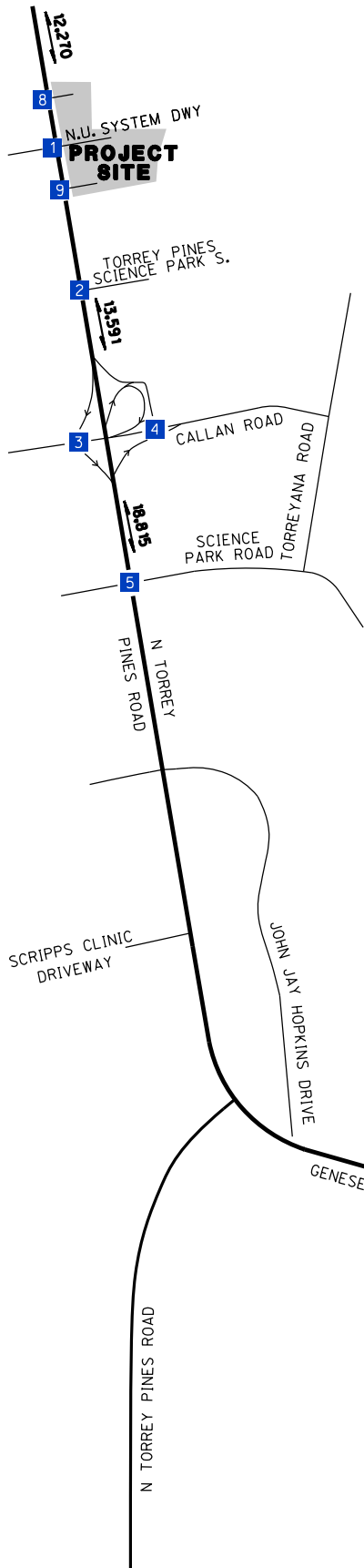


EXHIBIT 9
 OPENING YEAR (2023)
 WITHOUT PROJECT TRAFFIC VOLUMES
 ONE ALEXANDRIA NORTH

LEGEND

- X = INTERSECTION NUMBER
- S = SIGNALIZED
- U = UNSIGNALIZED
- O = STOP CONTROL
- x,xxx** = TWO-WAY ADT
- x,xxx** = ONE-WAY ADT
- xx/xx** = AM/PM PEAK HR VOLUMES



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EXHIBIT 10
 OPENING YEAR (2023)
 WITH PROJECT TRAFFIC VOLUMES
 ONE ALEXANDRIA NORTH

LEGEND

- X = INTERSECTION NUMBER
- S = SIGNALIZED
- U = UNSIGNALIZED
- O = STOP CONTROL
- x,xxx** = TWO-WAY ADT
- x,xxx** = ONE-WAY ADT
- xx/xx** = AM/PM PEAK HR VOLUMES

**TABLE 7
OPENING YR (2023) INTERSECTION OPERATIONS SUMMARY**

#	INTERSECTION	CONTROL	DIR.	OPENING YEAR (2023) WITHOUT PROJECT				OPENING YEAR (2023) WITH PROJECT				INCREMENTAL DELAY (sec)		TRAFFIC EFFECT?
				AM Peak		PM Peak		AM Peak		PM Peak		AM	PM	YES/NO
				DELAY ¹	LOS ²	DELAY ¹	LOS ²	DELAY ¹	LOS ²	DELAY ¹	LOS ²			
1	N. Torrey Pines Road/N.U. System Dwy	(S)	Overall	5.2	A	10.5	B	6.5	A	13.4	B	1.3	2.9	NO
2	N. Torrey Pines Road/Torrey Pines Science Park	(S)	Overall	3.5	A	4.7	A	3.5	A	4.7	A	0.0	0.0	NO
3	N. Torrey Pines Road SB Connector/ Callan Road	(OWSC)	WB-L	7.4	A	8.9	A	7.4	A	8.9	A	0.0	0.0	NO
				11.8	B	30.1	D	11.8	B	30.3	D	0.0	0.2	NO
4	N. Torrey Pines Road NB Connector /Callan Road	(OWSC)	EB-TL	7.4	A	8.6	A	7.4	A	8.6	A	0.0	0.0	NO
				9.0	A	11.3	B	9.0	A	11.3	B	0.0	0.0	NO
5	N. Torrey Pines Road/ Science Park Road	(S)	Overall	27.4	C	23.8	C	27.1	C	20.2	C	-0.3	-3.6	NO
6	Genesee Avenue/ I-5 SB Ramps <i>With signal timing increase to 110 seconds</i>	(S)	Overall	58.6	E	20.1	C	63.1	E	19.4	B	4.5	-0.7	NO
				-	-	-	-	61.0	E	21.3	C	2.4	1.2	NO
7	Genesee Avenue/ I-5 NB Ramps <i>With signal timing increase to 110 seconds</i>	(S)	Overall	26.9	C	97.9	F	27.3	C	99.7	F	0.4	1.8	NO
								28.3	C	95.6	F	1.4	-2.3	NO
8	N. Torrey Pines Road/North Project Dwy	(OWSC)	WB-R	0.0	A	0	A	10.2	B	11.6	B	10.2	11.6	NO
9	N. Torrey Pines Road/South Project Dwy	(OWSC)	WB-R	0.0	A	0	A	12.3	B	12.6	B	12.3	12.6	NO

Footnotes:

Results calculated utilizing the methodologies described in Chapters 19, 20, 21, and 22 in the 6th edition of the HCM

¹ Delay is measured in seconds per vehicle.

² Level of Service

(S)=Signalized, (TWSC)=Two-Way Stop Controlled, (OWSC)=One-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.

LT=Left-Through lane, LTR=Left-Through-Right lane , etc.

**TABLE 8
OPENING YR (2023) ROADWAY SEGMENT OPERATIONS SUMMARY**

#	ROADWAY SEGMENT	FUNCTIONAL CLASSIFICATION	CAPACITY (LOS E) ¹	OPENING YEAR (2023) WITHOUT PROJECT			OPENING YEAR (2023) WITH PROJECT			INCREASE	TRAFFIC EFFECT?
				ADT	V/C	LOS	ADT	V/C	LOS	V/C	YES/NO
1	N. Torrey Pines Road between N.U. System Dwy and North Project Dwy	Major Arterial (4-lane, divided)	40,000	12,127	0.30	A	12,270	0.307	A	0.00	NO
2	N. Torrey Pines Road between N.U. System Dwy and Callan Road	Major Arterial (5-lane, divided)	45,000	13,019	0.29	A	13,591	0.302	A	0.01	NO
3	N. Torrey Pines Road between Callan Road and Science Park Road	Primary Arterial (6-lane, divided)	60,000	18,250	0.30	A	18,815	0.314	A	0.01	NO

Footnotes:

¹Source: City of San Diego Transportation Study Manual (September 29, 2020)

7.0- QUEUING ANALYSIS

The 95th percentile queue lengths were analyzed to determine if the existing or proposed storage lengths at the intersections studied are sufficient. The Opening Year (2023) conditions without and with project scenarios were used to calculate the anticipated queues at the intersection turn lanes. The analysis is performed during the AM and PM peak hours, and the longer queue was then utilized for the recommendations presented in this report. The SimTraffic application within the Synchro software program was used to perform the queuing analysis for the study intersections.

Table 9 contains a summary of the anticipated queue lengths.

The queuing analysis results showed that the 95th percentile queue length is expected to exceed the storage length for the eastbound and northbound left-turn lanes at the Genesee Avenue/ I-5 Northbound Ramps intersection during the PM peak hour under Opening Year 2023 conditions for both without and with the proposed project. Extending the eastbound and northbound turn pockets are not feasible due to the physical constraints of the off-ramp lengths as well as the distance between the two ramps. In addition, as stated earlier in the report, an increase in cycle length to 110 seconds, the queue lengths at the off-ramps would increase during the peak hours if a 110-second cycle length was implemented. Therefore, no signal timing adjustments are recommended at the two ramp intersections for the Genesee Avenue / I-5 interchange.

As shown in Table 9, any other intersection queues that exceeded the existing storage capacity occur in without project conditions, and where the project is not expected to contribute trips to those movements.

Appendix F contains the 95th percentile queue results.

**TABLE 9
95TH PERCENTILE QUEUE SUMMARY**

#	INTERSECTION	CONTROL	DIR.	No. OF LANES	STORAGE ¹	OPENING YEAR (2023) WITHOUT PROJECT		OPENING YEAR (2023) WITH PROJECT		RECOMMENDED MIN. STORAGE ³	NOTES
						AM Peak	PM Peak	AM Peak	PM Peak		
						QUEUE ²	QUEUE ²	QUEUE ²	QUEUE ²		
1	N. Torrey Pines Road/N.U. System Dwy	(S)	SB-L	1	150	69	20	64	17	-	
				NB-L	1	90	7	9	8	50	
2	N. Torrey Pines Road/Torrey Pines Science Park	(S)	SB-L	1	N/A					Project does not contribute volumes to this movement	
3	N. Torrey Pines Road SB Connector/ Callan Road	(OWSC)	SB-L	1	40	58	26	61	34	-	The southbound approach is wide enough to accommodate two lanes for approximately 75'. In addition, the project is only estimated to contribute 1 project trip during PM peak hour
4	N. Torrey Pines Road NB Connector /Callan Road	(OWSC)	N/A	N/A	N/A					Shared lanes for all approaches. In addition, the project does not contribute volumes to left turn movements	
5	N. Torrey Pines Road/ Science Park Road	(S)	SB-L	1	170	194	52	211	31	-	Extending left turn pocket is not feasible due to existing raised median. In addition, the project is only estimated to contribute 2 project trips during PM peak hour
			SB-R	1	N/A					Project does not contribute volumes to these movements	
			NB-L	1							
			NB-R	1							
			WB-R	1							
			WB-L	1.5							
EB-R	1										
6	Genesee Avenue/ I-5 SB Ramps <i>With signal timing increase to 110 seconds</i>	(S)	EB-R	2	435	14	114	21	103	-	Project does not contribute volumes to these movements
			WB-L	2	N/A						
			SB-L	1.5							
			SB-R	2	800	624	545	688	791		
			EB-R	2	435	-	-	19	116		
			SB-R	2	800	-	-	601	600		
7	Genesee Avenue/ I-5 NB Ramps <i>With signal timing increase to 110 seconds</i>	(S)	EB-L	2	400	105	532	126	533		Extending the eastbound and northbound turn pockets are not feasible due to the physical constraints of the off-ramp lengths as well as the distance between the SB and NB ramps, which is exactly 400' (the length of the existing EB left turn pockets).
			NB-L	1.5	750	1000	919	991	873		Project does not contribute volumes to these movements
			NB-R	2	N/A						
			WB-R	2							
			EB-L	2	400	-	-	117	533		
			NB-L	1.5	750	-	-	1014	1004		

Footnotes:

¹ Storage lengths, in feet, based on existing storage per lane

² Queue is equal to the 95th percentile queue length, in feet, based on SimTraffic 10 software results. In cases where there are more than one lane, the highest number is reported in this table

³ Min. recommended storage lengths for turn lanes where existing or proposed lanes are less than calculated queue lengths

(S)=Signalized, (TWSC)=Two-Way Stop Controlled

NB=Northbound, WB=Westbound, etc.

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

LT=Left-Through movement group, LTR=Left-Through-Right lane movement group, etc.

8.0- 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's TSM. The turn lane evaluation was performed for the following signalized study intersections:

1. N. Torrey Pines Road/ N.U. System Dwy – Project Dwy
2. N. Torrey Pines Road/ Torrey Pines Science Park
5. N. Torrey Pines Road/ Science Park Road
6. Genesee Avenue/ I-5 SB Ramps
7. Genesee Avenue/ I-5 NB Ramps

The TSM 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 10 summarizes the results of the turn lane evaluation for the signalized study intersections listed above. As shown in Table 10, 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.

**TABLE 10
INTERSECTION TURN LANE EVALUATION**

#	INTERSECTION	CONTROL	DIR.	No. OF LANES	STORAGE ¹	OPENING YEAR (2023) WITHOUT PROJECT		OPENING YEAR (2023) WITH PROJECT		LEFT-TURN VOLUME THRESHOLDS		RIGHT-TURN VOLUME THRESHOLDS	
						AM Peak	PM Peak	AM Peak	PM Peak	SINGLE LEFT-TURN LANE	SECOND LEFT-TURN LANE	SINGLE RIGHT-TURN LANE	SECOND RIGHT-TURN LANE
						VOLUME	VOLUME	VOLUME	VOLUME				
1	N. Torrey Pines Road/N.U. System Dwy	(S)	SB-L	1	150	38	4	61	6	100	300	500	800
			NB-L	1	90	1	1	2	9				
			SB-R	0	0	1	1	1	1				
			NB-R	0	0	156	23	214	27				
2	N. Torrey Pines Road/Torrey Pines Science Park	(S)	SB-L	1	150	19	2	19	2	100	300	500	800
			NB-R	0	0	62	8	62	8				
5	N. Torrey Pines Road/ Science Park Road	(S)	SB-L	1	170	218	19	218	21	100	300	500	800
			SB-R	1	100	32	12	32	12				
			NB-L	1	260	114	69	114	69				
			NB-R	1	225	648	102	648	102				
			WB-R	1	300	18	162	20	162				
			WB-L	1.5	300	77	523	77	523				
6	Genesee Avenue/ I-5 SB Ramps	(S)	EB-R	2	435	195	934	198	950	100	300	500	800
			WB-L	2	400	173	391	173	391				
			SB-L	1.5	800	1416	387	1416	387				
			SB-R	2	800	1586	350	1611	352				
7	Genesee Avenue/ I-5 NB Ramps	(S)	EB-L	2	400	219	1365	222	1382	100	300	500	800
			NB-L	1.5	750	1391	313	1414	315				
			NB-R	2	750	995	185	995	185				
			WB-R	2	400	576	1419	576	1419				

Footnotes:

¹ Storage lengths, in feet, based on existing storage per lane

(S)=Signalized, (TWS)=Two-Way Stop Controlled

NB=Northbound, WB=Westbound, etc.

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

LT=Left-Through movement group, LTR=Left-Through-Right lane movement group, etc.

9.0- SYSTEMIC SAFETY REVIEW

The City's TSM 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. City's *Systemic Safety The Data-Driven Path to Vision Zero* document dated April, 2019, provides methodologies to identify pedestrian, bicycle, and vehicle hotspots based on specific criteria at intersections.

Systemic Safety Review for Pedestrians Summary

Table 11 summarizes the results of the Systemic Safety Review for Pedestrian Hotspots.

As shown in the table, none of the study intersections meet the three specific criteria for Pedestrian Hotspot Scenarios #1, #2 and #3. In addition, based on coordination with City of San Diego Development Services Department (DSD) staff for the *One Alexandria Square (OAS) PTS#660043* project, it was 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.

Systemic Safety Review for Bicycle Summary

Table 12 summarizes the results of the Systemic Safety Review for Bicycle Hotspots.

As shown in the table, the following study intersection meets the two specific criteria for Bicycle Hotspot Scenario #2:

- Intersection #4 – N. Torrey Pines Road NB Connector /Callan Road (unsignalized)

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 feasible for a standalone project and therefore, neither countermeasures will be implemented by the project.

Systemic Safety Review for Vehicle Summary

Table 13 summarizes the results of the Systemic Safety Review for Vehicle Hotspot Scenarios.

The table shows that no study intersections meet the criteria for Vehicle Hotspot Scenario #1, 2, 3 or 4. Therefore, no improvements are recommended.

**TABLE 11
SYSTEMIC SAFETY REVIEW FOR PEDESTRIANS**

#	INTERSECTION	Pedestrian Hotspot Scenario #1			Pedestrian Hotspot Scenario #2			Pedestrian Hotspot Scenario #3		
		SIGNALIZED	One-Way 3-Lane Road Intersects 4-Lane Road	Major Road ADT: 7,001 - 15,000	SIGNALIZED	4-Lane Road Intersects 2-Lane Road	Major Road ADT: 7,001 - 25,000	SIGNALIZED	4-Lane Road Intersects 2-Lane Road	Major Road ADT: 15,001 - 25,000
1	N. Torrey Pines Road/N.U. System Dwy	Yes	No	Yes	Yes	No	Yes	Yes	No	No
2	N. Torrey Pines Road/Torrey Pines Science Park	Yes	No	Yes	Yes	No	Yes	Yes	No	No
5	N. Torrey Pines Road/ Science Park Road	Yes	No	No	Yes	No	Yes	Yes	No	Yes
6	Genesee Avenue/ I-5 SB Ramps	Yes	No	No	Yes	No	No	Yes	No	No
7	Genesee Avenue/ I-5 NB Ramps	Yes	No	No	Yes	No	No	Yes	No	No

**TABLE 12
SYSTEMIC SAFETY REVIEW FOR BICYCLES**


#	INTERSECTION	Bicycle Hotspot Scenario #1			Bicycle Hotspot Scenario #2	
		SIGNALIZED	4-Lane Road Intersects 2-Lane Road; OR 4-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/N.U. System Dwy	Yes	No	No	No	No
2	N. Torrey Pines Road/Torrey Pines Science Park	Yes	No	No	No	No
3	N. Torrey Pines Road SB Connector/ Callan Road	No	No	No	Yes	No
4	N. Torrey Pines Road NB Connector /Callan Road	No	No	No	Yes	Yes
5	N. Torrey Pines Road/ Science Park Road	Yes	No	No	No	No
6	Genesee Avenue/ I-5 SB Ramps	Yes	No	No	No	No
7	Genesee Avenue/ I-5 NB Ramps	Yes	No	No	No	No
8	N. Torrey Pines Road/North Project Dwy	No	No	No	Yes	No
9	N. Torrey Pines Road/South Project Dwy	No	No	No	Yes	No

Shaded cells indicate intersections that meet all criteria for hotspot scenario.

**TABLE 13
SYSTEMIC SAFETY REVIEW FOR VEHICLES**

#	INTERSECTION	Vehicle Hotspot Scenario #1				Vehicle Hotspot Scenario #2			
		SIGNALIZED	4-Lane Road Intersects 2-Lane Road	Major Road ADT: >15,000	Minor Road ADT: ≤7,000	SIGNALIZED	6-Lane Road Intersects 4-Lane Road	Major Road ADT: >15,000	Minor Road ADT: >7,000
1	N. Torrey Pines Road/N.U. System Dwy	Yes	No	No	Yes	Yes	No	No	No
2	N. Torrey Pines Road/Torrey Pines Science Park	Yes	No	No	Yes	Yes	No	No	No
3	N. Torrey Pines Road SB Connector/ Callan Road	No	No	No	Yes	No	No	No	No
4	N. Torrey Pines Road NB Connector /Callan Road	No	No	No	Yes	No	No	No	No
5	N. Torrey Pines Road/ Science Park Road	Yes	No	Yes	No	Yes	No	Yes	Yes
6	Genesee Avenue/ I-5 SB Ramps	Yes	No	Yes	No	Yes	No	Yes	Yes
7	Genesee Avenue/ I-5 NB Ramps	Yes	No	Yes	No	Yes	No	Yes	Yes
8	N. Torrey Pines Road/North Project Dwy	No	No	No	Yes	No	No	No	No
9	N. Torrey Pines Road/South Project Dwy	No	No	No	Yes	No	No	No	No

#	INTERSECTION	Vehicle Hotspot Scenario #3				Vehicle Hotspot Scenario #4			
		SIGNALIZED	4-Lane Road Intersects 4-Lane Road	Minor Road ADT: >7,000	-	SIGNALIZED	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/N.U. System Dwy	Yes	No	No		Yes	No	No	No
2	N. Torrey Pines Road/Torrey Pines Science Park	Yes	No	No		Yes	No	No	No
3	N. Torrey Pines Road SB Connector/ Callan Road	No	No	No	-	No	No	No	No
4	N. Torrey Pines Road NB Connector /Callan Road	No	No	No	-	No	No	No	No
5	N. Torrey Pines Road/ Science Park Road	Yes	No	Yes	-	Yes	No	Yes	Yes
6	Genesee Avenue/ I-5 SB Ramps	Yes	No	Yes	-	Yes	No	Yes	Yes
7	Genesee Avenue/ I-5 NB Ramps	Yes	No	Yes	-	Yes	No	Yes	Yes
8	N. Torrey Pines Road/North Project Dwy	No	No	No	-	No	No	No	No
9	N. Torrey Pines Road/South Project Dwy	No	No	No	-	No	No	No	No

 Shaded cells indicate intersections that meet all criteria for hotspot scenario.

10.0- SITE ACCESS, CIRCULATION AND PARKING

10.1-SITE ACCESS AND CIRCULATION

As discussed in the project description, the project proposes four access points via one forty five-foot wide existing signalized entry way, two thirty-foot wide existing right-in/right-out only driveways and a new thirty-foot wide right-in/right-out only driveway all along N. Torrey Pines Road. The project proposes to reconstruct the three existing project driveways to current standards per City of San Diego Standard Drawings. The reconstructed existing northernmost driveway is proposed as emergency access only driveway to provide a fire access loop at N. Torrey Pines Road on the northern parcel. The main signalized project driveway at N. Torrey Pines Road and N.U. System Dwy intersection will remain as full access and the remainder three driveways will operate as right-in/right-out only access.

Near the project site, approximately six-foot wide contiguous sidewalk is provided along the project frontage on the northbound direction of N. Torrey Pines Road for approximately 430 feet north of N.U. System Driveway except for a portion of six-foot non-contiguous sidewalk proposed between N.U. System Driveway and the southern project driveway. An eight-foot-wide non-contiguous sidewalk is provided in the southbound direction along N. Torrey Pines Road. Continuous pedestrian connections will be provided between the proposed new buildings and the main parking structure area. Exhibit 4 shows the pedestrian route and distances from the project to the nearest bus stops.

N. Torrey Pines Road currently has Class II bike lanes that are provided in both directions of travel. The northbound Class II bike lane on N. Torrey Pines Road ranges between 6 and 8 feet in width through the study area and a four-foot wide buffer adjacent the bike lane is provided approximately 300 feet south of N. Torrey Pines Road/Torrey Pines Science Park Road intersection. The southbound Class II bike lane, south of N.U. System Dwy, ranges between 5 and 6 feet in width and no buffer is provided. North of N.U. System Dwy, the southbound Class II bike facility includes two separate 5 foot wide lanes and 7 foot wide buffer that extends to Los Penasquitos Creek Bridge.

The results of the intersection operations analysis showed that the project driveways are anticipated to operate at LOS D or better under all scenarios.

10.2-PARKING

The project will construct a parking structure that will provide 502 standard parking stalls and 11 ADA accessible stalls, with additional 52 standard parking stalls and 5 ADA accessible stalls within the two new research and development buildings for a total of 570 standard parking stalls and 16 ADA accessible stalls provided on-site. Out of the total 570 standard parking stalls, 46 designated clean air vehicle parking/carpool stalls will be provided in the parking structure. The project will also provide 36 long-term bicycle parking and 36 short-term bicycle racks on-site, as well as 11 motorcycle parking stalls.

The proposed parking structure would be located at the northeast corner of N. Torrey Pines Road and N.U. System Driveway. Access to the proposed parking structure would primarily be taken from the main N.U. System signalized project entrance and one of the north project driveways on N. Torrey Pines Road and access to the parking under the two new buildings would be taken from the southern project driveway access on N. Torrey Pines Road.

11.0- CONCLUSION AND RECOMMENDATIONS

Based on the analysis and results contained within this report, the LMA evaluated potential mobility effects due to the proposed One Alexandria North project, that is estimated to generate a net of approximately 715 Average Daily Traffic (ADT) with 127 (115 inbound and 12 outbound) AM peak hour trips and 86 (8 inbound and 78 outbound) PM peak hour trips. The study analyzed the nearby intersections and roadways based on the operational capabilities for the different study scenarios with and without the project generated traffic at the expected Opening Year 2023.

Intersection and Roadway Segment Analysis Findings and Recommendations

Per the results of the analysis of the proposed project, all the study area intersections and roadway segments continue to operate at LOS D or better, with the exception of the following study intersections:

Existing Conditions:

- Intersection #7: Genesee Avenue/I-5 NB Ramps (LOS F during the PM peak hour).

Opening Year 2023 Conditions:

- Intersection #6: Genesee Avenue/I-5 SB Ramps (LOS E during the AM peak hour for both without and with project scenarios).
- Intersection #7: Genesee Avenue/I-5 NB Ramps (LOS F during the PM peak hour for both without and with project scenarios).

A review of the signal timing at these intersections revealed that the existing 100 second cycle length is not long enough to adequately serve all movements at the intersections during the peak hours. Per coordination with Caltrans, signal timing updates up to 110 second cycle length may be acceptable to help reduce delays, however, as shown in Table 7, the increase in cycle length only reduced the delays slightly and the intersections still operate at LOS E and LOS F. In addition, the increase in cycle length showed that queue lengths at the northbound I-5 off-ramp movement increased, as demonstrated in Table 9 in Section 7. Therefore, improvements are not recommended at the two ramp intersections for the Genesee Avenue / I-5 interchange.

Queuing Analysis Findings and Recommendations

The results of the queuing analysis for Opening Year 2023 without and with project scenarios showed that the 95th percentile queue length is expected to exceed the available storage lengths for the following intersection:

- Intersection #7 - Genesee Avenue/ I-5 Northbound Ramps
 - The 95th percentile queue length is expected to exceed by approximately 140 feet for the eastbound lane and 250 feet for the northbound lane. However, extending the eastbound and northbound turn pockets is not feasible due to the physical constraints of the off-ramp lengths, as well as the limited distance between the two ramps. As stated above, increasing cycle length from 100 second cycle to the maximum Caltrans allowed 110 seconds did not

improve the LOS or the queuing. Therefore, no signal timing adjustments could be recommended.

As shown in Table 9, any other intersection queues that exceeded the existing storage capacity occur without project conditions, and where the project is not expected to contribute trips to those movements.

Pedestrian Network Evaluation Findings and Recommendations

Evaluation of the pedestrian network showed that near the project site, six-foot wide contiguous sidewalk is provided along the project frontage on the northbound direction of N. Torrey Pines Road for approximately 430 feet north of N.U. System Driveway except for a portion of six-foot non-contiguous sidewalk proposed between N.U. System Driveway and the southern project driveway. An eight-foot-wide non-contiguous sidewalk is provided in the southbound direction along N. Torrey Pines Road. Pedestrian crossings are currently striped with high visibility continental crosswalks along the southbound and westbound approaches as well as upgraded pedestrian ramps and pedestrian signal heads at main project entrance N. Torrey Pines Road/N.U. System Dwy intersection. Within the project site, continuous pedestrian connections will be provided between the proposed new buildings, the main parking structure area and to the existing bus stops.

Bicycle Network Evaluation Findings and Recommendations

Evaluation of the bicycle network showed that near the project site along N. Torrey Pines Road there are currently Class II bike lanes that are provided in both directions of travel consistent with University Community plan and City of San Diego Bicycle Master plan. The northbound Class II bike lane on N. Torrey Pines Road ranges between 6 and 8 feet in width through the study area and a four-foot wide buffer adjacent the bike lane is provided approximately 300 feet south of N. Torrey Pines Road/Torrey Pines Science Park Road intersection. The southbound Class II bike lane ranges between 5 and 6 feet in width and no buffer is provided.

Transit Network Evaluation Findings and Recommendations

Evaluation of the transit network in the study area revealed that there are currently four (4) transit bus stops provided along North Torrey Pines Road within a quarter mile walking distance of the project site for NCTD Route 101. Amenities such as a shelter, bench and trash receptable are not provided at the transit stops within walking distance of the project site. However, as stated in the separate VMT Assessment memo for this project, the following VMT reducing measures will be provided by the project:

- The project will coordinate with NCTD to provide a bus shelter, a bench and a trash receptable to the bus stop located approximately 65 feet north of N.U. System Dwy adjacent the project site.

Turn Lane Evaluation Findings and Recommendations

The need for left-turn or right-turn lanes at the signalized study intersections was also evaluated per the criteria identified in the City's TSM. 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 and Recommendations

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.

The results of the Systemic Safety Review for Pedestrian Hotspots showed that none of the study intersections meet the three specific criteria for Pedestrian Hotspot Scenarios #1, #2 and #3. In addition, based on coordination with City of San Diego Development Services Department (DSD) staff for the *One Alexandria Square (OAS) PTS#660043* project, it was 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.

The results of the Systemic Safety Review for Bicycle Hotspots showed that, the following study intersection meets the two specific criteria for Bicycle Hotspot Scenario #2:

- Intersection #4 – N. Torrey Pines Road NB Connector /Callan Road (unsignalized)

The *Systemic Safety The Data-Driven Path to Vision Zero* recommends a public messaging campaign or target enforcement of bicycles running stop signs as countermeasures to discourage bicyclists from “rolling” through stop signs at side-street stop-controlled intersections. These countermeasures are feasible for a standalone project and therefore, neither countermeasures will be implemented by the project.

The results of the Systemic Safety Review for Vehicle Hotspots showed that no study intersections meet the criteria for Vehicle Hotspot Scenario #1, 2, 3 or 4. Therefore, no improvements are recommended.

Site Access Recommendations

To facilitate access to/from the project site, the project proposes four access points via one forty five-foot wide existing signalized entry way, two thirty-foot wide existing right-in/right-out only driveways and a new thirty-foot wide right-in/right-out only driveway all along N. Torrey Pines Road. The project proposes to reconstruct the three existing project driveways to current standards per City of San Diego Standard Drawings. The reconstructed existing northernmost driveway is proposed as emergency access only driveway to provide a fire access loop at N. Torrey Pines Road on the northern parcel. The main signalized project driveway at N. Torrey Pines Road and N.U. System Dwy intersection will remain as full access and the remainder three driveways will operate as right-in/right-out only access.

Following City Standards and CA MUTCD, new stop signs with a right-only signage and striping will be installed for the two unsignalized re-constructed driveways and the new project access driveway just

north of the N.U. System Dwy signalized intersection. Removeable/retractable bollards or a gate and signage indicating emergency access only will be installed for the northernmost driveway. In addition, internal striping, and signage at the designated drop off area adjacent Building "B4" will be added to guide vehicles to make u-turns to exit towards the newly built project access driveway just south of the emergency access driveway. Marked accessible paths will also be provided for the 16 designated accessible parking stalls. A total of 570 standard parking stalls with 46 electric vehicle capable parking spaces will be provided. The project will also include 36 long-term bicycle parking and 36 short-term bicycle racks on-site, as well as 11 motorcycle parking stalls.

APPENDIX A

PROJECT INFORMATION CHECKLIST (PIF) AND CLIMATE ACTION PLAN CHECKLIST (CAP)



City of San Diego Project Information Form

Project Information

Project Name:					
Project Applicant					
Name:					
Address:					
Contact Information	Phone Number:		Email:		
Project Location and Context					
Project Address:					
APN:					
Driveway Cross Streets:					
Please attach a Project Location Map that clearly identifies project driveways and access points.					
Community Plan Area:		Land Use Designation:		Zoning Designation:	
Is any portion of the project located in an RTIP Transit Priority Area?: <input type="checkbox"/> Yes <input type="checkbox"/> No					
Project Description (with Proposed Land Uses and Intensities):					
Number of Parking Spaces:	Vehicle Spaces	Accessible Spaces	Bicycle Spaces <i>(racks and secure Storage)</i>	Motorcycle Spaces	
Identify any project features related to TDM and Identify any transportation amenities or travel demand management measures that are required based on the San Diego Municipal Code Section 142.0528 (transportation amenities) or the Climate Action Plan Consistency Checklist. For example: transit pass subsidies, unbundled parking, shuttle services, car share, bicycle supportive features (bike repair station, bike lockers, etc.).					
Please attach a project site plan that clearly identifies the following:					
<ul style="list-style-type: none"> • Land use types and quantities, and number of parking spaces provided (vehicle and bicycle) clearly identified. • Driveway locations and type (full access, partial access, right in/out only) identified. • Pedestrian access, bicycle access and on-site pedestrian circulation clearly identified. • Location/distance of closest existing transit stop and proposed transit stops identified in RTIP (measured as walking distance to project entrance/or middle of parcel). 					



**City of San Diego
Project Information Form**

Trip Generation Estimates (calculated using the process described in the TSM):	Unadjusted Driveway Trips		Total Net New Trips	
	Daily:	2052	Daily:	715
	AM Peak Hour:	328	AM Peak Hour:	127
	PM Peak Hour:	287	PM Peak Hour:	86

Preliminary Screening Criteria

CEQA Transportation Analysis Screening		Screened Out	Not Screened Out
1) Select the Land Uses that apply to your project 2) Answer the questions for each Land Use that applies to your project <i>(if "Yes" in any land use category below then that land use (or a portion of the land use) is screened from CEQA Transportation Analysis)</i>			
		Yes	No
<input type="checkbox"/>	1. Redevelopment Project:		
	a. Does the project result in a net decrease in total Project VMT?	<input type="radio"/>	<input checked="" type="radio"/>
	b. Answer if yes to 1a. If the project replaces affordable housing with market rate housing, are there more market rate units planned than existing affordable units being replaced.	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	2. Residential Project:		
	a. Is the project in a VMT/Capita Efficient Area (per SANDAG screening maps)?	<input type="radio"/>	<input type="radio"/>
	b. Does the project include Affordable Housing?	<input type="radio"/>	<input type="radio"/>
	$\frac{\text{Affordable Units}}{\text{Total Units}} + \frac{\text{Market Rate Units}}{\text{Total Units}} = \frac{\text{Total Units}}{\text{Total Units}}$ All affordable units are screened out.	<input type="radio"/>	<input type="radio"/>
<input checked="" type="checkbox"/>	3. Commercial Employment Project:		
	• Is the project in a VMT/Employee Efficient Area? (per SANDAG screening maps?)	<input type="radio"/>	<input checked="" type="radio"/>
<input type="checkbox"/>	4. Industrial Employment Project		
	• Is the project in a VMT/Industrial Employee Efficient Area?	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	5. Retail/Public Facility/Recreational		
	• Is the project locally serving: - Retail OR Public Facility OR Recreational	<input type="radio"/>	<input type="radio"/>
<input type="checkbox"/>	6. Small Project		
	• For all components of a project that are not screened out above (all 'Yes' in a land use category), what is the daily unadjusted driveway trip generation?	<input type="radio"/>	<input type="radio"/>

	Is it less than 300 daily trips?		

Local Mobility Analysis		
Is your project consistent with the community plan and zoning?	<input checked="" type="radio"/> Consistent	<input type="radio"/> Inconsistent
	<input type="checkbox"/> Generates less than 1,000 daily trips (unadjusted driveway trips)	<input type="checkbox"/> Generates less than 500 daily trips (unadjusted driveway trips)
Will project development be phased?	No	In what month are traffic counts planned to be conducted? October, 2019 and April 2021



CLIMATE ACTION PLAN CONSISTENCY CHECKLIST INTRODUCTION

In December 2015, the City adopted a Climate Action Plan (CAP) that outlines the actions that City will undertake to achieve its proportional share of State greenhouse gas (GHG) emission reductions. The purpose of the Climate Action Plan Consistency Checklist (Checklist) is to, in conjunction with the CAP, provide a streamlined review process for proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to the California Environmental Quality Act (CEQA).¹

Analysis of GHG emissions and potential climate change impacts from new development is required under CEQA. The CAP is a plan for the reduction of GHG emissions in accordance with CEQA Guidelines Section 15183.5. Pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b), a project's incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable if it complies with the requirements of the CAP.

This Checklist is part of the CAP and contains measures that are required to be implemented on a project-by-project basis to ensure that the specified emissions targets identified in the CAP are achieved. Implementation of these measures would ensure that new development is consistent with the CAP's assumptions for relevant CAP strategies toward achieving the identified GHG reduction targets. Projects that are consistent with the CAP as determined through the use of this Checklist may rely on the CAP for the cumulative impacts analysis of GHG emissions. Projects that are not consistent with the CAP must prepare a comprehensive project-specific analysis of GHG emissions, including quantification of existing and projected GHG emissions and incorporation of the measures in this Checklist to the extent feasible. Cumulative GHG impacts would be significant for any project that is not consistent with the CAP.

The Checklist may be updated to incorporate new GHG reduction techniques or to comply with later amendments to the CAP or local, State, or federal law.

¹ Certain projects seeking ministerial approval may be required to complete the Checklist. For example, projects in a Community Plan Implementation Overlay Zone may be required to use the Checklist to qualify for ministerial level review. See Supplemental Development Regulations in the project's community plan to determine applicability.

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CAP CONSISTENCY CHECKLIST SUBMITTAL APPLICATION

- ❖ The Checklist is required only for projects subject to CEQA review.²
- ❖ If required, the Checklist must be included in the project submittal package. Application submittal procedures can be found in [Chapter 11: Land Development Procedures](#) of the City's Municipal Code.
- ❖ The requirements in the Checklist will be included in the project's conditions of approval.
- ❖ The applicant must provide an explanation of how the proposed project will implement the requirements described herein to the satisfaction of the Planning Department.

Application Information

Contact Information

Project No./Name: _____

Property Address: _____

Applicant Name/Co.: _____

Contact Phone: _____ Contact Email: _____

Was a consultant retained to complete this checklist? Yes No If Yes, complete the following

Consultant Name: _____ Contact Phone: _____

Company Name: _____ Contact Email: _____

Project Information

1. What is the size of the project (acres)? _____

2. Identify all applicable proposed land uses:

Residential (indicate # of single-family units): _____

Residential (indicate # of multi-family units): _____

Commercial (total square footage): _____

Industrial (total square footage): _____

Other (describe): _____

3. Is the project or a portion of the project located in a Transit Priority Area? Yes No

4. Provide a brief description of the project proposed:

² Certain projects seeking ministerial approval may be required to complete the Checklist. For example, projects in a Community Plan Implementation Overlay Zone may be required to use the Checklist to qualify for ministerial level review. See Supplemental Development Regulations in the project's community plan to determine applicability.



CAP CONSISTENCY CHECKLIST QUESTIONS

Step 1: Land Use Consistency

The first step in determining CAP consistency for discretionary development projects is to assess the project's consistency with the growth projections used in the development of the CAP. This section allows the City to determine a project's consistency with the land use assumptions used in the CAP.

Step 1: Land Use Consistency		
Checklist Item (Check the appropriate box and provide explanation and supporting documentation for your answer)	Yes	No
A. Is the proposed project consistent with the existing General Plan and Community Plan land use and zoning designations? ³ <u>OR</u>		
B. If the proposed project is not consistent with the existing land use plan and zoning designations, and includes a land use plan and/or zoning designation amendment, would the proposed amendment result in an increased density within a Transit Priority Area (TPA) ⁴ and implement CAP Strategy 3 actions, as determined in Step 3 to the satisfaction of the Development Services Department? <u>OR</u>	<input type="checkbox"/>	<input type="checkbox"/>
C. If the proposed project is not consistent with the existing land use plan and zoning designations, does the project include a land use plan and/or zoning designation amendment that would result in an equivalent or less GHG-intensive project when compared to the existing designations?		

If **"Yes,"** proceed to Step 2 of the Checklist. For question B above, complete Step 3. For question C above, provide estimated project emissions under both existing and proposed designation(s) for comparison. Compare the maximum buildout of the existing designation and the maximum buildout of the proposed designation.

If **"No,"** in accordance with the City's Significance Determination Thresholds, the project's GHG impact is significant. The project must nonetheless incorporate each of the measures identified in Step 2 to mitigate cumulative GHG emissions impacts unless the decision maker finds that a measure is infeasible in accordance with CEQA Guidelines Section 15091. Proceed and complete Step 2 of the Checklist.

³ This question may also be answered in the affirmative if the project is consistent with SANDAG Series 12 growth projections, which were used to determine the CAP projections, as determined by the Planning Department.

⁴ This category applies to all projects that answered in the affirmative to question 3 on the previous page: Is the project or a portion of the project located in a transit priority area.

Step 2: CAP Strategies Consistency

The second step of the CAP consistency review is to review and evaluate a project's consistency with the applicable strategies and actions of the CAP. Step 2 only applies to development projects that involve permits that would require a certificate of occupancy from the Building Official or projects comprised of one and two family dwellings or townhouses as defined in the California Residential Code and their accessory structures.⁵ All other development projects that would not require a certificate of occupancy from the Building Official shall implement Best Management Practices for construction activities as set forth in the [Greenbook](#) (for public projects).

Step 2: CAP Strategies Consistency			
Checklist Item (Check the appropriate box and provide explanation for your answer)	Yes	No	N/A
Strategy 1: Energy & Water Efficient Buildings			
<p>1. <i>Cool/Green Roofs.</i></p> <ul style="list-style-type: none"> • Would the project include roofing materials with a minimum 3-year aged solar reflection and thermal emittance or solar reflection index equal to or greater than the values specified in the voluntary measures under California Green Building Standards Code (Attachment A)?; <u>OR</u> • Would the project roof construction have a thermal mass over the roof membrane, including areas of vegetated (green) roofs, weighing at least 25 pounds per square foot as specified in the voluntary measures under California Green Building Standards Code?; <u>OR</u> • Would the project include a combination of the above two options? <p>Check "N/A" only if the project does not include a roof component.</p> <div style="border: 1px solid black; height: 150px; width: 100%; margin-top: 10px;"></div>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

⁵ Actions that are not subject to Step 2 would include, for example: 1) discretionary map actions that do not propose specific development, 2) permits allowing wireless communication facilities, 3) special events permits, 4) use permits or other permits that do not result in the expansion or enlargement of a building (e.g., decks, garages, etc.), and 5) non-building infrastructure projects such as roads and pipelines. Because such actions would not result in new occupancy buildings from which GHG emissions reductions could be achieved, the items contained in Step 2 would not be applicable.

2. *Plumbing fixtures and fittings*

With respect to plumbing fixtures or fittings provided as part of the project, would those low-flow fixtures/appliances be consistent with each of the following:

Residential buildings:

- Kitchen faucets: maximum flow rate not to exceed 1.5 gallons per minute at 60 psi;
- Standard dishwashers: 4.25 gallons per cycle;
- Compact dishwashers: 3.5 gallons per cycle; and
- Clothes washers: water factor of 6 gallons per cubic feet of drum capacity?

Nonresidential buildings:

- Plumbing fixtures and fittings that do not exceed the maximum flow rate specified in [Table A5.303.2.3.1 \(voluntary measures\) of the California Green Building Standards Code](#) (See Attachment A); and
- Appliances and fixtures for commercial applications that meet the provisions of [Section A5.303.3 \(voluntary measures\) of the California Green Building Standards Code](#) (See Attachment A)?

Check "N/A" only if the project does not include any plumbing fixtures or fittings.

Strategy 3: Bicycling, Walking, Transit & Land Use

3. *Electric Vehicle Charging*

- Multiple-family projects of 17 dwelling units or less: Would 3% of the total parking spaces required, or a minimum of one space, whichever is greater, be provided with a listed cabinet, box or enclosure connected to a conduit linking the parking spaces with the electrical service, in a manner approved by the building and safety official, to allow for the future installation of electric vehicle supply equipment to provide electric vehicle charging stations at such time as it is needed for use by residents?
- Multiple-family projects of more than 17 dwelling units: Of the total required listed cabinets, boxes or enclosures, would 50% have the necessary electric vehicle supply equipment installed to provide active electric vehicle charging stations ready for use by residents?
- Non-residential projects: Of the total required listed cabinets, boxes or enclosures, would 50% have the necessary electric vehicle supply equipment installed to provide active electric vehicle charging stations ready for use?

Check "N/A" only if the project is a single-family project or would not require the provision of listed cabinets, boxes, or enclosures connected to a conduit linking the parking spaces with electrical service, e.g., projects requiring fewer than 10 parking spaces.

Strategy 3: Bicycling, Walking, Transit & Land Use

(Complete this section if project includes non-residential or mixed uses)

4. *Bicycle Parking Spaces*

Would the project provide more short- and long-term bicycle parking spaces than required in the City's Municipal Code ([Chapter 14, Article 2, Division 5](#))?⁶

Check "N/A" only if the project is a residential project.

⁶ Non-portable bicycle corrals within 600 feet of project frontage can be counted towards the project's bicycle parking requirements.

5. *Shower facilities*

If the project includes nonresidential development that would accommodate over 10 tenant occupants (employees), would the project include changing/shower facilities in accordance with the voluntary measures under the [California Green Building Standards Code](#) as shown in the table below?

Number of Tenant Occupants (Employees)	Shower/Changing Facilities Required	Two-Tier (12" X 15" X 72") Personal Effects Lockers Required
0-10	0	0
11-50	1 shower stall	2
51-100	1 shower stall	3
101-200	1 shower stall	4
Over 200	1 shower stall plus 1 additional shower stall for each 200 additional tenant-occupants	1 two-tier locker plus 1 two-tier locker for each 50 additional tenant-occupants

Check "N/A" only if the project is a residential project, or if it does not include nonresidential development that would accommodate over 10 tenant occupants (employees).

6. *Designated Parking Spaces*

If the project includes a nonresidential use in a TPA, would the project provide designated parking for a combination of low-emitting, fuel-efficient, and carpool/vanpool vehicles in accordance with the following table?

Number of Required Parking Spaces	Number of Designated Parking Spaces
0-9	0
10-25	2
26-50	4
51-75	6
76-100	9
101-150	11
151-200	18
201 and over	At least 10% of total

This measure does not cover electric vehicles. See Question 4 for electric vehicle parking requirements.

Note: Vehicles bearing Clean Air Vehicle stickers from expired HOV lane programs may be considered eligible for designated parking spaces. The required designated parking spaces are to be provided within the overall minimum parking requirement, not in addition to it.

Check "N/A" only if the project is a residential project, or if it does not include nonresidential use in a TPA.

7. *Transportation Demand Management Program*

If the project would accommodate over 50 tenant-occupants (employees), would it include a transportation demand management program that would be applicable to existing tenants and future tenants that includes:

At least one of the following components:

- Parking cash out program
- Parking management plan that includes charging employees market-rate for single-occupancy vehicle parking and providing reserved, discounted, or free spaces for registered carpools or vanpools
- Unbundled parking whereby parking spaces would be leased or sold separately from the rental or purchase fees for the development for the life of the development

And at least three of the following components:

- Commitment to maintaining an employer network in the SANDAG iCommute program and promoting its RideMatcher service to tenants/employees
- On-site carsharing vehicle(s) or bikesharing
- Flexible or alternative work hours
- Telework program
- Transit, carpool, and vanpool subsidies
- Pre-tax deduction for transit or vanpool fares and bicycle commute costs
- Access to services that reduce the need to drive, such as cafes, commercial stores, banks, post offices, restaurants, gyms, or childcare, either onsite or within 1,320 feet (1/4 mile) of the structure/use?

Check "N/A" only if the project is a residential project or if it would not accommodate over 50 tenant-occupants (employees).

Step 3: Project CAP Conformance Evaluation (if applicable)

The third step of the CAP consistency review only applies if Step 1 is answered in the affirmative under option B. The purpose of this step is to determine whether a project that is located in a TPA but that includes a land use plan and/or zoning designation amendment is nevertheless consistent with the assumptions in the CAP because it would implement CAP Strategy 3 actions. In general, a project that would result in a reduction in density inside a TPA would not be consistent with Strategy 3. The following questions must each be answered in the affirmative and fully explained.

1. Would the proposed project implement the General Plan's City of Villages strategy in an identified Transit Priority Area (TPA) that will result in an increase in the capacity for transit-supportive residential and/or employment densities?

Considerations for this question:

- Does the proposed land use and zoning designation associated with the project provide capacity for transit-supportive residential densities within the TPA?
- Is the project site suitable to accommodate mixed-use village development, as defined in the General Plan, within the TPA?
- Does the land use and zoning associated with the project increase the capacity for transit-supportive employment intensities within the TPA?

2. Would the proposed project implement the General Plan's Mobility Element in Transit Priority Areas to increase the use of transit?

Considerations for this question:

- Does the proposed project support/incorporate identified transit routes and stops/stations?
- Does the project include transit priority measures?

3. Would the proposed project implement pedestrian improvements in Transit Priority Areas to increase walking opportunities?

Considerations for this question:

- Does the proposed project circulation system provide multiple and direct pedestrian connections and accessibility to local activity centers (such as transit stations, schools, shopping centers, and libraries)?
- Does the proposed project urban design include features for walkability to promote a transit supportive environment?

4. Would the proposed project implement the City of San Diego's Bicycle Master Plan to increase bicycling opportunities?

Considerations for this question:

- Does the proposed project circulation system include bicycle improvements consistent with the Bicycle Master Plan?
- Does the overall project circulation system provide a balanced, multimodal, "complete streets" approach to accommodate mobility needs of all users?

5. Would the proposed project incorporate implementation mechanisms that support Transit Oriented Development?

Considerations for this question:

- Does the proposed project include new or expanded urban public spaces such as plazas, pocket parks, or urban greens in the TPA?
- Does the land use and zoning associated with the proposed project increase the potential for jobs within the TPA?
- Do the zoning/implementing regulations associated with the proposed project support the efficient use of parking through mechanisms such as: shared parking, parking districts, unbundled parking, reduced parking, paid or time-limited parking, etc.?

6. Would the proposed project implement the Urban Forest Management Plan to increase urban tree canopy coverage?

Considerations for this question:

- Does the proposed project provide at least three different species for the primary, secondary and accent trees in order to accommodate varying parkway widths?
- Does the proposed project include policies or strategies for preserving existing trees?
- Does the proposed project incorporate tree planting that will contribute to the City's 20% urban canopy tree coverage goal?



CLIMATE ACTION PLAN CONSISTENCY CHECKLIST

ATTACHMENT A

This attachment provides performance standards for applicable Climate Action Plan (CAP) Consistency Checklist measures.

Table 1 Roof Design Values for Question 1: Cool/Green Roofs supporting Strategy 1: Energy & Water Efficient Buildings of the Climate Action Plan				
Land Use Type	Roof Slope	Minimum 3-Year Aged Solar Reflectance	Thermal Emittance	Solar Reflective Index
Low-Rise Residential	≤ 2:12	0.55	0.75	64
	> 2:12	0.20	0.75	16
High-Rise Residential Buildings, Hotels and Motels	≤ 2:12	0.55	0.75	64
	> 2:12	0.20	0.75	16
Non-Residential	≤ 2:12	0.55	0.75	64
	> 2:12	0.20	0.75	16

Source: Adapted from the [California Green Building Standards Code \(CALGreen\)](#) Tier 1 residential and non-residential voluntary measures shown in Tables A4.106.5.1 and A5.106.11.2.2, respectively. Roof installation and verification shall occur in accordance with the CALGreen Code.

CALGreen does not include recommended values for low-rise residential buildings with roof slopes of ≤ 2:12 for San Diego's climate zones (7 and 10). Therefore, the values for climate zone 15 that covers Imperial County are adapted here.

Solar Reflectance Index (SRI) equal to or greater than the values specified in this table may be used as an alternative to compliance with the aged solar reflectance values and thermal emittance.

Table 2 Fixture Flow Rates for Non-Residential Buildings related to Question 2: Plumbing Fixtures and Fittings supporting Strategy 1: Energy & Water Efficient Buildings of the Climate Action Plan

Fixture Type	Maximum Flow Rate
Showerheads	1.8 gpm @ 80 psi
Lavatory Faucets	0.35 gpm @60 psi
Kitchen Faucets	1.6 gpm @ 60 psi
Wash Fountains	1.6 [rim space(in.)/20 gpm @ 60 psi]
Metering Faucets	0.18 gallons/cycle
Metering Faucets for Wash Fountains	0.18 [rim space(in.)/20 gpm @ 60 psi]
Gravity Tank-type Water Closets	1.12 gallons/flush
Flushometer Tank Water Closets	1.12 gallons/flush
Flushometer Valve Water Closets	1.12 gallons/flush
Electromechanical Hydraulic Water Closets	1.12 gallons/flush
Urinals	0.5 gallons/flush

Source: Adapted from the [California Green Building Standards Code](#) (CALGreen) Tier 1 non-residential voluntary measures shown in Tables A5.303.2.3.1 and A5.106.11.2.2, respectively. See the [California Plumbing Code](#) for definitions of each fixture type.

Where complying faucets are unavailable, aerators rated at 0.35 gpm or other means may be used to achieve reduction.

Acronyms:

gpm = gallons per minute

psi = pounds per square inch (unit of pressure)

in. = inch

Table 3 Standards for Appliances and Fixtures for Commercial Application related to Question 2: Plumbing Fixtures and Fittings supporting Strategy 1: Energy & Water Efficient Buildings of the Climate Action Plan

Appliance/Fixture Type	Standard	
Clothes Washers	Maximum Water Factor (WF) that will reduce the use of water by 10 percent below the California Energy Commissions' WF standards for commercial clothes washers located in Title 20 of the <i>California Code of Regulations</i> .	
Conveyor-type Dishwashers	0.70 maximum gallons per rack (2.6 L) (High-Temperature)	0.62 maximum gallons per rack (4.4 L) (Chemical)
Door-type Dishwashers	0.95 maximum gallons per rack (3.6 L) (High-Temperature)	1.16 maximum gallons per rack (2.6 L) (Chemical)
Undercounter-type Dishwashers	0.90 maximum gallons per rack (3.4 L) (High-Temperature)	0.98 maximum gallons per rack (3.7 L) (Chemical)
Combination Ovens	Consume no more than 10 gallons per hour (38 L/h) in the full operational mode.	
Commercial Pre-rinse Spray Valves (manufactured on or after January 1, 2006)	Function at equal to or less than 1.6 gallons per minute (0.10 L/s) at 60 psi (414 kPa) and <ul style="list-style-type: none"> • Be capable of cleaning 60 plates in an average time of not more than 30 seconds per plate. • Be equipped with an integral automatic shutoff. • Operate at static pressure of at least 30 psi (207 kPa) when designed for a flow rate of 1.3 gallons per minute (0.08 L/s) or less. 	

Source: Adapted from the [California Green Building Standards Code](#) (CALGreen) Tier 1 non-residential voluntary measures shown in Section A5.303.3. See the [California Plumbing Code](#) for definitions of each appliance/fixture type.

Acronyms:

L = liter

L/h = liters per hour

L/s = liters per second

psi = pounds per square inch (unit of pressure)

kPa = kilopascal (unit of pressure)

APPENDIX B

NTCD AND MTS RIDERSHIP

101

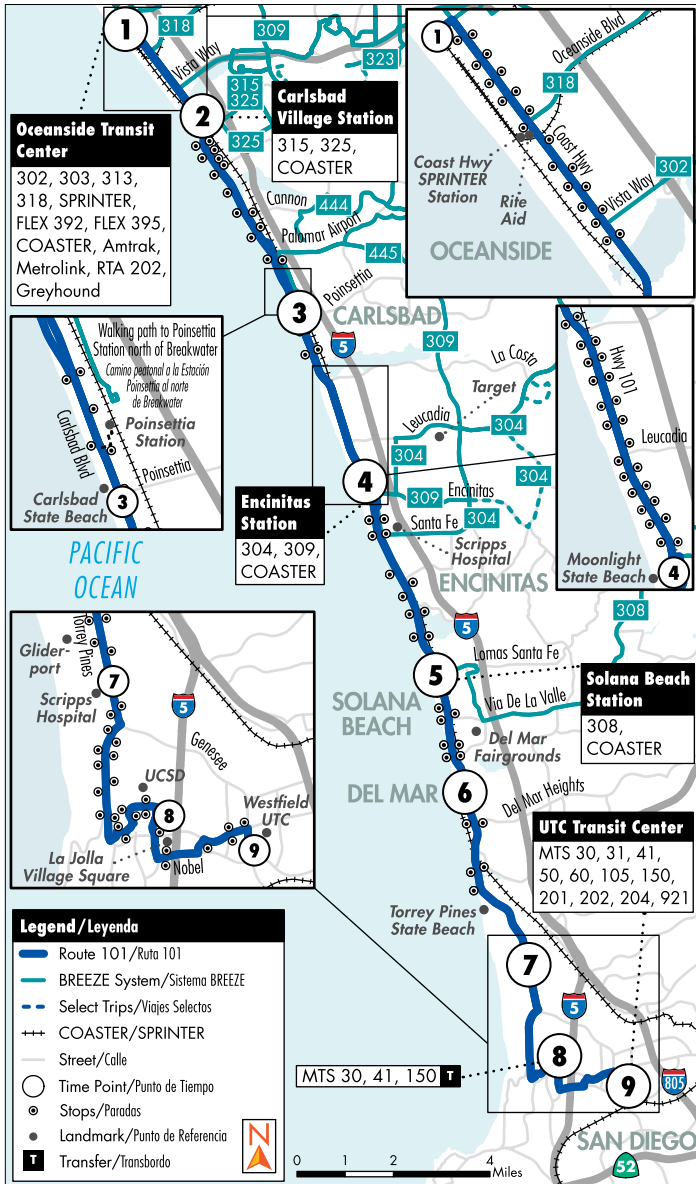
Oceanside to VA/UCSD/UTC via Highway 101

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



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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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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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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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

UCSD students may ride free on all NCTD BREEZE routes and SPRINTER service by showing a valid UCSD ID and qualifying media (U-PASS sticker within expiration date printed on sticker). UCSD Faculty and Staff may ride with an ECO Pass Regional Transit Pass on a Compass Card. This program is sponsored by UCSD's Transportation and Parking Services Department. Contact UCSD for more information.
 Los estudiantes de UCSD pueden viajar gratis en todas las rutas de NCTD BREEZE y del servicio SPRINTER al mostrar una identificación válida de UCSD con ciertas condiciones elegibles (Calcomanía U-PASS válida de acuerdo a la fecha de vencimiento impresa en la calcomanía). Facultad y personal de UCSD pueden viajar con un Pase de Tránsito Regional ECO Pass en una tarjeta Compass. Este programa está patrocinado por el Departamento de Servicios de Transporte y Estacionamientos de UCSD. Contacte a UCSD para obtener más información.

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.

PRONTO



Always get the best fare!

¡Obtén siempre la mejor tarifa!



Get the Card. Descarga la tarjeta.

Get the app. Descarga la aplicación.



RidePRONTO.com

619-595-5636

DIRECTORY / Directorio

MTS Information & Trip Planning MTS Información y planeo de viaje	511 or/ó (619) 233-3004
TTY/TDD (teletype for hearing impaired) Teletipo para sordos	(619) 234-5005 or/ó (888) 722-4889
InfoExpress (24-hour info via Touch-Tone phone) Información las 24 horas (vía teléfono de teclas)	(619) 685-4900
Customer Service / Suggestions Servicio al cliente / Sugerencias	(619) 557-4555
MTS Security MTS Seguridad	(619) 595-4960
Lost & Found Objetos extraviados	(619) 233-3004
Transit Store	(619) 234-1060 12th & Imperial Transit Center M-F 8am-5pm
For MTS online trip planning Planificación de viajes por Internet	sdmts.com

For more information on riding MTS services, pick up a Rider's Guide on a bus or at the Transit Store, or visit sdmts.com.
Para obtener más información sobre el uso de los servicios de MTS, recoja un 'Rider's Guide' en un autobús o en la Transit Store, o visita a sdmts.com.

Thank you for riding MTS! ¡Gracias por viajar con MTS!

COASTER CONNECTION

Sorrento Valley COASTER Station

972 Sorrento Mesa

973 Carroll Canyon

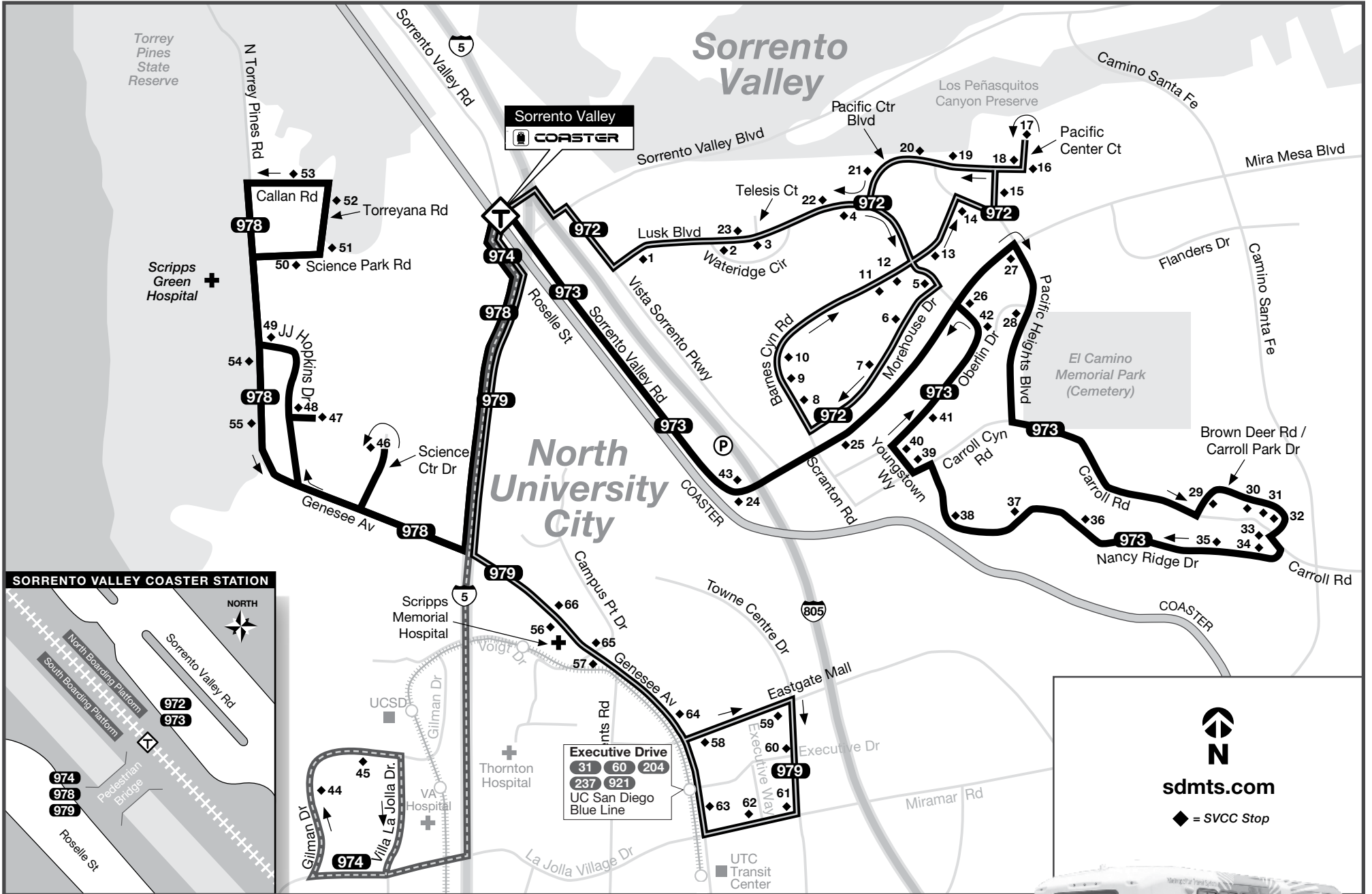
974 UC San Diego

978 Torrey Pines

979 University City



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



COASTER

Oceanside → San Diego

	Morning (AM)				Afternoon/Evening (PM)				
	5:56a	6:36a	7:16a	7:36a	3:36p	4:16p	4:36p	5:16p	6:16p
Oceanside	5:56a	6:36a	7:16a	7:36a	3:36p	4:16p	4:36p	5:16p	6:16p
Carlsbad Village	6:03	6:43	7:23	7:43	3:43	4:23	4:43	5:23	6:23
Carlsbad Poinsettia	6:09	6:49	7:29	7:49	3:49	4:29	4:49	5:29	6:29
Encinitas	6:15	6:55	7:35	7:55	3:55	4:35	4:55	5:35	6:35
Solana Beach	6:21	7:01	7:41	8:01	4:01	4:41	5:01	5:41	6:41
Sorrento Valley	6:30	7:10	7:50	8:10	4:10	4:50	5:10*	5:50	6:50
Old Town	6:51	7:31	8:11	8:31	4:31	5:11	5:31	6:11	7:11
San Diego	6:57	7:37	8:17	8:37	4:37	5:17	5:37	6:17	7:17

San Diego → Oceanside

	Morning (AM)		Afternoon/Evening (PM)				
	6:40a	7:40a	3:40p	4:20p	5:20p	5:40p	6:20p
San Diego	6:40a	7:40a	3:40p	4:20p	5:20p	5:40p	6:20p
Old Town	6:47	7:47	3:47	4:27	5:27	5:47	6:27
Sorrento Valley	7:09	8:09	4:09	4:49	5:49	6:09*	6:49
Solana Beach	7:19	8:19	4:19	4:59	5:59	6:19	6:59
Encinitas	7:25	8:25	4:25	5:05	6:05	6:25	7:05
Carlsbad Poinsettia	7:31	8:31	4:31	5:11	6:11	6:31	7:11
Carlsbad Village	7:37	8:37	4:37	5:17	6:17	6:37	7:17
Oceanside	7:42	8:42	4:42	5:22	6:22	6:42	7:22



ROUTE DEVIATIONS / Desviaciones de la Ruta

Effective October 25, 2021
SVCC services can provide a deviation of up to 3/4 of a mile off of the route for requesting passengers traveling to or from the Sorrento Valley COASTER Station during the corresponding hours that the SVCC service operates. SVCC route deviations are only provided in areas where ADA complementary paratransit service is not available on MTS Access or NCTD LIFT. Please call (877) 841-3278 for more information.

A partir de 25 de octubre de 2021
Los servicios de SVCC pueden desviarse hasta 3/4 de milla fuera de la ruta para pasajeros solicitantes que viajen hacia o desde la estación COASTER de Sorrento Valley durante las horas correspondientes en que opera el servicio de SVCC. Las desviaciones de la ruta de SVCC solo se proporcionan en áreas donde el servicio de paratransito complementario de la ADA no está disponible en MTS Access o NCTD LIFT. Llame al (877) 841-3278 para obtener más información.

COMMUTER TAX BENEFIT PROGRAM FOR EMPLOYERS / Programa de Asistencia de Tránsito del Empleador

Employers can provide their employees a payroll tax deduction for riding transit to work of up to \$125 per month. Employers benefit from this program through reduced payroll taxes and other business deductions. For more information about this and other free commuter services for employers visit iCommuteSD.com or call 511 and say "iCommute".

Los empleadores pueden proporcionar a sus empleados una deducción de los impuestos sobre nóminas de hasta \$125 dólares al mes por trasladarse al trabajo usando el transporte interurbano. Los empleadores sacan provecho de este programa mediante menores impuestos sobre nómina y otras deducciones empresariales. Para mayores informes sobre éste y otros servicios gratuitos para pasajeros interurbanos para los empleadores, favor de visitar iCommuteSD.com o llamar al 511 y decir 'iCommute'.

COASTER schedule shown is effective November 21, 2021 and is subject to change without notice. This may not reflect the most current schedule. Only trips that connect with the Sorrento Valley COASTER Connection are shown. Additional days and times of service can be found at www.gonctd.com. COASTER calendario que se muestra es a partir del 21 de noviembre de 2021 y está sujeto a cambios sin previo aviso. Esto puede no reflejar el calendario más actual. Sólo los viajes que conectan con el Sorrento Valley COASTER Connection se muestran. Días adicionales y las horas de servicio se pueden encontrar en www.gonctd.com.

* This COASTER Connection trip is operated by North County Transit District. Visit goNCTD.com for details. Este viaje COASTER Connection operado por North County Transit District. Visite a goNCTD.com para detalles.

Route 972 – Monday through Friday / lunes a viernes

Sorrento Mesa ➔ Sorrento Valley COASTER Station

	Morning (AM)				Afternoon/Evening (PM)					
	6:30a	7:10a	7:50a	8:16a	—	4:05p		5:05p		6:05p
◇ Sorrento Valley COASTER Station DEPART* 1 10525 Vista Sorrento Pkwy.					3:33p					
2 EB Lusk Blvd & Wateridge Circle (after intersection) 3 EB Lusk Blvd & Telesis Ct. (after intersection)										
4 Across from 6455 Lusk Blvd. 5 10225 Lusk Blvd. (electrical boxes)	6:37	7:17	7:57	8:23	3:34	4:14		5:14		6:14
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)	6:43	7:23	8:03	8:29	3:40	4:20	▲	5:20	▲	6:20
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) 23 WB Lusk Blvd & Telesis Ct. (after intersection)	6:51	7:31	8:11	8:37	3:48	4:28		5:28		6:28
◇ Sorrento Valley COASTER Station ARRIVE	6:57	7:37	8:16	—	3:57	4:37	4:58p	5:37	5:57p	6:37

Route 973 – Monday through Friday / lunes a viernes

Carroll Canyon ➔ Sorrento Valley COASTER Station

	Morning (AM)				Afternoon/Evening (PM)					
	6:30a	7:10a	7:50a	8:19a	—	4:06p		5:06p		6:06p
◇ Sorrento Valley COASTER Station DEPART* 24 10240 Sorrento Valley Road					3:33p					
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) 28 Pacific Heights Blvd. & Cornerstone Ct. (after intersection)	6:38	7:18	7:58	8:27	3:34	4:14		5:14		6:14
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) 34 6868 Nancy Ridge Drive	6:47	7:27	8:06	8:36	3:43	4:23	▲	5:23	▲	6:23
35 6650 Nancy Ridge Drive 36 6310 Nancy Ridge Drive (electrical boxes in front of Nancy Ridge Technology Park)										
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)	6:51	7:31	8:10	8:40	3:47	4:27		5:27		6:27
43 Across street from 10260 Sorrento Valley Rd. ◇ Sorrento Valley COASTER Station ARRIVE	7:00	7:40	8:19	—	3:57	4:37	4:58p	5:37	5:57p	6:37

Route 974 – Monday through Friday / lunes a viernes

UC San Diego ➔ Sorrento Valley COASTER Station

	Morning (AM)				Afternoon/Evening (PM)					
	6:30a	7:10a	7:50a	8:12a	—	4:11p		5:11p		6:12p
◇ Sorrento Valley COASTER Station DEPART* 44 Gilman Drive & Eucalyptus Grove Lane										
45 Gilman Transit Center (UCSD) ◇ Sorrento Valley COASTER Station ARRIVE	6:39	7:20	8:00	8:22	3:44p	4:23	▲	5:23	▲	6:24
	6:50	7:32	8:12	—	3:57	4:37	4:58p	5:37	5:57p	6:37

Route 978 – Monday through Friday / lunes a viernes

Torrey Pines ➔ Sorrento Valley COASTER Station

	Morning (AM)				Afternoon/Evening (PM)					
	6:30a	7:10a	7:50a	8:19a	—	4:10p		5:07p		6:06p
◇ Sorrento Valley COASTER Station DEPART* 46 10350 Science Center Drive	6:36	7:16	7:56	8:25	3:38p	4:16		5:15		6:16
47 General Atomics Court (at end of turnaround) 48 General Atomics Court & John Hopkins Drive (before turn)										
49 John Hopkins Drive & North Torrey Pines Road (before turn) 50 3033 Science Park Road										
51 Torreyana Rd. & Road to the Cure (before intersection) 52 Torreyana Rd. & Callan Road (before turn)	6:43	7:23	8:02	8:32	3:45	4:23	▲	5:22	▲	6:23
53 11099 Callan Road 54 10666 North Torrey Pines Road	6:46	7:26	8:05	8:35	3:48	4:26		5:25		6:26
55 3366 North Torrey Pines Road ◇ Sorrento Valley COASTER Station ARRIVE	7:04	7:42	8:19	—	3:57	4:37	4:58p	5:37	5:57p	6:37

Route 979 – Monday through Friday / lunes a viernes

University City ➔ Sorrento Valley COASTER Station

	Morning (AM)				Afternoon/Evening (PM)					
	6:30a	7:10a	7:50a	8:14a	—	4:08p		5:08p		6:10p
◇ Sorrento Valley COASTER Station DEPART* 56 SB Genesee Ave. & Scripps Driveway (after intersection)					3:37p					
57 SB Genesee Ave. & Campus Point Drive (after intersection) 58 EB Eastgate Mall & Easter Way (before intersection)	6:37	7:17	7:57	8:21						
59 EB Eastgate Mall & Towne Centre Way (before turn) 60 Towne Centre Way & Executive Drive (before turn)										
61 La Jolla Village Dr. & Towne Centre Dr. (after turn) 62 La Jolla Village Dr. & Executive Way	6:43	7:23	8:03	8:27	3:43	4:21	▲	5:21	▲	6:23
63 NB Genesee Av. @ Executive Dr. Trolley Station (Blue Line Transfer) 64 NB Genesee Ave. & Eastgate Mall (after intersection)										
65 NB Genesee Ave. & Campus Point Drive (after intersection) 66 NB Genesee Ave. & Scripps Driveway (after intersection)										
◇ Sorrento Valley COASTER Station ARRIVE	6:54	7:34	8:14	—	3:57	4:37	4:58p	5:37	5:57p	6:37

Routes 972, 973, 974, 978, and 979 do not operate on weekends or on the observation of the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas
Las rutas 972, 973, 974, 978 y 979 no ofrecen servicio durante el fin de semana ó durante los siguientes días festivos: Año Nuevo, Memorial Day, Día de la Independencia (E.E.U.U.), Labor Day, Día de Acción de Gracias, y Navidad

* All morning departures from Sorrento Valley COASTER Station wait for the arriving southbound train. Morning buses may depart the station earlier than time shown, once all passengers have transferred from the designated COASTER train. Afternoon departures from Sorrento Valley COASTER Station may leave up to ten minutes earlier than shown.

Todas las salidas de Sorrento Valley COASTER Station en la mañana esperan la llegada del tren hacia el sur. En la mañana, cuando todos los pasajeros del COASTER se han trasladado a los autobuses, los autobuses podrán salir de la estación, aunque sea unos minutos antes del horario. En la tarde, las salidas de Sorrento Valley COASTER Station pueden salir hasta diez minutos antes de lo mostrado.

▲ Trip is operated by North County Transit District. Visit goNCTD.com for details.
Este viaje operado por North County Transit District. Visite a goNCTD.com para detalles.

The schedules and other information shown in this timetable are subject to change. MTS does not assume responsibility for errors in timetables nor for any inconvenience caused by delayed buses. / Los horarios e información que se indican en este itinerario están sujetos a cambios. MTS no asume responsabilidad por errores en los itinerarios, ni por ningún perjuicio que se origine por los autobuses demorados.

Exact fare, please Favor de pagar la cantidad exacta

Fares Tarifas	Adult Adulto	Senior/Disabled/ Medicare/Youth* Personas Mayores/con Discapacidades/Medicare/Jóvenes*
ONE-WAY FARES Tarifas Sencillas	\$2.50	\$1.25
EARNED DAY PASS Pase del Día Ganado	\$6.00	\$3.00
MONTH PASS Pase mensual	\$72.00	\$23.00

Load money into your PRONTO account to earn Day Passes and Month Passes. Tap your PRONTO card (\$2) or scan your PRONTO mobile app (free) to ride. Carga dinero a tu cuenta de PRONTO para ganar Pases del Día y Pases Mensuales. Toca tu tarjeta PRONTO (\$2) o escanea tu aplicación móvil PRONTO (gratis) para viajar.

• One-ways with PRONTO receive free transfers for two hours. No free transfers for cash. Los viajes de ida con PRONTO reciben transbordos gratuitos por dos horas. No se permiten transbordos gratuitos con pagos en efectivo.

• Day Passes not sold in advance. Earned with PRONTO. Los pases diarios no se venden por adelantado. Se obtienen con PRONTO.

• A month pass can be purchased in advanced or earned with PRONTO. Good from first day to last day of the month. El Pase Mensual se puede comprar por adelantado o se obtiene mientras viaja con PRONTO. Válido desde el primer día hasta el último día del mes.

*Proof of eligibility required. Senior Eligibility: Age 65+ or born on or before September 1, 1959. Youth Eligibility: Ages 6-18
*Se requiere verificación de elegibilidad. Elegibilidad para Personas Mayores: Edad 65+ o nacido en o antes del 1 de septiembre, 1959. Elegibilidad para Jóvenes: edades 6-18

For more information, visit: / Para más información, visite: sdmts.com/fares

DIRECTORY / Directorio

MTS Information & Trip Planning MTS Información y planeo de viaje	511 or/ó (619) 233-3004
TTY/TDD (teletype for hearing impaired) Teletipo para sordos	(619) 234-5005 or/ó (888) 722-4889
InfoExpress (24-hour info via Touch-Tone phone) Información las 24 horas (via teléfono de teclas)	(619) 685-4900
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Thank you for riding MTS! ¡Gracias por viajar con MTS!

Effective NOVEMBER 21, 2021

985

UC San Diego - N. Torrey Pines
via North Torrey Pines Road

DESTINATIONS

- Scripps Green Hospital
- UC San Diego North Campus



TROLLEY CONNECTIONS

- UC San Diego Central Campus



11/21

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Route Alerts, Updated Schedules,
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Route 985 – Monday through Friday / Lunes a viernes

UC San Diego → N. Torrey Pines → UC San Diego (morning)

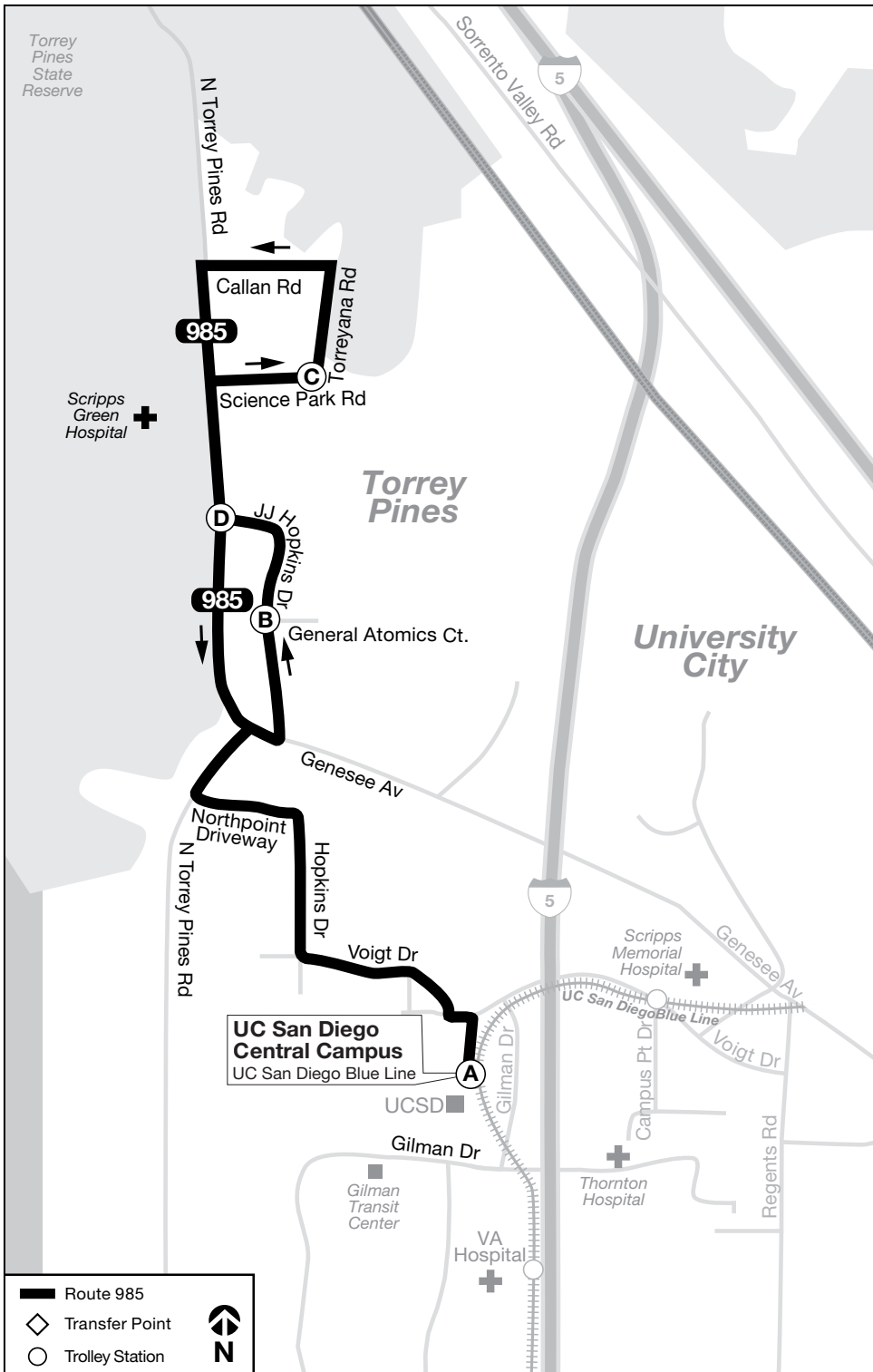
(A) UC San Diego Central Campus Station DEPART	(B) John Jay Hopkins Dr. & General Atomics Ct.	(C) Torreyana Rd. & Science Park Rd	(D) N. Torrey Pines Rd. & John J. Hopkins Dr.	(A) UC San Diego Central Campus Station ARRIVE
6:27a	6:33a	6:37a	6:41a	6:51a
6:42	6:48	6:52	6:56	7:06
6:57	7:03	7:07	7:11	7:21
7:12	7:18	7:22	7:26	7:36
7:27	7:33	7:37	7:41	7:51
7:42	7:48	7:52	7:56	8:06
7:57	8:03	8:07	8:11	8:21
8:12	8:18	8:22	8:26	8:36
8:27	8:33	8:37	8:41	8:51
8:42	8:48	8:52	8:56	9:06
8:57	9:03	9:07	9:11	—
9:12	9:18	9:22	9:26	—

Route 985 does not operate on weekends or on the following holidays and observed holidays
La ruta 985 no ofrece servicio durante el fin de semana ó durante los siguientes días festivos y feriados observados

New Year's Day, Presidents' Day,
Memorial Day, Independence Day,
Labor Day, Thanksgiving, Christmas

UC San Diego → N. Torrey Pines → UC San Diego (afternoon)

(A) UC San Diego Central Campus Station DEPART	(B) John Jay Hopkins Dr. & General Atomics Ct.	(C) Torreyana Rd. & Science Park Rd	(D) N. Torrey Pines Rd. & John J. Hopkins Dr.	(A) UC San Diego Central Campus Station ARRIVE
—	2:59p	3:03p	3:07p	3:17p
—	3:14	3:18	3:22	3:32
3:23p	3:29	3:33	3:37	3:47
3:38	3:44	3:48	3:52	4:02
3:53	3:59	4:03	4:07	4:17
4:08	4:14	4:18	4:22	4:32
4:23	4:29	4:33	4:37	4:47
4:38	4:44	4:48	4:52	5:02
4:53	4:59	5:03	5:07	5:17
5:08	5:14	5:18	5:22	5:32
5:23	5:29	5:33	5:37	5:47
5:38	5:44	5:48	5:52	6:02
5:53	5:59	6:03	6:07	6:17



PRONTO



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Get the Card.

Descarga la tarjeta.

Trolley ticket machines (cash, credit or debit)

Máquinas expendedoras de boletos (efectivo, tarjeta de crédito o debito)

Retail outlets

Establecimientos comerciales

Transit Store: 12th & Imperial Transit Center

Tienda Transit Store: Centro de Transporte 12th & Imperial

Get the app.

Descarga la aplicación.



RidePRONTO.com

619-595-5636

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

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APPENDIX C

EXISTING TRAFFIC COUNTS

ADT		
Existing Traffic Counts April, 2021		
#	Roadway Segment	Two-way ADT
1	N. Torrey Pines Road between N.U. System Dwy and North Project Dwy	9,336
2	N. Torrey Pines Road between N.U. System Dwy and Callan Road	9,415
3	N. Torrey Pines Road between Callan Road and Science Park Road	13,796
OAS Existing Traffic Counts October, 2019		
#	Roadway Segment	Two-way ADT
1	N. Torrey Pines Road between N.U. System Dwy and North Project Dwy	-
2	N. Torrey Pines Road between N.U. System Dwy and Callan Road	-
3	N. Torrey Pines Road between Callan Road and Science Park Road	15,387
Percent Change		
#	Roadway Segment	Two-way ADT
1	N. Torrey Pines Road between N.U. System Dwy and North Project Dwy	N/A
2	N. Torrey Pines Road between N.U. System Dwy and Callan Road	N/A
3	N. Torrey Pines Road between Callan Road and Science Park Road	12%
Increased 12%		
#	Roadway Segment	Two-way ADT
1	N. Torrey Pines Road between N.U. System Dwy and North Project Dwy	10,456
2	N. Torrey Pines Road between N.U. System Dwy and Callan Road	10,545
3	N. Torrey Pines Road between Callan Road and Science Park Road	*
National University Trip Generation/Distribution		
#	Roadway Segment	Two-way ADT
1	N. Torrey Pines Road between N.U. System Dwy and North Project Dwy	267
2	N. Torrey Pines Road between N.U. System Dwy and Callan Road	1,070
3	N. Torrey Pines Road between Callan Road and Science Park Road	*
Total Existing Base Volumes		
#	Roadway Segment	Two-way ADT
1	N. Torrey Pines Road between N.U. System Dwy and North Project Dwy	10,723
2	N. Torrey Pines Road between N.U. System Dwy and Callan Road	11,615
3	N. Torrey Pines Road between Callan Road and Science Park Road	15,387**

* OAS Existing 2019 Traffic Counts account for pre-COVID National University Trips

** OAS Existing 2019 Traffic Counts used in analysis

AM PEAK HOUR VOLUMES

Existing Traffic Counts April, 2021

#	Intersection	Eastbound				Westbound				Northbound				Southbound			
		U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
1	N. Torrey Pines Road/ N.U. System Dwy – Project Dwy	0	0	0	0	0	0	0	7	0	0	200	11	0	2	368	0
2	N. Torrey Pines Road/ Torrey Pines Science Park	0	0	0	0	0	8	0	1	0	0	205	55	0	17	352	0
13	N. Torrey Pines Road/North Project Dwy	0	0	0	0	0	0	0	0	0	0	207	0	0	0	370	0
14	N. Torrey Pines Road/South Project Dwy	0	0	0	0	0	0	0	0	0	0	206	0	0	0	368	0

Increased 12%

#	Intersection	Eastbound				Westbound				Northbound				Southbound			
		U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
1	N. Torrey Pines Road/ N.U. System Dwy – Project Dwy	1	0	1	0	0	0	0	8	0	1	224	12	0	2	412	1
2	N. Torrey Pines Road/ Torrey Pines Science Park	0	0	0	0	0	9	0	1	0	0	230	62	0	19	394	0
13	N. Torrey Pines Road/North Project Dwy	0	0	0	0	0	0	0	0	0	0	232	0	0	0	414	0
14	N. Torrey Pines Road/South Project Dwy	0	0	0	0	0	0	0	0	0	0	231	0	0	0	412	0

National University Trip Generation/Distribution

#	Intersection	Eastbound				Westbound				Northbound				Southbound			
		U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
1	N. Torrey Pines Road/ N.U. System Dwy – Project Dwy	0	0	0	0	0	17	0	4	0	0	0	144	0	36	0	0
2	N. Torrey Pines Road/ Torrey Pines Science Park	0	0	0	0	0	0	0	0	0	0	144	0	0	0	17	0
13	N. Torrey Pines Road/North Project Dwy	0	0	0	0	0	0	0	0	0	0	4	0	0	0	36	0
14	N. Torrey Pines Road/South Project Dwy	0	0	0	0	0	0	0	0	0	0	144	0	0	0	17	0

Total Existing Base Volumes

#	Intersection	Eastbound				Westbound				Northbound				Southbound			
		U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
1	N. Torrey Pines Road/ N.U. System Dwy – Project Dwy	1	0	1	0	0	17	0	12	0	1	224	156	0	38	412	1
2	N. Torrey Pines Road/ Torrey Pines Science Park	0	0	0	0	0	9	0	1	0	0	374	62	0	19	411	0
13	N. Torrey Pines Road/North Project Dwy	0	0	0	0	0	0	0	0	0	0	236	0	0	0	451	0
14	N. Torrey Pines Road/South Project Dwy	0	0	0	0	0	0	0	0	0	0	375	0	0	0	429	0

PM PEAK HOUR VOLUMES

Existing Traffic Counts April, 2021

#	Intersection	Eastbound				Westbound				Northbound				Southbound			
		U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
1	N. Torrey Pines Road/ N.U. System Dwy – Project Dwy	0	0	0	0	0	0	0	5	0	0	529	5	0	0	305	0
2	N. Torrey Pines Road/ Torrey Pines Science Park	0	0	0	0	0	49	0	20	0	0	514	7	0	2	303	0
13	N. Torrey Pines Road/North Project Dwy	0	0	0	0	0	0	0	0	0	0	534	0	0	0	305	0
14	N. Torrey Pines Road/South Project Dwy	0	0	0	0	0	0	0	0	0	0	534	0	0	0	305	0

Increased 12%

#	Intersection	Eastbound				Westbound				Northbound				Southbound			
		U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
1	N. Torrey Pines Road/ N.U. System Dwy – Project Dwy	1	0	1	0	0	0	0	6	0	1	592	6	0	0	342	1
2	N. Torrey Pines Road/ Torrey Pines Science Park	0	0	0	0	0	55	0	22	0	0	576	8	0	2	339	0
13	N. Torrey Pines Road/North Project Dwy	0	0	0	0	0	0	0	0	0	0	598	0	0	0	342	0
14	N. Torrey Pines Road/South Project Dwy	0	0	0	0	0	0	0	0	0	0	598	0	0	0	342	0

National University Trip Generation/Distribution

#	Intersection	Eastbound				Westbound				Northbound				Southbound			
		U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
1	N. Torrey Pines Road/ N.U. System Dwy – Project Dwy	0	0	0	0	0	144	0	36	0	0	0	17	0	4	0	0
2	N. Torrey Pines Road/ Torrey Pines Science Park	0	0	0	0	0	0	0	0	0	0	17	0	0	0	144	0
13	N. Torrey Pines Road/North Project Dwy	0	0	0	0	0	0	0	0	0	0	36	0	0	0	4	0
14	N. Torrey Pines Road/South Project Dwy	0	0	0	0	0	0	0	0	0	0	17	0	0	0	144	0

Total Existing Base Volumes

#	Intersection	Eastbound				Westbound				Northbound				Southbound			
		U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
1	N. Torrey Pines Road/ N.U. System Dwy – Project Dwy	1	0	1	0	0	144	0	42	0	1	592	23	0	4	342	1
2	N. Torrey Pines Road/ Torrey Pines Science Park	0	0	0	0	0	55	0	22	0	0	593	8	0	2	483	0
13	N. Torrey Pines Road/North Project Dwy	0	0	0	0	0	0	0	0	0	0	634	0	0	0	347	0
14	N. Torrey Pines Road/South Project Dwy	0	0	0	0	0	0	0	0	0	0	615	0	0	0	486	0

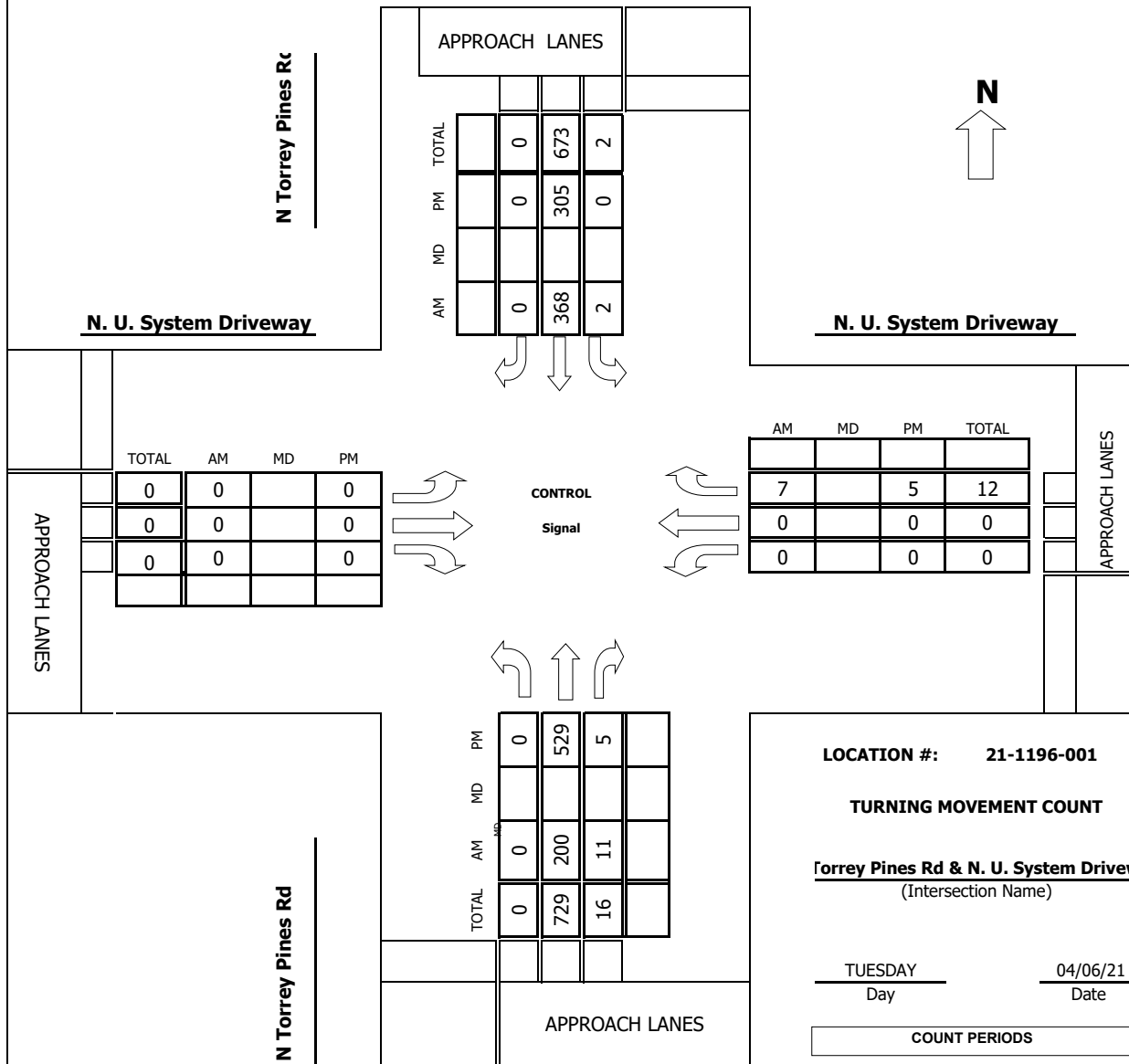
Intersection Turning Movement

Prepared by:



Project #: 21-1196-001

TMC SUMMARY OF N Torrey Pines Rd & N. U. System Driveway



N. U. System Driveway

APPROACH LANES				
	AM	MD	PM	TOTAL
	0	368	2	370

	AM	MD	PM	TOTAL
	0	0	0	0
	0	305	0	305
	0	673	2	675

N. U. System Driveway

APPROACH LANES				
	AM	MD	PM	TOTAL
	7	0	0	7
	0	0	0	0
	0	5	0	5

APPROACH LANES

	TOTAL	AM	MD	PM
	0	0	0	0
	0	0	0	0
	0	0	0	0

	TOTAL	AM	MD	PM
	0	0	0	0
	0	200	11	5
	0	729	16	529

APPROACH LANES

	AM	MD	PM	TOTAL
	7	0	0	7
	0	0	0	0
	0	5	0	5

N Torrey Pines Rd

APPROACH LANES				
	TOTAL	AM	MD	PM
	0	0	0	0
	0	200	11	5
	0	729	16	529

LOCATION #: 21-1196-001

TURNING MOVEMENT COUNT

Torrey Pines Rd & N. U. System Driveway
(Intersection Name)

TUESDAY 04/06/21
Day Date

COUNT PERIODS

AM	700AM - 900AM
NOON	-
PM	400PM - 600PM

AM PEAK HOUR 800 AM

NOON PEAK HOUR _____

PM PEAK HOUR 400 PM

Intersection Turning Movement Prepared by:



FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745



N-S STREET: **N Torrey Pines Rd** DATE: **04/06/21** LOCATION: **San Diego**
 E-W STREET: **N. U. System Driveway** DAY: **TUESDAY** PROJECT# **21-1196-001**

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	3	0	1	2	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	31	0	0	49	0	0	0	0	0	0	1	81
7:15 AM	0	26	1	0	58	0	0	0	0	0	0	1	86
7:30 AM	0	33	2	0	79	0	0	0	0	0	0	1	115
7:45 AM	0	34	1	0	100	0	0	0	0	0	0	2	137
8:00 AM	0	51	1	0	87	0	0	0	0	0	0	1	140
8:15 AM	0	34	1	2	89	0	0	0	0	0	0	2	128
8:30 AM	0	58	5	0	103	0	0	0	0	0	0	2	168
8:45 AM	0	57	4	0	89	0	0	0	0	0	0	2	152
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	0	324	15	2	654	0	0	0	0	0	0	12	1007
Approach %	0.00	95.58	4.42	0.30	99.70	0.00	####	####	####	0.00	0.00	100.00	
App/Depart	339	/	336	656	/	654	0	/	17	12	/	0	

AM Peak Hr Begins at: 800 AM

PEAK

Volumes	0	200	11	2	368	0	0	0	0	0	0	7	588
Approach %	0.00	94.79	5.21	0.54	99.46	0.00	####	####	####	0.00	0.00	100.00	

PEAK HR.

FACTOR:	0.837	0.898	0.000	0.875	0.875
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CONTROL: **Signal**
 COMMENT 1:
 GPS: **32.910215, -117.244505**

Intersection Turning Movement



FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745



N-S STREET: **N Torrey Pines Rd** DATE: **04/06/21** LOCATION: **San Diego**
 0
 E-W STREET: **N. U. System Driveway** DAY: **TUESDAY** PROJECT# **21-1196-001**

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	3	0	1	2	0	0	1	0	0	1	0	

1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	0	121	3	0	87	0	0	0	0	0	0	0	211
4:15 PM	0	129	2	0	76	0	0	0	0	0	0	4	211
4:30 PM	0	143	0	0	82	0	0	0	0	0	0	1	226
4:45 PM	0	136	0	0	60	0	0	0	0	0	0	0	196
5:00 PM	0	120	0	0	79	0	0	0	0	0	0	0	199
5:15 PM	0	109	0	0	76	0	0	0	0	0	0	0	185
5:30 PM	0	113	0	0	74	0	0	0	0	0	0	0	187
5:45 PM	0	108	0	0	49	0	0	0	0	0	0	0	157
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	0	979	5	0	583	0	0	0	0	0	0	5	1572
Approach %	0.00	99.49	0.51	0.00	100.00	0.00	####	####	####	0.00	0.00	100.00	
App/Depart	984	/	984	583	/	583	0	/	5	5	/	0	

PM Peak Hr Begins at: 400 PM

PEAK	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	0	529	5	0	305	0	0	0	0	0	0	5	844
Approach %	0.00	99.06	0.94	0.00	100.00	0.00	####	####	####	0.00	0.00	100.00	

PEAK HR. FACTOR:	0.934	0.876	0.000	0.313	0.934
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CONTROL: **Signal**
 COMMENT 1: **0**
 GPS: **32.910215, -117.244505**

Pedestrian & Bicycle Study

N-S STREET: N Torrey Pines Rd
E-W STREET: N. U. System Driveway

Date: 04/06/21
Day: TUESDAY

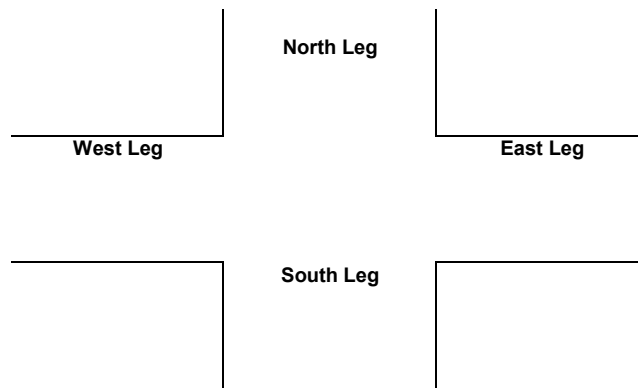
City: San Diego
Project #: 21-1196-001

	PEDESTRIANS			
	N-LEG	S-LEG	E-LEG	W-LEG
7:00 AM	0	0	0	2
7:15 AM	0	0	0	1
7:30 AM	0	0	0	3
7:45 AM	0	0	0	2
8:00 AM	0	0	0	1
8:15 AM	0	0	0	2
8:30 AM	0	0	0	3
8:45 AM	0	0	0	1
TOTAL	0	0	0	15

	BICYCLES			
	N-LEG	S-LEG	E-LEG	W-LEG
7:00 AM	0	0	1	0
7:15 AM	0	0	1	1
7:30 AM	0	0	2	2
7:45 AM	0	0	2	1
8:00 AM	0	0	3	2
8:15 AM	0	0	4	3
8:30 AM	0	0	5	3
8:45 AM	0	0	3	2
TOTAL	0	0	21	14

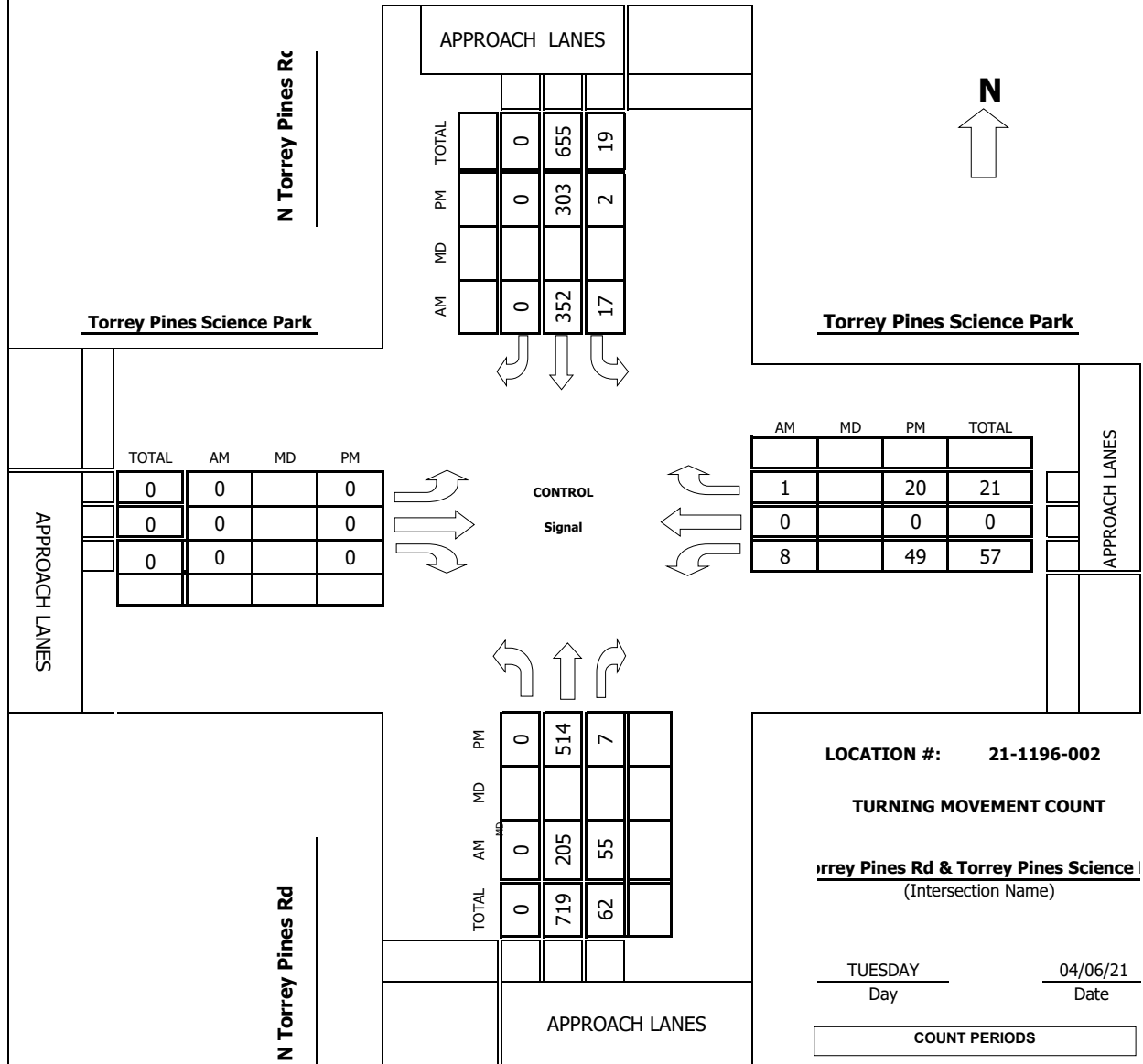
	PEDESTRIANS			
	N-LEG	S-LEG	E-LEG	W-LEG
4:00 PM	0	0	2	0
4:15 PM	0	0	5	1
4:30 PM	0	0	2	5
4:45 PM	0	0	3	1
5:00 PM	0	0	13	5
5:15 PM	0	0	11	0
5:30 PM	0	0	14	0
5:45 PM	0	0	4	0
TOTAL	0	0	54	12

	BICYCLES			
	N-LEG	S-LEG	E-LEG	W-LEG
4:00 PM	0	0	4	3
4:15 PM	0	0	5	2
4:30 PM	0	0	2	2
4:45 PM	0	0	3	5
5:00 PM	0	0	3	5
5:15 PM	0	0	1	1
5:30 PM	0	0	3	1
5:45 PM	0	0	1	0
TOTAL	0	0	22	19



Project #: 21-1196-002

TMC SUMMARY OF N Torrey Pines Rd & Torrey Pines Science Park



LOCATION #: 21-1196-002

TURNING MOVEMENT COUNT

Torrey Pines Rd & Torrey Pines Science
 (Intersection Name)

TUESDAY 04/06/21
 Day Date

COUNT PERIODS	
AM	700AM - 900AM
NOON	-
PM	400PM - 600PM

AM PEAK HOUR 800 AM
 NOON PEAK HOUR _____
 PM PEAK HOUR 400 PM

Intersection Turning Movement Prepared by:



FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745



N-S STREET: **N Torrey Pines Rd** DATE: **04/06/21** LOCATION: **San Diego**
 E-W STREET: **Torrey Pines Science Park** DAY: **TUESDAY** PROJECT# **21-1196-002**

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	3	0	1	2	0	0	0	0	1	0	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	28	3	1	50	0	0	0	0	1	0	0	83
7:15 AM	0	29	4	2	55	0	0	0	0	1	0	0	91
7:30 AM	0	33	10	5	76	0	0	0	0	1	0	0	125
7:45 AM	0	34	10	3	98	0	0	0	0	3	0	0	148
8:00 AM	0	50	15	6	82	0	0	0	0	3	0	0	156
8:15 AM	0	35	9	2	85	0	0	0	0	3	0	1	135
8:30 AM	0	61	22	6	98	0	0	0	0	0	0	0	187
8:45 AM	0	59	9	3	87	0	0	0	0	2	0	0	160
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	0	329	82	28	631	0	0	0	0	14	0	1	1085
Approach %	0.00	80.05	19.95	4.25	95.75	0.00	####	####	####	93.33	0.00	6.67	
App/Depart	411	/	330	659	/	645	0	/	110	15	/	0	

AM Peak Hr Begins at: 800 AM

PEAK

Volumes	0	205	55	17	352	0	0	0	0	8	0	1	638
Approach %	0.00	78.85	21.15	4.61	95.39	0.00	####	####	####	88.89	0.00	11.11	

PEAK HR.

FACTOR:	0.783	0.887	0.000	0.563	0.853
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CONTROL: **Signal**
 COMMENT 1:
 GPS: **32.907272, -117.243871**



Pedestrian & Bicycle Study

N-S STREET: N Torrey Pines Rd
E-W STREET: Torrey Pines Science Park

Date: 04/06/21
Day: TUESDAY

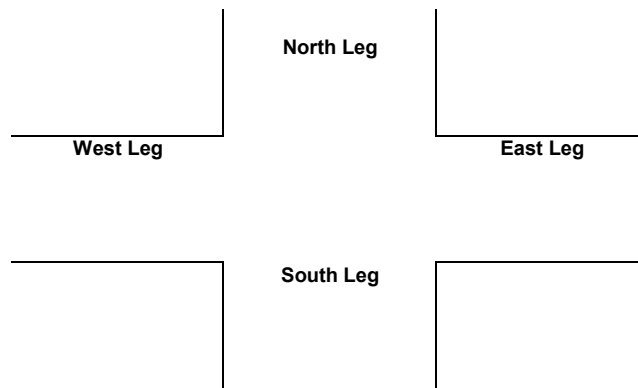
City: San Diego
Project #: 21-1196-002

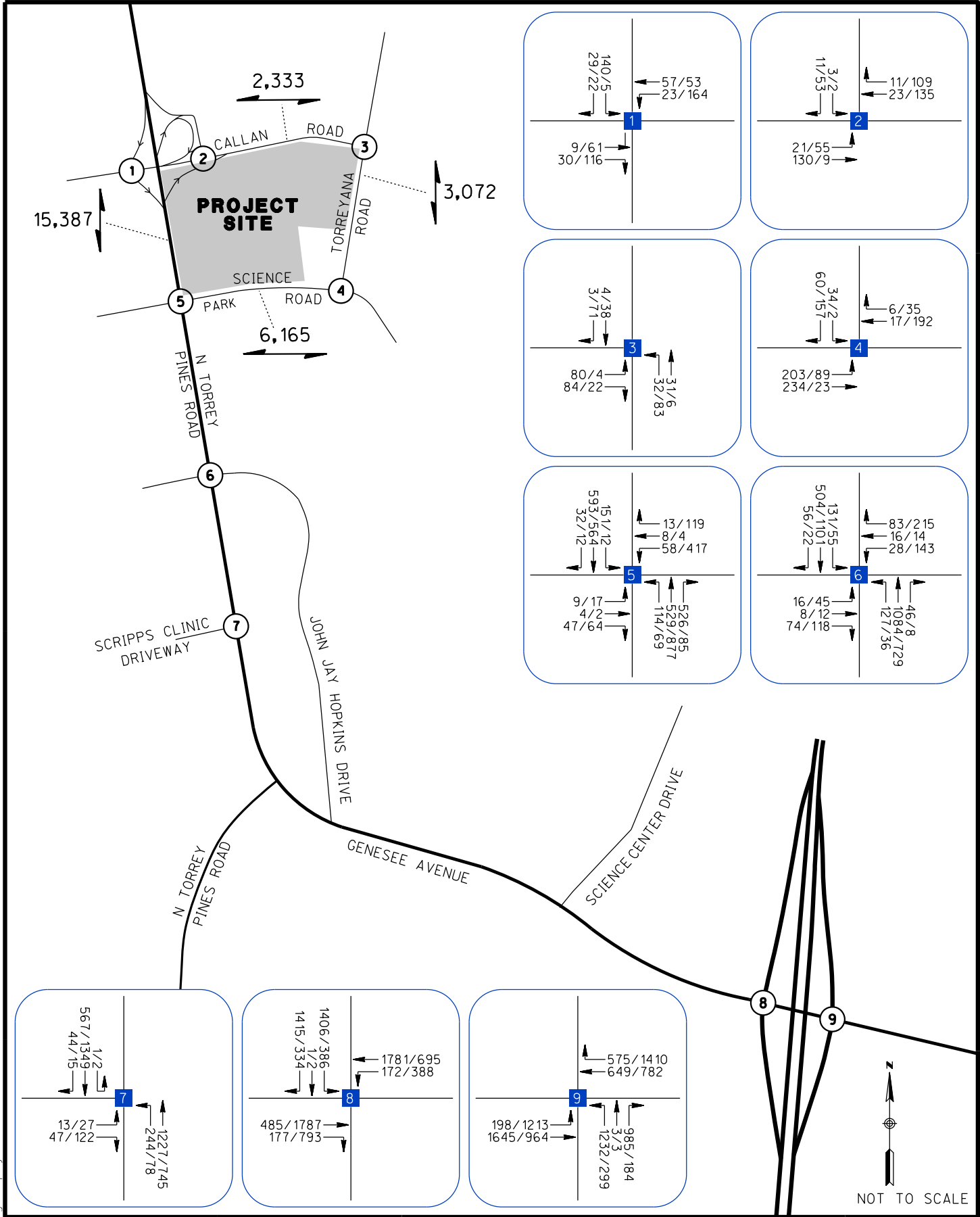
	PEDESTRIANS			
	N-LEG	S-LEG	E-LEG	W-LEG
7:00 AM	1	1	0	3
7:15 AM	0	0	0	5
7:30 AM	1	1	0	9
7:45 AM	0	0	0	8
8:00 AM	0	0	0	5
8:15 AM	1	0	1	2
8:30 AM	2	0	2	8
8:45 AM	1	0	0	1
TOTAL	6	2	3	41

	BICYCLES			
	N-LEG	S-LEG	E-LEG	W-LEG
7:00 AM	0	0	0	0
7:15 AM	0	0	2	2
7:30 AM	0	0	10	9
7:45 AM	0	0	1	5
8:00 AM	0	0	3	3
8:15 AM	0	0	3	4
8:30 AM	0	0	9	5
8:45 AM	0	0	7	1
TOTAL	0	0	35	29

	PEDESTRIANS			
	N-LEG	S-LEG	E-LEG	W-LEG
4:00 PM	0	0	3	12
4:15 PM	2	0	0	17
4:30 PM	0	0	0	7
4:45 PM	0	0	1	2
5:00 PM	2	0	0	11
5:15 PM	3	0	2	9
5:30 PM	1	0	0	1
5:45 PM	2	0	1	5
TOTAL	10	0	7	64

	BICYCLES			
	N-LEG	S-LEG	E-LEG	W-LEG
4:00 PM	0	0	4	0
4:15 PM	0	0	2	4
4:30 PM	0	0	2	2
4:45 PM	0	0	1	5
5:00 PM	0	0	5	2
5:15 PM	0	0	1	4
5:30 PM	0	0	1	3
5:45 PM	0	0	0	0
TOTAL	0	0	16	20





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EXHIBIT 5
EXISTING TRAFFIC VOLUMES
ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

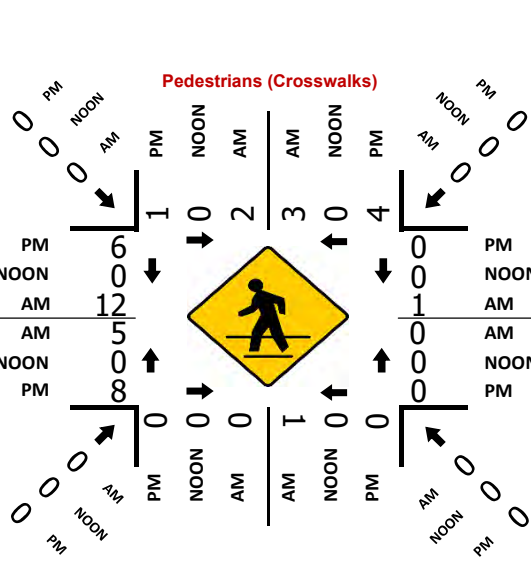
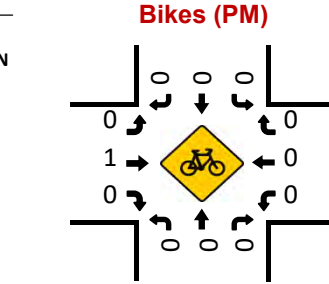
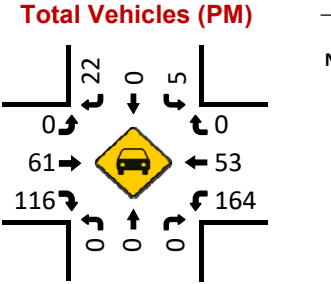
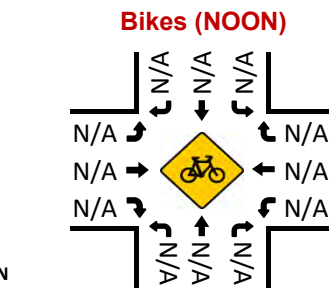
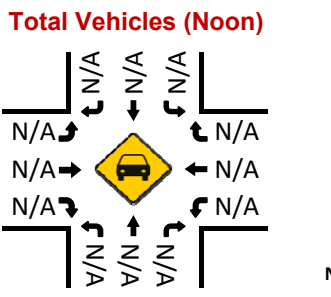
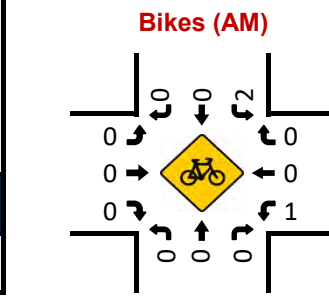
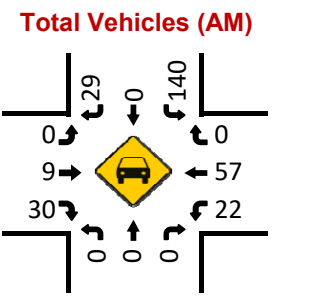
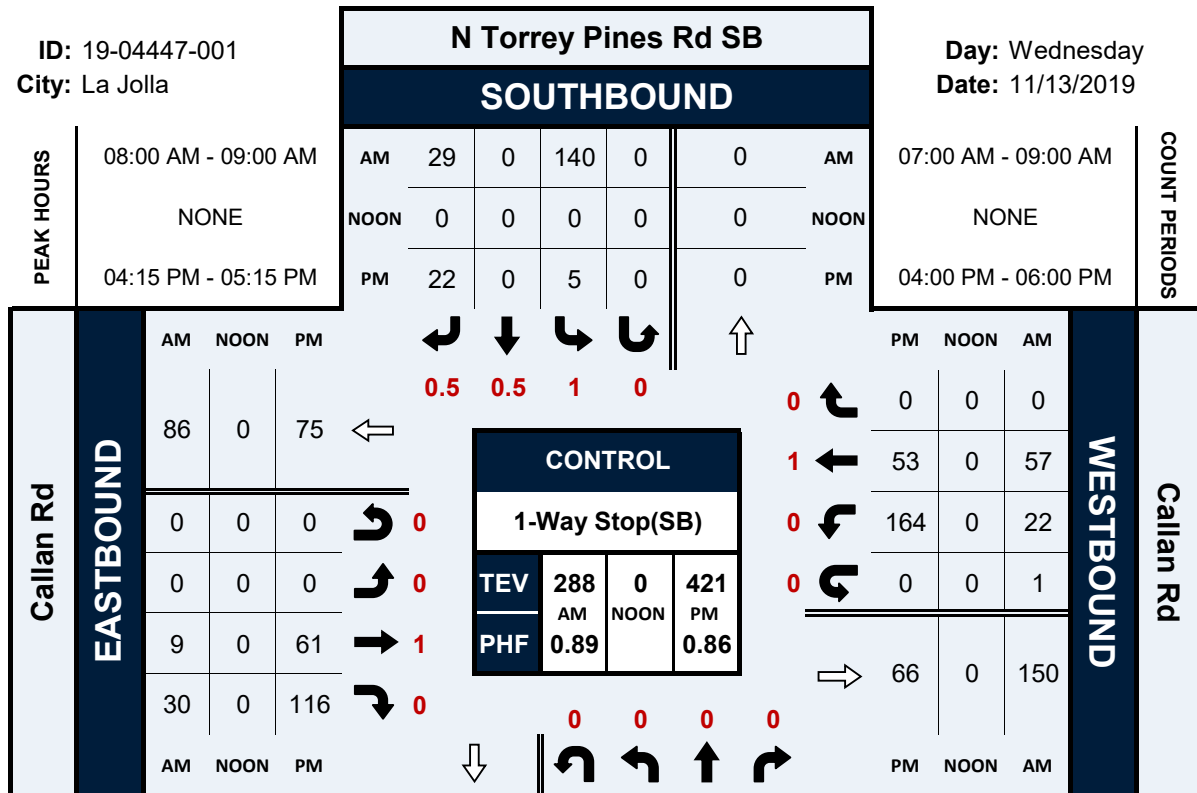
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 10-JUN-2021 16:51

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

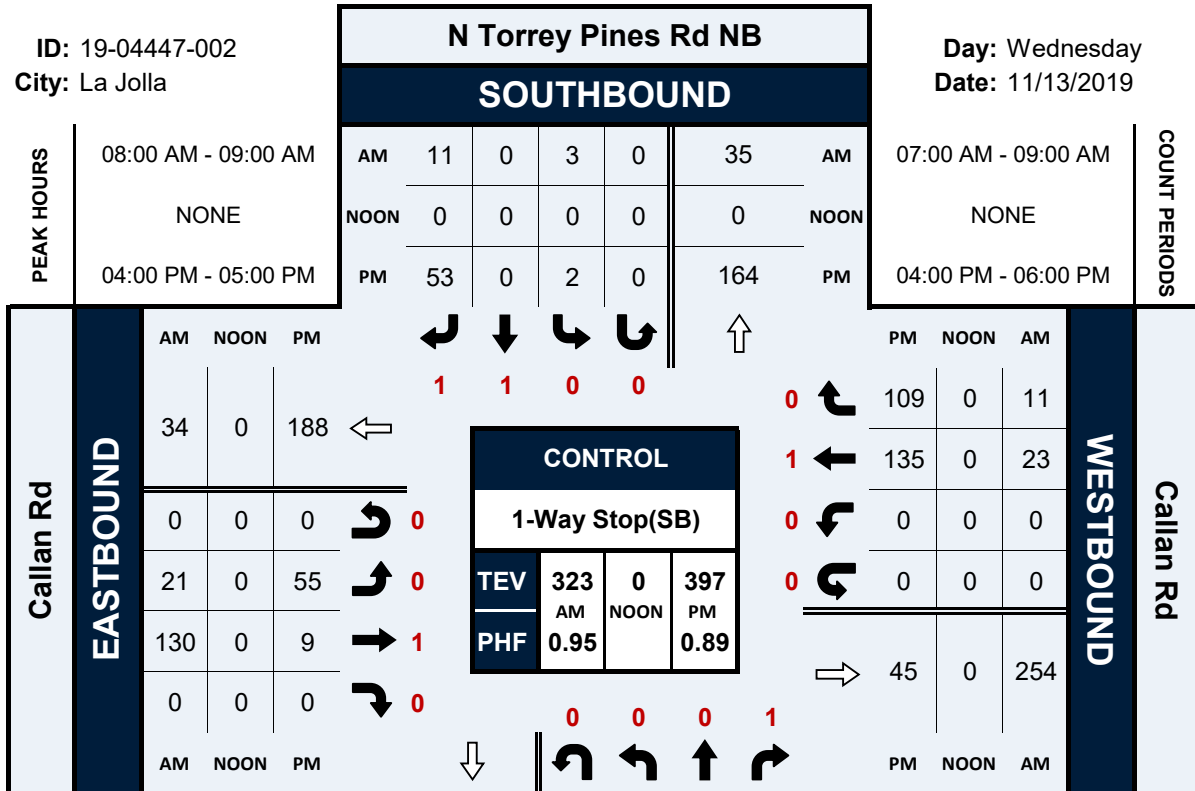


N Torrey Pines Rd NB & Callan Rd

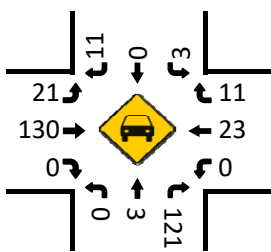
Peak Hour Turning Movement Count

ID: 19-04447-002
City: La Jolla

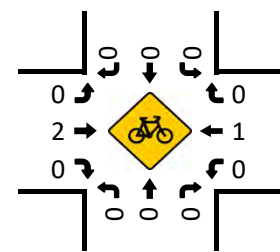
Day: Wednesday
Date: 11/13/2019



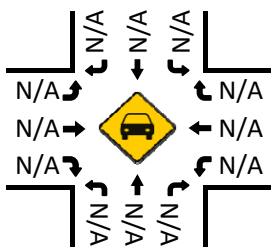
Total Vehicles (AM)



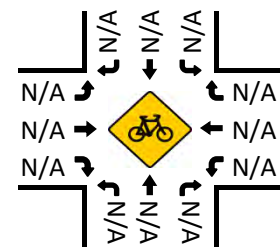
Bikes (AM)



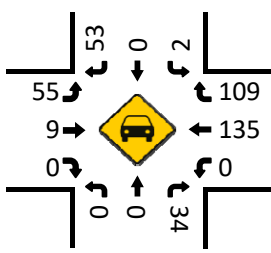
Total Vehicles (Noon)



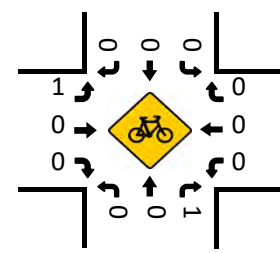
Bikes (NOON)



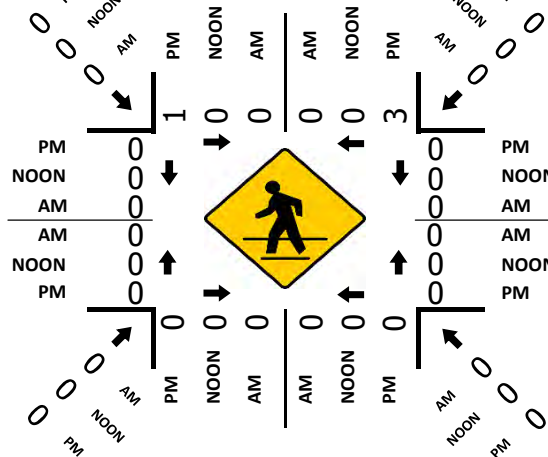
Total Vehicles (PM)



Bikes (PM)



Pedestrians (Crosswalks)

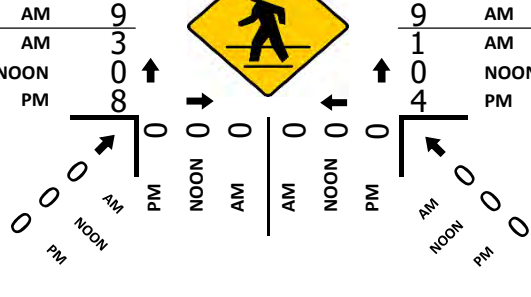
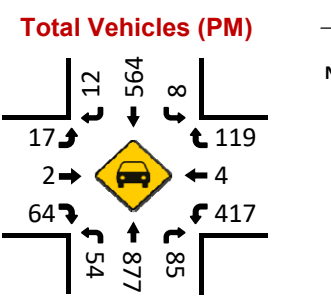
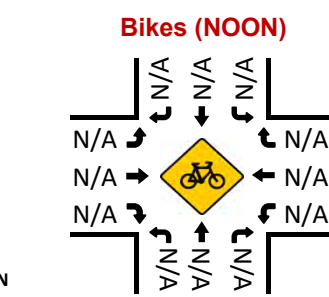
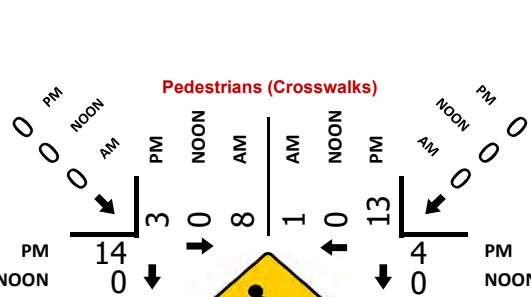
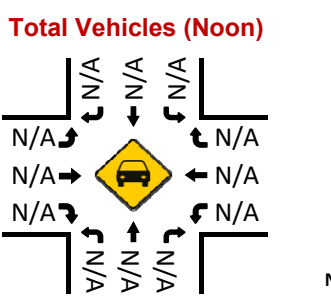
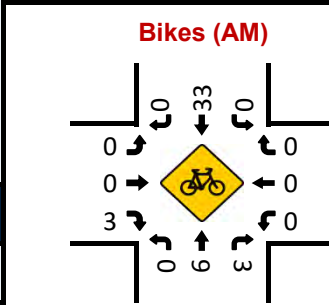
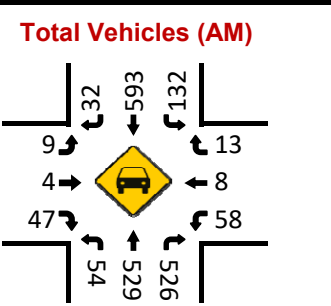
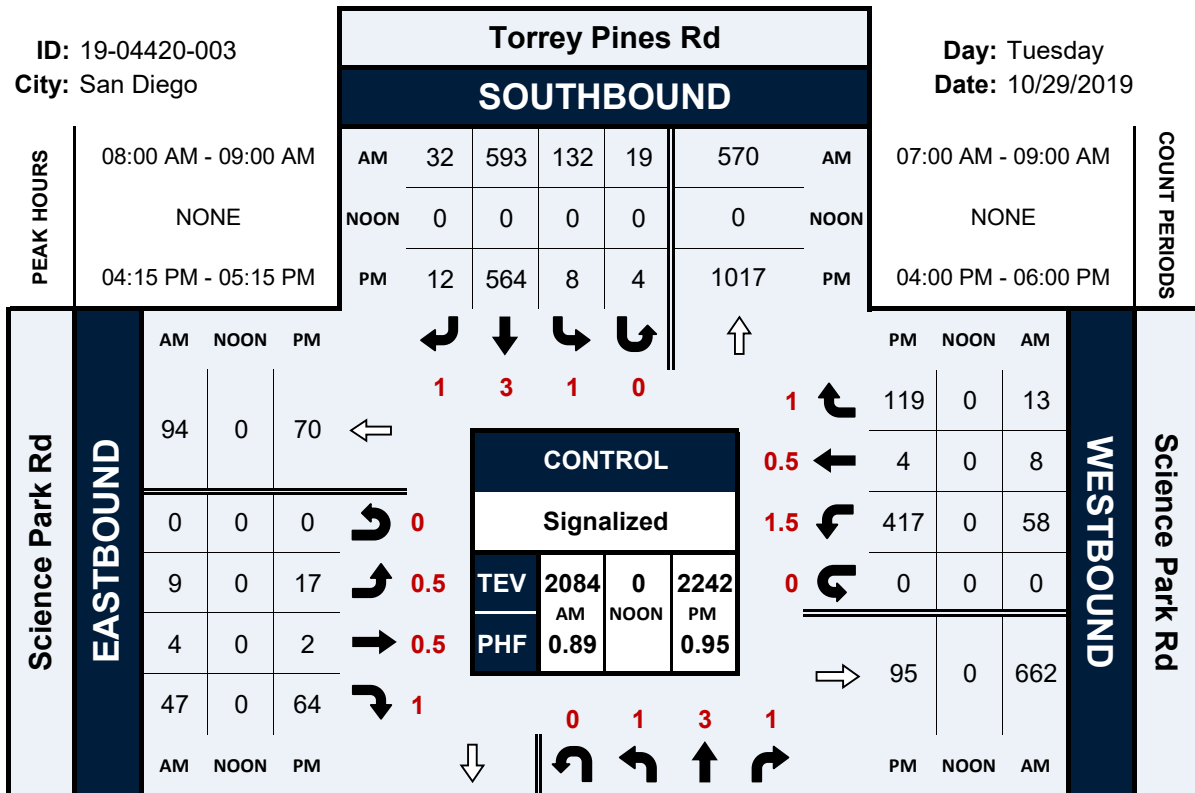


Torrey Pines Rd & Science Park Rd

Peak Hour Turning Movement Count

ID: 19-04420-003
City: San Diego

Day: Tuesday
Date: 10/29/2019

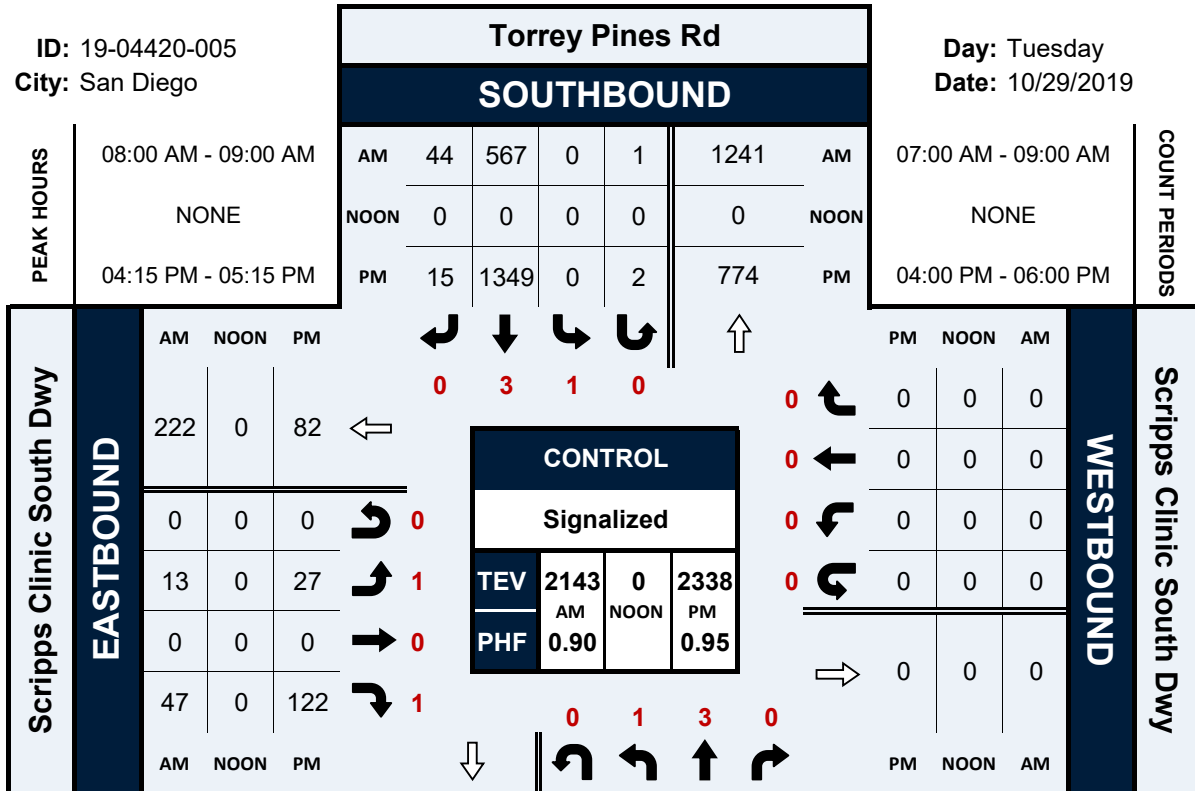


Torrey Pines Rd & Scripps Clinic South Dwy

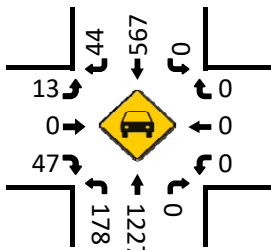
Peak Hour Turning Movement Count

ID: 19-04420-005
City: San Diego

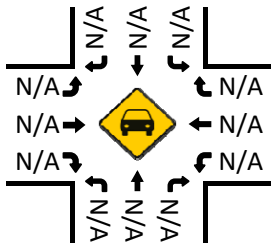
Day: Tuesday
Date: 10/29/2019



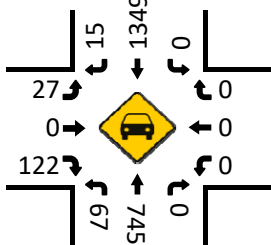
Total Vehicles (AM)



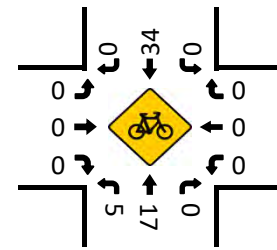
Total Vehicles (Noon)



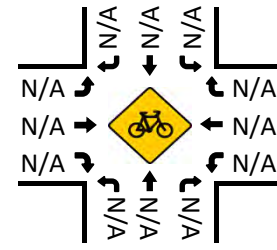
Total Vehicles (PM)



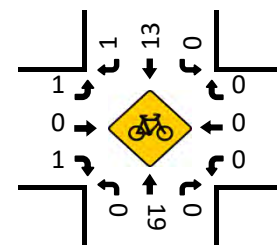
Bikes (AM)



Bikes (NOON)

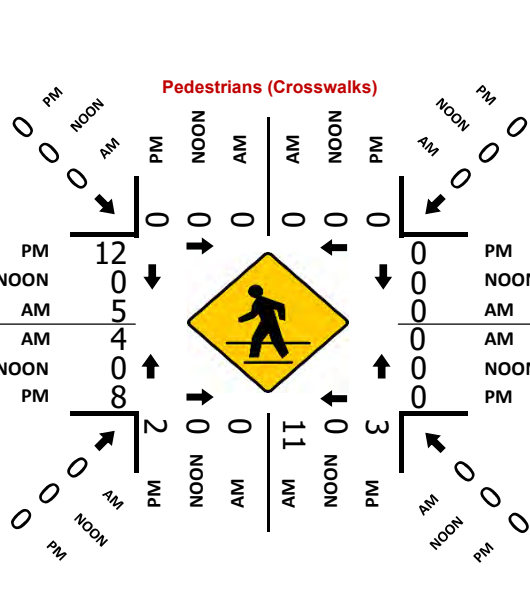


Bikes (PM)



NORTHBOUND

Torrey Pines Rd

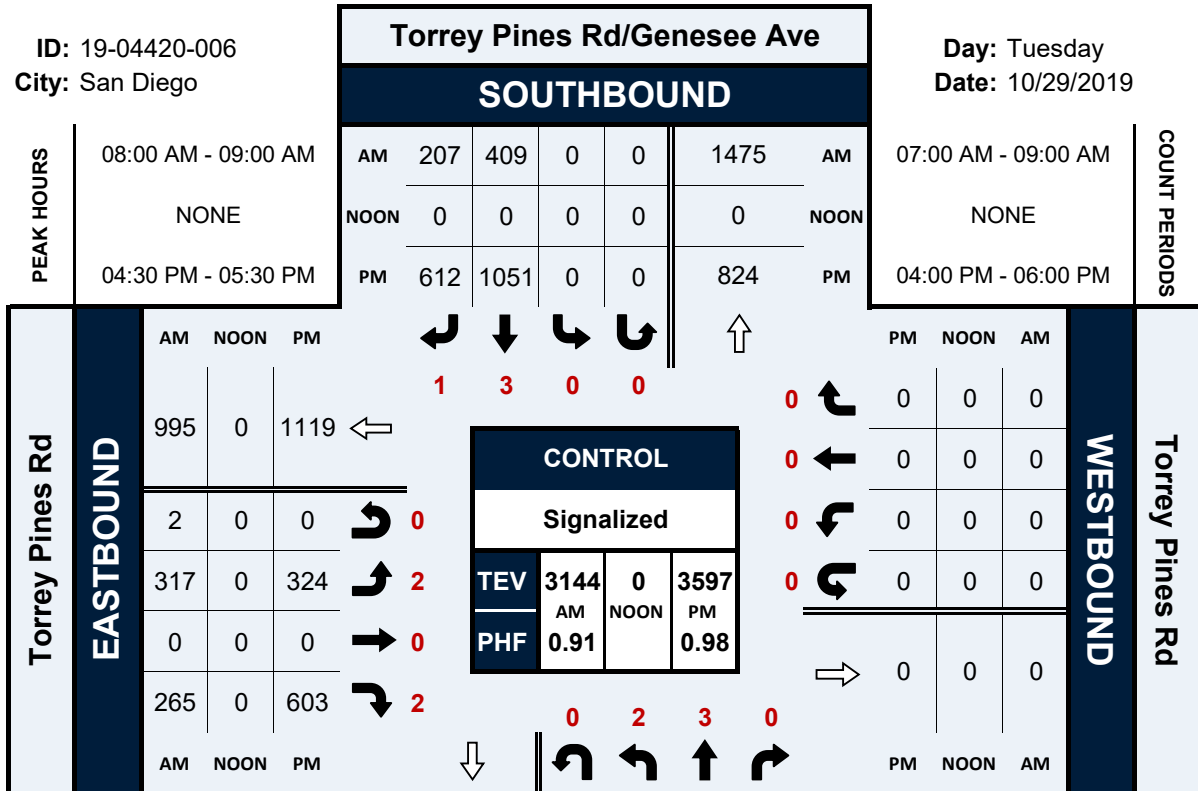


Torrey Pines Rd/Genesee Ave & Torrey Pines Rd

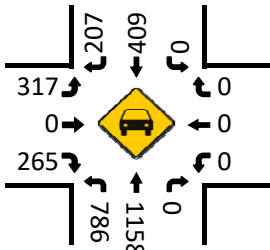
Peak Hour Turning Movement Count

ID: 19-04420-006
City: San Diego

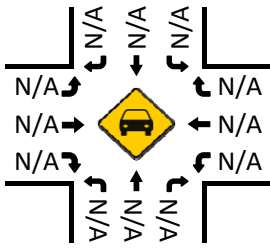
Day: Tuesday
Date: 10/29/2019



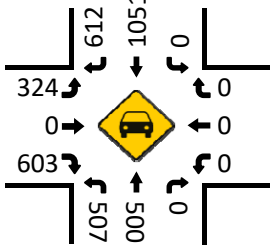
Total Vehicles (AM)



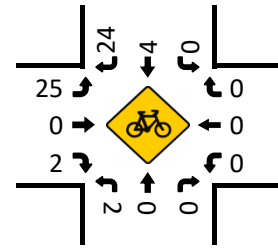
Total Vehicles (Noon)



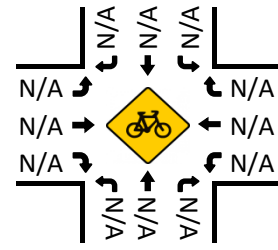
Total Vehicles (PM)



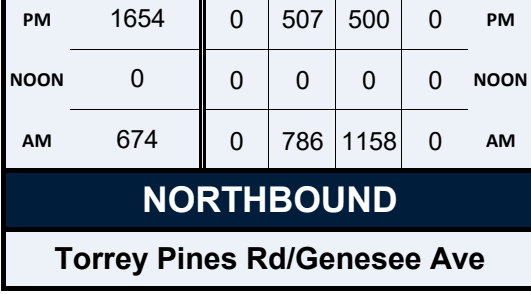
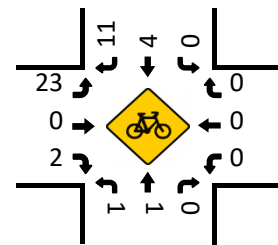
Bikes (AM)



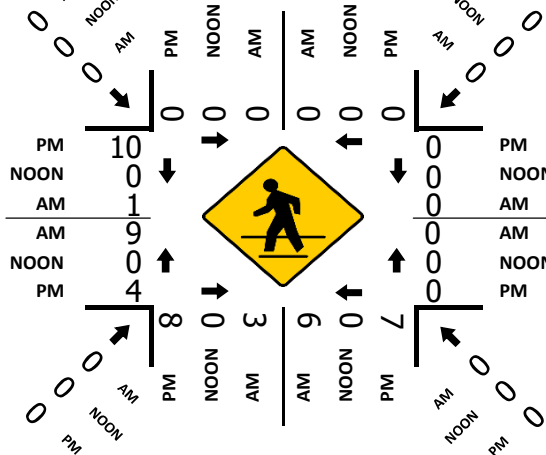
Bikes (NOON)



Bikes (PM)



Pedestrians (Crosswalks)

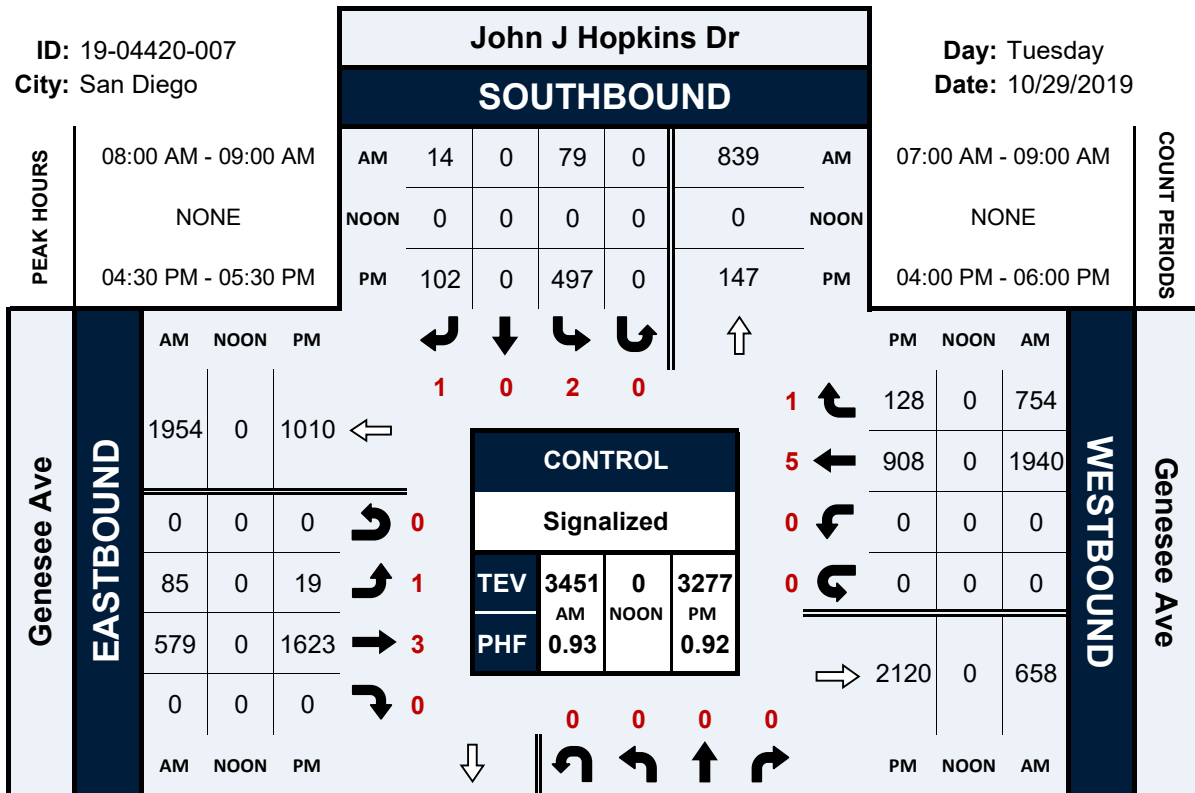


John J Hopkins Dr & Genesee Ave

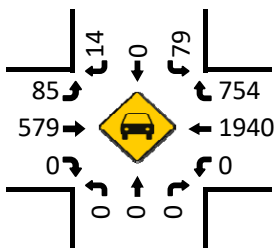
Peak Hour Turning Movement Count

ID: 19-04420-007
City: San Diego

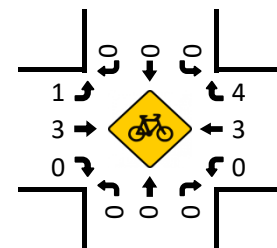
Day: Tuesday
Date: 10/29/2019



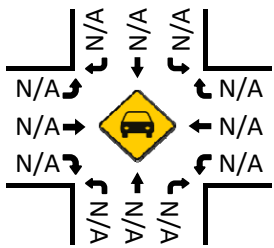
Total Vehicles (AM)



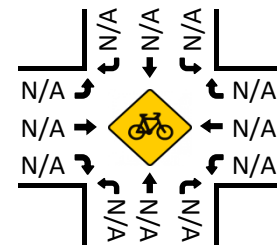
Bikes (AM)



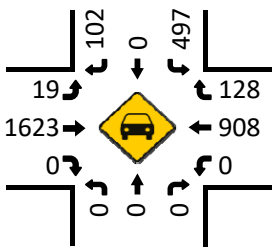
Total Vehicles (Noon)



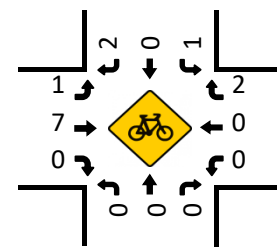
Bikes (NOON)



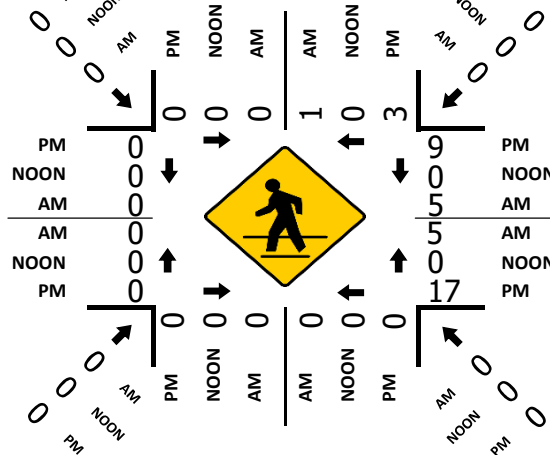
Total Vehicles (PM)



Bikes (PM)



Pedestrians (Crosswalks)

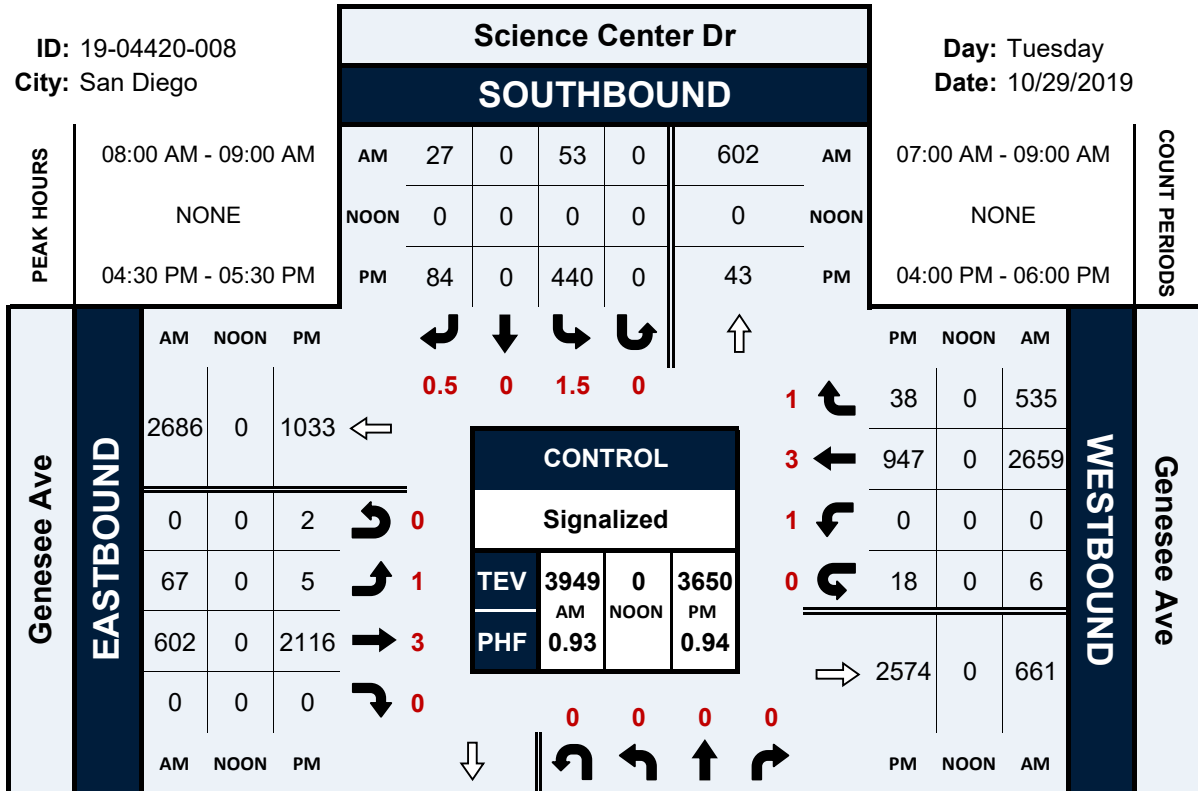


Science Center Dr & Genesee Ave

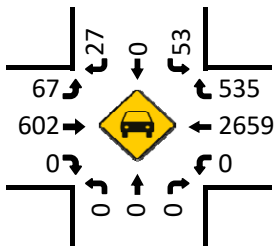
Peak Hour Turning Movement Count

ID: 19-04420-008
City: San Diego

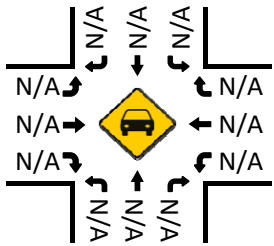
Day: Tuesday
Date: 10/29/2019



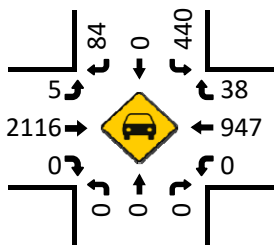
Total Vehicles (AM)



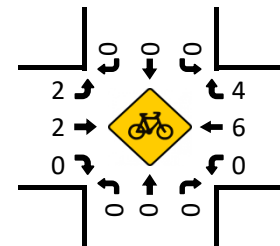
Total Vehicles (Noon)



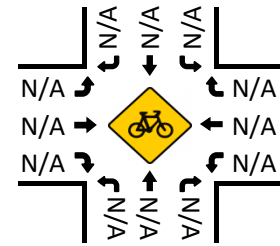
Total Vehicles (PM)



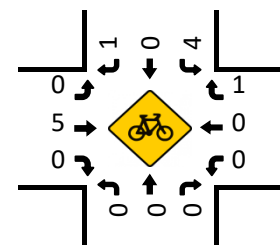
Bikes (AM)



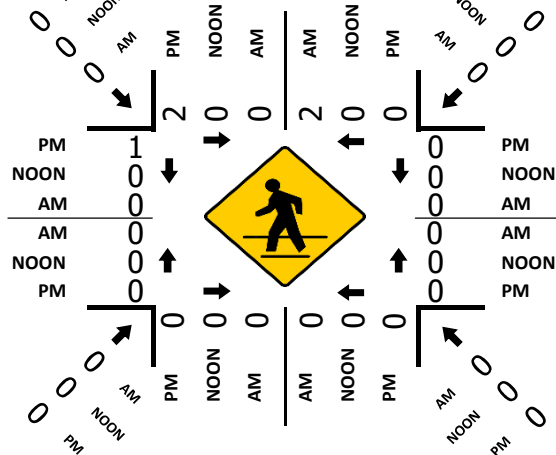
Bikes (NOON)



Bikes (PM)



Pedestrians (Crosswalks)



I-5 SB Ramps & Genesee Ave

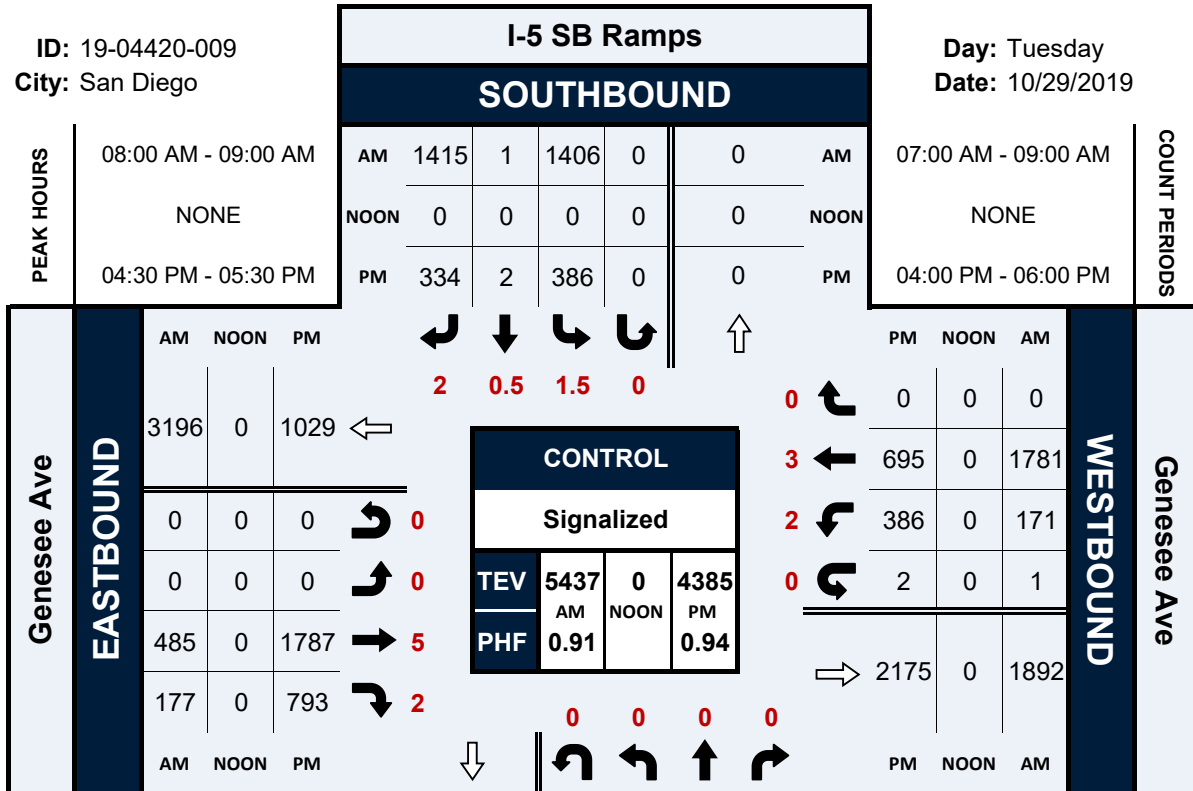
Peak Hour Turning Movement Count

ID: 19-04420-009

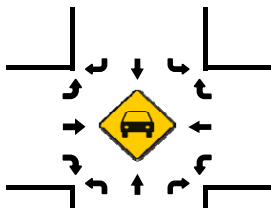
City: San Diego

Day: Tuesday

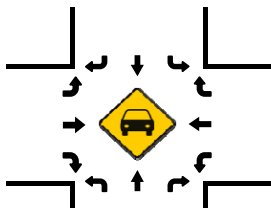
Date: 10/29/2019



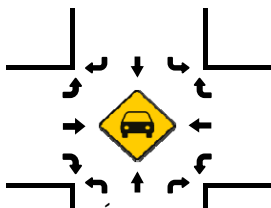
Total Vehicles (AM)



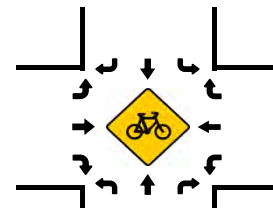
Total Vehicles (Noon)



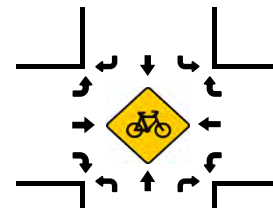
Total Vehicles (PM)



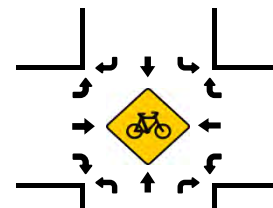
Bikes (AM)



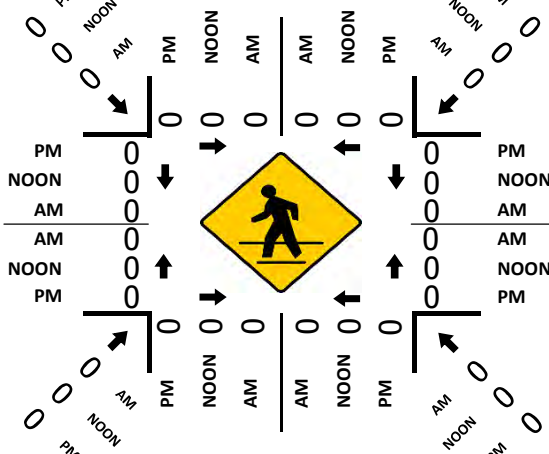
Bikes (NOON)



Bikes (PM)



Pedestrians (Crosswalks)

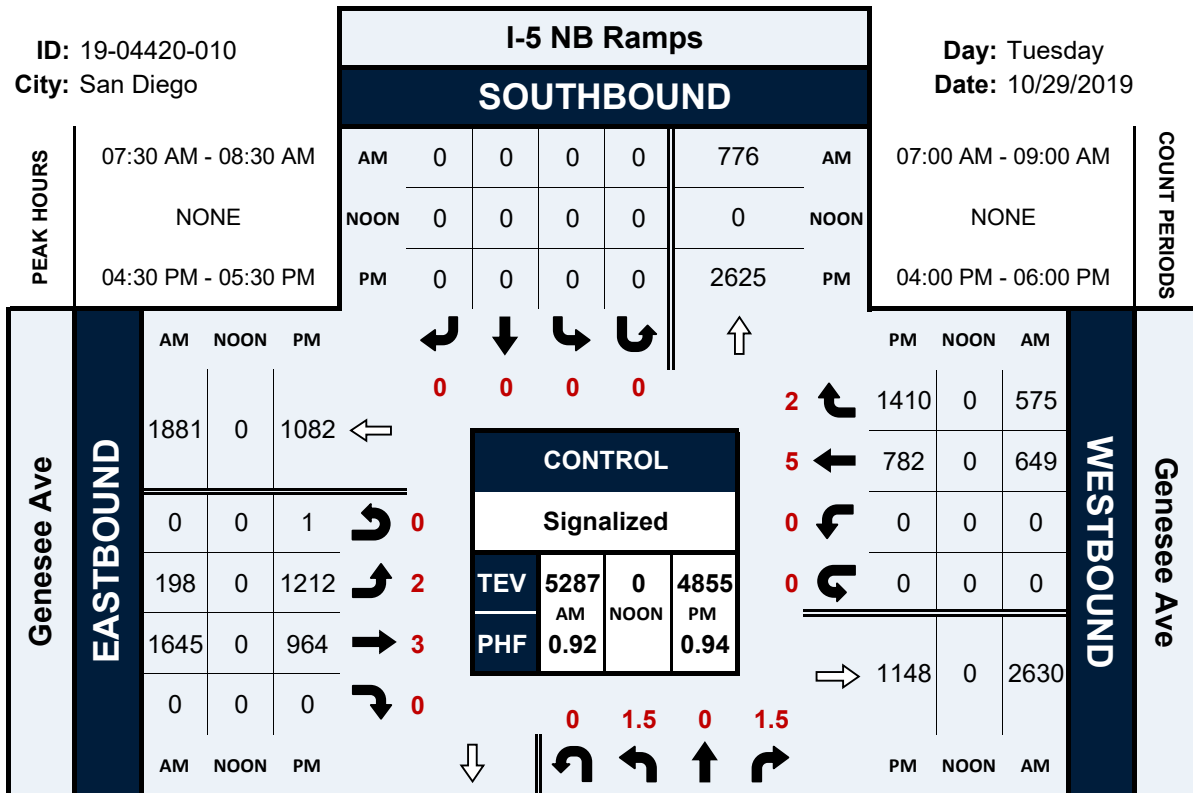


I-5 NB Ramps & Genesee Ave

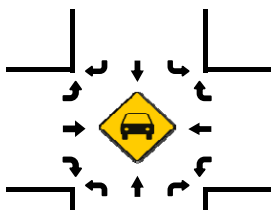
Peak Hour Turning Movement Count

ID: 19-04420-010
City: San Diego

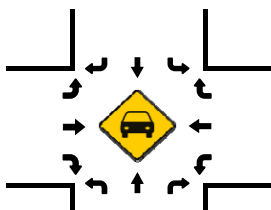
Day: Tuesday
Date: 10/29/2019



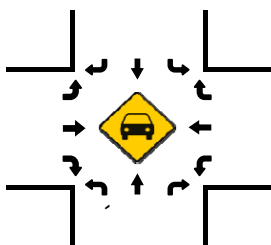
Total Vehicles (AM)



Total Vehicles (Noon)



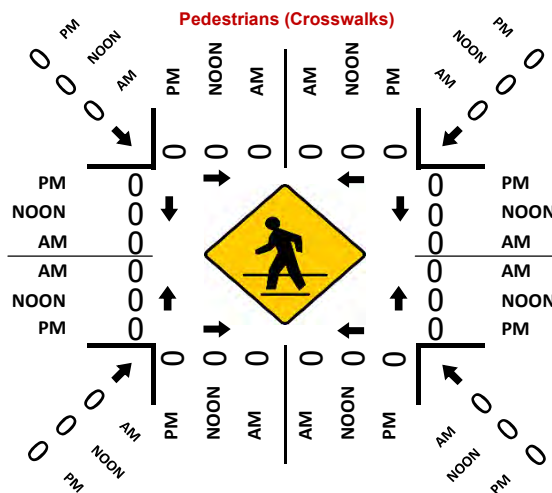
Total Vehicles (PM)



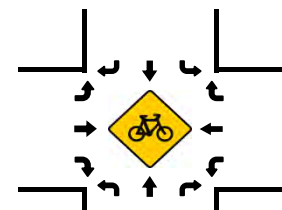
PM	0	0	299	3	184	PM
NOON	0	0	0	0	0	NOON
AM	0	0	1232	3	985	AM

I-5 NB Ramps NORTHBOUND

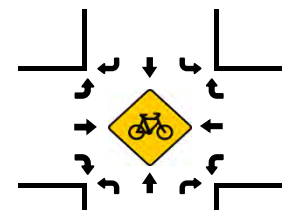
I-5 NB Ramps



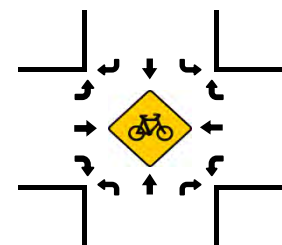
Bikes (AM)



Bikes (NOON)



Bikes (PM)



Prepared by: Field Data Services of Arizona/Veracity Traffic Group (520) 316-6745

Volumes for: Tuesday, April 6, 2021

City: San Diego

Project #: 21-1196-007

Location: N Torrey Pines Rd north of N.U. System Driveway

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00	4	7			12:00	100	102		
00:15	4	3			12:15	84	78		
00:30	3	5			12:30	90	107		
00:45	0	11	3	18	12:45	89	363	105	392
01:00	2	3			13:00	92	110		
01:15	1	1			13:15	87	124		
01:30	3	3			13:30	105	100		
01:45	0	6	1	8	13:45	91	375	100	434
02:00	1	3			14:00	98	101		
02:15	0	0			14:15	96	101		
02:30	0	1			14:30	93	64		
02:45	1	2	5	9	14:45	122	409	88	354
03:00	0	1			15:00	109	87		
03:15	1	0			15:15	124	106		
03:30	1	0			15:30	116	89		
03:45	0	2	4	5	15:45	108	457	87	369
04:00	3	0			16:00	122	88		
04:15	0	3			16:15	136	76		
04:30	0	5			16:30	143	82		
04:45	0	3	1	9	16:45	136	537	63	309
05:00	2	4			17:00	128	74		
05:15	2	3			17:15	110	76		
05:30	4	10			17:30	114	74		
05:45	9	17	9	26	17:45	101	453	50	274
06:00	5	25			18:00	79	67		
06:15	5	39			18:15	71	52		
06:30	15	43			18:30	70	49		
06:45	26	51	47	154	18:45	51	271	43	211
07:00	33	48			19:00	46	46		
07:15	28	57			19:15	60	80		
07:30	33	80			19:30	52	74		
07:45	36	130	99	284	19:45	39	197	51	251
08:00	49	87			20:00	17	31		
08:15	34	93			20:15	22	34		
08:30	59	101			20:30	17	21		
08:45	58	200	87	368	20:45	11	67	9	95
09:00	48	82			21:00	14	21		
09:15	56	96			21:15	19	15		
09:30	44	79			21:30	18	15		
09:45	75	223	79	336	21:45	13	64	15	66
10:00	57	102			22:00	9	12		
10:15	68	76			22:15	15	8		
10:30	87	108			22:30	6	9		
10:45	79	291	85	371	22:45	10	40	6	35
11:00	95	77			23:00	5	10		
11:15	87	91			23:15	3	11		
11:30	119	107			23:30	7	5		
11:45	79	380	89	364	23:45	3	18	1	27

Total Vol. 1316 1952 **3268** 3251 2817 **6068**

GPS Coordinates: 32.911000, -117.244500

	Daily Totals					
	NB	SB	EB	WB		Combined
	4567	4769			9336	
	AM		PM			
Split %	40.3%	59.7%	35.0%	53.6%	46.4%	65.0%
Peak Hour	11:15	11:15	11:15	16:15	12:30	16:00
Volume	385	389	774	543	446	846
P.H.F.	0.81	0.91	0.86	0.95	0.90	0.94

Prepared by: Field Data Services of Arizona/Veracity Traffic Group (520) 316-6745

Volumes for: Tuesday, April 6, 2021

City: San Diego

Project #: 21-1196-008

Location: N Torrey Pines Rd btwn N.U. System Driveway & Callan Rd

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00	3	3			12:00	98	104		
00:15	4	3			12:15	80	83		
00:30	3	6			12:30	90	109		
00:45	0	10	3	15	12:45	89	357	101	397
01:00	2	3			13:00	88	104		
01:15	2	1			13:15	86	130		
01:30	2	3			13:30	113	121		
01:45	0	6	1	8	13:45	83	370	101	456
02:00	2	3			14:00	95	104		
02:15	0	1			14:15	91	104		
02:30	0	1			14:30	94	67		
02:45	1	3	5	10	14:45	120	400	89	364
03:00	0	1			15:00	103	87		
03:15	1	0			15:15	125	106		
03:30	2	0			15:30	112	91		
03:45	1	4	2	3	15:45	100	440	85	369
04:00	5	0			16:00	122	88		
04:15	6	3			16:15	132	71		
04:30	6	3			16:30	147	82		
04:45	10	27	1	7	16:45	131	532	57	298
05:00	5	4			17:00	116	81		
05:15	4	3			17:15	108	75		
05:30	8	10			17:30	114	74		
05:45	19	36	9	26	17:45	103	441	50	280
06:00	13	24			18:00	82	62		
06:15	7	36			18:15	63	55		
06:30	25	45			18:30	66	53		
06:45	23	68	64	169	18:45	50	261	47	217
07:00	32	55			19:00	48	47		
07:15	22	60			19:15	48	70		
07:30	33	85			19:30	46	67		
07:45	35	122	99	299	19:45	37	179	53	237
08:00	56	80			20:00	20	32		
08:15	34	87			20:15	19	33		
08:30	64	105			20:30	18	22		
08:45	63	217	86	358	20:45	11	68	8	95
09:00	57	93			21:00	13	21		
09:15	61	97			21:15	18	14		
09:30	49	91			21:30	18	14		
09:45	79	246	77	358	21:45	11	60	15	64
10:00	62	101			22:00	9	12		
10:15	64	80			22:15	15	8		
10:30	86	108			22:30	7	9		
10:45	84	296	86	375	22:45	10	41	7	36
11:00	92	77			23:00	5	10		
11:15	90	87			23:15	6	11		
11:30	113	110			23:30	5	5		
11:45	82	377	91	365	23:45	5	21	1	27

Total Vol.	1412	1993	3405		3170	2840	6010
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GPS Coordinates: 32.907872, -117.243973

	Daily Totals				Combined	
	NB	SB	EB	WB		
	4582	4833			9415	
	AM		PM			
Split %	41.5%	58.5%	52.7%	47.3%	63.8%	
Peak Hour	11:15	11:15	11:15	16:00	12:45	13:15
Volume	383	392	775	532	456	833
P.H.F.	0.85	0.89	0.87	0.90	0.88	0.89

Prepared by: Field Data Services of Arizona/Veracity Traffic Group (520) 316-6745

Volumes for: Tuesday, April 6, 2021

City: San Diego

Project #: 21-1196-009

Location: N Torrey Pines Rd btwn Callan Rd & Science Park Rd

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00	7	0			12:00	90	121		
00:15	4	1			12:15	79	136		
00:30	5	0			12:30	87	133		
00:45	2	18	1	2	12:45	95	351	130	520
01:00	1	2			13:00	113	125		
01:15	0	0			13:15	97	124		
01:30	1	1			13:30	122	141		
01:45	3	5	2	5	13:45	107	439	143	533
02:00	2	1			14:00	113	136		
02:15	1	3			14:15	114	139		
02:30	4	2			14:30	107	141		
02:45	1	8	1	7	14:45	124	458	143	559
03:00	5	4			15:00	113	152		
03:15	2	1			15:15	125	155		
03:30	8	5			15:30	113	187		
03:45	5	20	2	12	15:45	110	461	185	679
04:00	9	8			16:00	124	189		
04:15	6	5			16:15	144	196		
04:30	9	7			16:30	124	166		
04:45	16	40	9	29	16:45	128	520	161	712
05:00	20	9			17:00	109	154		
05:15	24	16			17:15	108	141		
05:30	41	22			17:30	109	128		
05:45	45	130	20	67	17:45	97	423	104	527
06:00	50	41			18:00	74	85		
06:15	69	45			18:15	65	76		
06:30	80	85			18:30	67	96		
06:45	87	286	103	274	18:45	55	261	60	317
07:00	74	128			19:00	54	65		
07:15	78	151			19:15	50	54		
07:30	80	154			19:30	37	41		
07:45	133	365	174	607	19:45	29	170	42	202
08:00	131	185			20:00	26	28		
08:15	125	196			20:15	18	24		
08:30	124	199			20:30	23	21		
08:45	141	521	161	741	20:45	12	79	19	92
09:00	143	154			21:00	20	16		
09:15	133	147			21:15	15	13		
09:30	131	142			21:30	23	9		
09:45	128	535	128	571	21:45	16	74	6	44
10:00	124	133			22:00	9	11		
10:15	111	131			22:15	15	14		
10:30	104	125			22:30	13	15		
10:45	108	447	124	513	22:45	12	49	13	53
11:00	106	141			23:00	6	11		
11:15	103	145			23:15	9	10		
11:30	128	128			23:30	7	7		
11:45	124	461	130	544	23:45	3	25	12	40

Total Vol. 2836 3372 **6208** 3310 4278 **7588**

GPS Coordinates: 32.902647, -117.242866

	Daily Totals				Combined
	NB	SB	EB	WB	
	6146	7650			13796
Split %	AM		PM		
	45.7%	54.3%	43.6%	56.4%	55.0%

Peak Hour	08:45	07:45	07:45	16:00	15:30	15:30
Volume	548	754	1267	520	757	1248
P.H.F.	0.96	0.95	0.98	0.90	0.97	0.92

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	48	12:45	107	453	125	530	1215
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	24	13:45	113	443	132	565	1253
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	18	14:45	162	580	155	573	1370
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	39	15:45	202	773	129	572	1576
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	123	16:45	229	955	154	610	1748
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	248	17:45	166	838	111	557	1172
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	684	18:45	65	453	86	488	1092
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	1264	19:45	17	149	33	180	379
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	1651	20:45	22	103	19	132	276
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	1245	21:45	19	77	24	81	201
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	1035	22:45	9	63	11	71	154
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	1244	23:45	7	22	6	42	77
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

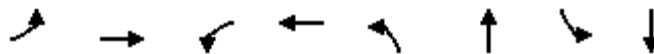
AM Peak Hour	08:15	08:15			08:15	PM Peak Hour	16:00	15:30			16:00
AM Pk Volume	587	765			1352	PM Pk Volume	955	610			1565
Pk Hr Factor	0.884	0.966			0.939	Pk Hr Factor	0.959	0.862			0.978
7 - 9 Volume	941	1317	0	0	2258	4 - 6 Volume	1793	1167	0	0	2960
7 - 9 Peak Hour	08:00	08:00			08:00	4 - 6 Peak Hour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

APPENDIX D

INTERSECTION CAPACITY ANALYSIS WORKSHEETS

Timings
1: N Torrey Pines Road & N.U. System Dwy

Existing AM
01/20/2022

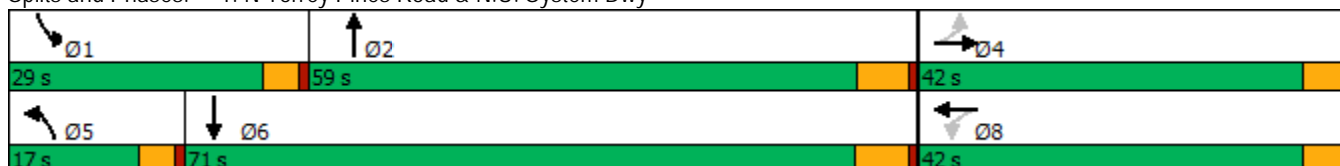


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕	↙	↕↕↕	↙	↕↕
Traffic Volume (vph)	1	0	17	0	1	224	38	412
Future Volume (vph)	1	0	17	0	1	224	38	412
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	10.0	4.0	10.0
Minimum Split (s)	39.9	39.9	41.2	41.2	9.5	23.0	9.5	22.5
Total Split (s)	42.0	42.0	42.0	42.0	17.0	59.0	29.0	71.0
Total Split (%)	32.3%	32.3%	32.3%	32.3%	13.1%	45.4%	22.3%	54.6%
Yellow Time (s)	3.9	3.9	3.9	3.9	3.4	4.9	3.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.9		4.9	4.4	5.9	4.4	6.2
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effect Green (s)		5.5		5.5	4.6	71.6	6.6	76.7
Actuated g/C Ratio		0.06		0.06	0.05	0.81	0.07	0.87
v/c Ratio		0.01		0.17	0.01	0.11	0.33	0.15
Control Delay		0.0		1.8	40.0	2.5	45.3	2.1
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		0.0		1.8	40.0	2.5	45.3	2.1
LOS		A		A	D	A	D	A
Approach Delay				1.8		2.5		5.8
Approach LOS				A		A		A

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 88.3	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.33	
Intersection Signal Delay: 4.2	Intersection LOS: A
Intersection Capacity Utilization 31.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: N Torrey Pines Road & N.U. System Dwy



HCM 6th Signalized Intersection Summary
1: N Torrey Pines Road & N.U. System Dwy

Existing AM
01/20/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑↑↑		↕	↑↑	
Traffic Volume (veh/h)	1	0	1	17	0	12	1	224	156	38	412	1
Future Volume (veh/h)	1	0	1	17	0	12	1	224	156	38	412	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	0	1	19	0	14	1	255	177	43	468	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	0	24	92	0	17	2	2571	1197	54	2854	6
Arrive On Green	0.03	0.00	0.03	0.03	0.00	0.03	0.00	0.76	0.76	0.03	0.78	0.78
Sat Flow, veh/h	866	15	881	862	0	635	1781	3404	1585	1781	3638	8
Grp Volume(v), veh/h	2	0	0	33	0	0	1	255	177	43	229	240
Grp Sat Flow(s),veh/h/ln	1762	0	0	1497	0	0	1781	1702	1585	1781	1777	1869
Q Serve(g_s), s	0.0	0.0	0.0	1.7	0.0	0.0	0.0	1.6	2.5	2.0	2.6	2.6
Cycle Q Clear(g_c), s	0.1	0.0	0.0	1.8	0.0	0.0	0.0	1.6	2.5	2.0	2.6	2.6
Prop In Lane	0.50		0.50	0.58		0.42	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	112	0	0	109	0	0	2	2571	1197	54	1394	1466
V/C Ratio(X)	0.02	0.00	0.00	0.30	0.00	0.00	0.46	0.10	0.15	0.79	0.16	0.16
Avail Cap(c_a), veh/h	740	0	0	735	0	0	272	2571	1197	531	1394	1466
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	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	0.0	0.0	40.0	0.0	0.0	41.2	2.7	2.8	39.8	2.2	2.2
Incr Delay (d2), s/veh	0.1	0.0	0.0	1.6	0.0	0.0	48.3	0.1	0.3	9.2	0.3	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	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.3	0.5	1.0	0.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.2	0.0	0.0	41.5	0.0	0.0	89.5	2.8	3.0	49.0	2.5	2.4
LnGrp LOS	D	A	A	D	A	A	F	A	A	D	A	A
Approach Vol, veh/h		2			33			433			512	
Approach Delay, s/veh		39.2			41.5			3.1			6.4	
Approach LOS		D			D			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.9	68.6		7.1	4.5	71.0		7.1				
Change Period (Y+Rc), s	4.4	* 6.2		4.9	4.4	6.2		4.9				
Max Green Setting (Gmax), s	24.6	* 53		37.1	12.6	64.8		37.1				
Max Q Clear Time (g_c+I1), s	4.0	4.5		2.1	2.0	4.6		3.8				
Green Ext Time (p_c), s	0.0	5.0		0.0	0.0	4.6		0.1				

Intersection Summary

HCM 6th Ctrl Delay	6.2
HCM 6th LOS	A

Notes

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

Timings

2: N Torrey Pines Road & Torrey Pines Science Park

Existing AM
01/20/2022



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↗	↑↑↑	↘	↑↑
Traffic Volume (vph)	9	1	374	19	411
Future Volume (vph)	9	1	374	19	411
Turn Type	Prot	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	4.0	4.0	10.0	4.0	10.0
Minimum Split (s)	37.9	37.9	25.9	9.5	22.5
Total Split (s)	37.9	37.9	66.1	26.0	92.1
Total Split (%)	29.2%	29.2%	50.8%	20.0%	70.8%
Yellow Time (s)	3.9	3.9	4.9	3.4	6.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.9	4.4	7.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Max	None	Max
Act Effect Green (s)	5.2	5.2	91.1	5.8	96.8
Actuated g/C Ratio	0.05	0.05	0.91	0.06	0.97
v/c Ratio	0.12	0.01	0.11	0.22	0.14
Control Delay	46.7	35.0	1.6	48.5	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	46.7	35.0	1.6	48.5	0.6
LOS	D	C	A	D	A
Approach Delay	45.7		1.6		2.7
Approach LOS	D		A		A

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 100.3
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.22
 Intersection Signal Delay: 2.6
 Intersection LOS: A
 Intersection Capacity Utilization 27.9%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: N Torrey Pines Road & Torrey Pines Science Park



HCM 6th Signalized Intersection Summary

2: N Torrey Pines Road & Torrey Pines Science Park

Existing AM
01/20/2022



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶	↷	↶↷		↶	↷
Traffic Volume (veh/h)	9	1	374	62	19	411
Future Volume (veh/h)	9	1	374	62	19	411
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	1	440	73	22	484
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	20	18	3560	577	33	3082
Arrive On Green	0.01	0.01	0.80	0.80	0.02	0.87
Sat Flow, veh/h	1781	1585	4595	718	1781	3647
Grp Volume(v), veh/h	11	1	336	177	22	484
Grp Sat Flow(s),veh/h/ln	1781	1585	1702	1741	1781	1777
Q Serve(g_s), s	0.6	0.1	2.1	2.2	1.2	2.1
Cycle Q Clear(g_c), s	0.6	0.1	2.1	2.2	1.2	2.1
Prop In Lane	1.00	1.00		0.41	1.00	
Lane Grp Cap(c), veh/h	20	18	2737	1400	33	3082
V/C Ratio(X)	0.54	0.06	0.12	0.13	0.67	0.16
Avail Cap(c_a), veh/h	599	533	2737	1400	392	3082
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.2	48.0	2.1	2.1	47.9	1.0
Incr Delay (d2), s/veh	8.1	0.5	0.1	0.2	8.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.4	0.4	0.6	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	56.4	48.4	2.2	2.3	56.4	1.1
LnGrp LOS	E	D	A	A	E	A
Approach Vol, veh/h	12		513			506
Approach Delay, s/veh	55.7		2.2			3.5
Approach LOS	E		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.2	85.9			92.1	6.0
Change Period (Y+Rc), s	4.4	* 7			7.0	4.9
Max Green Setting (Gmax), s	21.6	* 60			85.1	33.0
Max Q Clear Time (g_c+I1), s	3.2	4.2			4.1	2.6
Green Ext Time (p_c), s	0.0	6.4			5.4	0.0

Intersection Summary

HCM 6th Ctrl Delay	3.5
HCM 6th LOS	A

Notes

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

HCM 6th TWSC
 3: N Torrey Pines Road SB Connector & Callan Road

Existing AM
 01/20/2022

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	-	-	0	-	-	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

Timings

5: N Torrey Pines Road & Science Park Road

Existing AM
01/20/2022

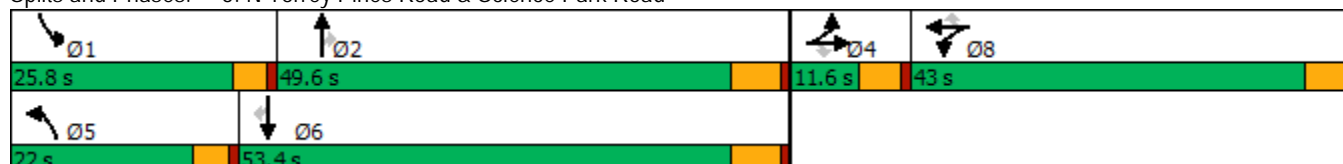


Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↖	↗	↖	↑↑↑	↗	↖	↑↑↑	↗
Traffic Volume (vph)	4	47	58	8	13	114	529	526	151	593	32
Future Volume (vph)	4	47	58	8	13	114	529	526	151	593	32
Turn Type	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4		8	8		5	2		1	6	
Permitted Phases		4			8			2			6
Detector Phase	4	4	8	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	6.0	10.0	10.0	4.0	20.0	20.0
Minimum Split (s)	8.9	8.9	42.9	42.9	42.9	10.4	28.7	28.7	8.4	25.7	25.7
Total Split (s)	11.6	11.6	43.0	43.0	43.0	22.0	49.6	49.6	25.8	53.4	53.4
Total Split (%)	8.9%	8.9%	33.1%	33.1%	33.1%	16.9%	38.2%	38.2%	19.8%	41.1%	41.1%
Yellow Time (s)	3.9	3.9	3.9	3.9	3.9	3.4	4.7	4.7	3.4	4.7	4.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	4.9	4.9	4.9	4.4	5.7	5.7	4.4	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effect Green (s)	6.2	6.2	7.6	7.6	7.6	11.9	47.9	47.9	13.9	49.9	49.9
Actuated g/C Ratio	0.07	0.07	0.08	0.08	0.08	0.13	0.53	0.53	0.15	0.55	0.55
v/c Ratio	0.11	0.27	0.26	0.26	0.07	0.55	0.22	0.55	0.63	0.24	0.04
Control Delay	45.4	4.6	46.3	46.2	0.6	47.7	13.9	3.7	47.7	12.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	4.6	46.3	46.2	0.6	47.7	13.9	3.7	47.7	12.9	0.1
LOS	D	A	D	D	A	D	B	A	D	B	A
Approach Delay	13.1			38.6			12.6			19.1	
Approach LOS	B			D			B			B	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 90.4
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 16.0
 Intersection LOS: B
 Intersection Capacity Utilization 57.8%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 5: N Torrey Pines Road & Science Park Road



HCM 6th Signalized Intersection Summary
5: N Torrey Pines Road & Science Park Road

Existing AM
01/20/2022



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

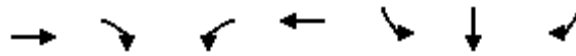
HCM 6th Ctrl Delay	20.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Timings
6: I-5 SB Ramps & Genesee Avenue

Existing AM
01/20/2022

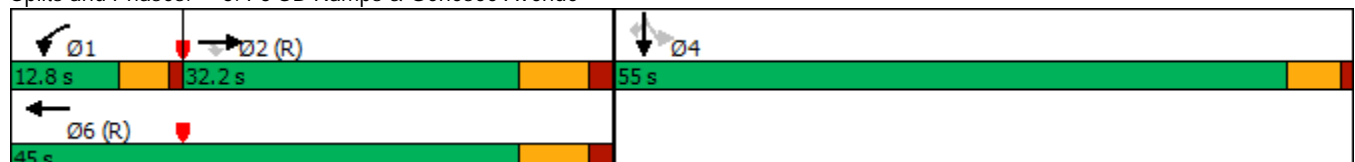


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑↑↑	↗↗	↖↖	↑↑↑	↘	↖	↗↗
Traffic Volume (vph)	485	177	172	1781	1406	1	1415
Future Volume (vph)	485	177	172	1781	1406	1	1415
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	2		1	6		4	
Permitted Phases		2			4		4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	13.0	13.0	5.0	13.0	5.0	5.0	5.0
Minimum Split (s)	30.2	30.2	9.7	33.2	10.1	10.1	10.1
Total Split (s)	32.2	32.2	12.8	45.0	55.0	55.0	55.0
Total Split (%)	32.2%	32.2%	12.8%	45.0%	55.0%	55.0%	55.0%
Yellow Time (s)	5.2	5.2	3.7	5.2	4.1	4.1	4.1
All-Red Time (s)	2.0	2.0	1.0	2.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	4.7	7.2	5.1	5.1	5.1
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Act Effect Green (s)	25.0	25.0	8.1	37.8	49.9	49.9	49.9
Actuated g/C Ratio	0.25	0.25	0.08	0.38	0.50	0.50	0.50
v/c Ratio	0.28	0.23	0.68	1.02	0.92	0.92	1.08
Control Delay	30.7	5.1	53.5	52.2	41.6	41.6	73.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	5.1	53.5	52.2	41.6	41.6	73.2
LOS	C	A	D	D	D	D	E
Approach Delay	23.9			52.3		57.5	
Approach LOS	C			D		E	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.08
 Intersection Signal Delay: 51.5
 Intersection LOS: D
 Intersection Capacity Utilization 94.2%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 6: I-5 SB Ramps & Genesee Avenue



HCM 6th Signalized Intersection Summary
6: I-5 SB Ramps & Genesee Avenue

Existing AM
01/20/2022



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	1957	721	251	1930	0				1778	0	1582
Arrive On Green	0.00	0.26	0.26	0.15	0.76	0.00				0.50	0.00	0.50
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	5.6	5.6	5.2	37.8	0.0				38.4	0.0	48.2
Cycle Q Clear(g_c), s	0.0	5.6	5.6	5.2	37.8	0.0				38.4	0.0	48.2
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1957	721	251	1930	0				1778	0	1582
V/C Ratio(X)	0.00	0.27	0.27	0.75	1.01	0.00				0.87	0.00	0.98
Avail Cap(c_a), veh/h	0	1957	721	280	1930	0				1778	0	1582
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	0.78	0.78	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.6	29.6	41.9	12.2	0.0				22.2	0.0	24.6
Incr Delay (d2), s/veh	0.0	0.3	0.9	7.8	21.6	0.0				5.0	0.0	18.6
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	2.0	1.9	2.3	7.9	0.0				16.3	0.0	20.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	29.9	30.5	49.7	33.8	0.0				27.1	0.0	43.3
LnGrp LOS	A	C	C	D	F	A				C	A	D
Approach Vol, veh/h		728			2146						3101	
Approach Delay, s/veh		30.1			35.2						35.2	
Approach LOS		C			D						D	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	12.0	33.0		55.0		45.0						
Change Period (Y+Rc), s	* 4.7	7.2		5.1		7.2						
Max Green Setting (Gmax), s	* 8.1	25.0		49.9		37.8						
Max Q Clear Time (g_c+I1), s	7.2	7.6		50.2		39.8						
Green Ext Time (p_c), s	0.0	3.7		0.0		0.0						

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.

Timings
7: I-5 NB Ramps & Genesee Avenue

Existing AM
01/20/2022



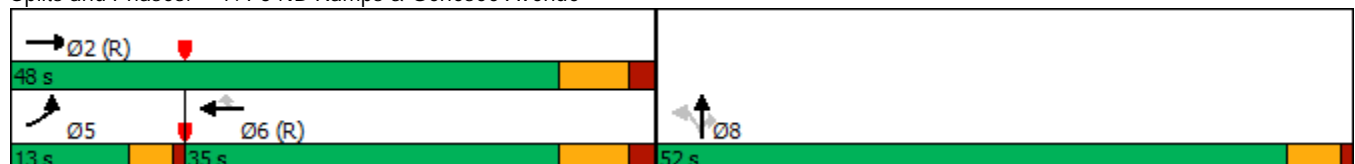
Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations	↶↷	↑↑↑	↑↑↑↑	↶↷	↶	↑	↶↷
Traffic Volume (vph)	198	1645	649	575	1232	3	985
Future Volume (vph)	198	1645	649	575	1232	3	985
Turn Type	Prot	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases				6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	13.0	11.0	11.0	5.0	5.0	5.0
Minimum Split (s)	9.2	35.2	32.2	32.2	10.1	10.1	10.1
Total Split (s)	13.0	48.0	35.0	35.0	52.0	52.0	52.0
Total Split (%)	13.0%	48.0%	35.0%	35.0%	52.0%	52.0%	52.0%
Yellow Time (s)	3.2	5.2	5.2	5.2	4.1	4.1	4.1
All-Red Time (s)	1.0	2.0	2.0	2.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.2	7.2	7.2	7.2	5.1	5.1	5.1
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	8.7	40.8	27.9	27.9	46.9	46.9	46.9
Actuated g/C Ratio	0.09	0.41	0.28	0.28	0.47	0.47	0.47
v/c Ratio	0.72	0.86	0.34	0.51	0.85	0.85	0.79
Control Delay	49.2	33.6	29.3	4.0	35.7	35.9	25.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.2	33.6	29.3	4.0	35.7	35.9	25.6
LOS	D	C	C	A	D	D	C
Approach Delay		35.2	17.4			31.3	
Approach LOS		D	B			C	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 29.4
 Intersection Capacity Utilization 94.2%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service F

Splits and Phases: 7: I-5 NB Ramps & Genesee Avenue



HCM 6th Signalized Intersection Summary

7: I-5 NB Ramps & Genesee Avenue

Existing AM
01/20/2022



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	277	2083	0	0	2166	798	1671	0	1487			
Arrive On Green	0.16	0.82	0.00	0.00	0.29	0.29	0.47	0.00	0.47			
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	6.0	21.5	0.0	0.0	7.3	20.6	32.1	0.0	27.1			
Cycle Q Clear(g_c), s	6.0	21.5	0.0	0.0	7.3	20.6	32.1	0.0	27.1			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	277	2083	0	0	2166	798	1671	0	1487			
V/C Ratio(X)	0.78	0.86	0.00	0.00	0.33	0.78	0.80	0.00	0.72			
Avail Cap(c_a), veh/h	304	2083	0	0	2166	798	1671	0	1487			
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	41.1	7.4	0.0	0.0	28.1	32.9	22.6	0.0	21.3			
Incr Delay (d2), s/veh	8.0	3.5	0.0	0.0	0.4	7.6	4.2	0.0	3.0			
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	2.6	3.3	0.0	0.0	2.5	7.3	13.7	0.0	10.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.1	10.9	0.0	0.0	28.5	40.4	26.8	0.0	24.3			
LnGrp LOS	D	B	A	A	C	D	C	A	C			
Approach Vol, veh/h		2003			1330			2412				
Approach Delay, s/veh		15.0			34.1			25.7				
Approach LOS		B			C			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		48.0			12.2	35.8		52.0				
Change Period (Y+Rc), s		7.2			* 4.2	7.2		5.1				
Max Green Setting (Gmax), s		40.8			* 8.8	27.8		46.9				
Max Q Clear Time (g_c+I1), s		23.5			8.0	22.6		34.1				
Green Ext Time (p_c), s		10.9			0.1	3.0		8.7				

Intersection Summary

HCM 6th Ctrl Delay	23.9
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					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕
Traffic Vol, veh/h	0	0	236	0	0	451
Future Vol, veh/h	0	0	236	0	0	451
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	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	268	0	0	513

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	134	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-
Pot Cap-1 Maneuver	0	890	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	890	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↑↑↑	↗ ↑↑↑			↑↑
Traffic Vol, veh/h	0	0	375	0	0	429
Future Vol, veh/h	0	0	375	0	0	429
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	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	426	0	0	488

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	213	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	674	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	-	674	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Timings
1: N Torrey Pines Road & N.U. System Dwy

Existing PM
01/20/2022

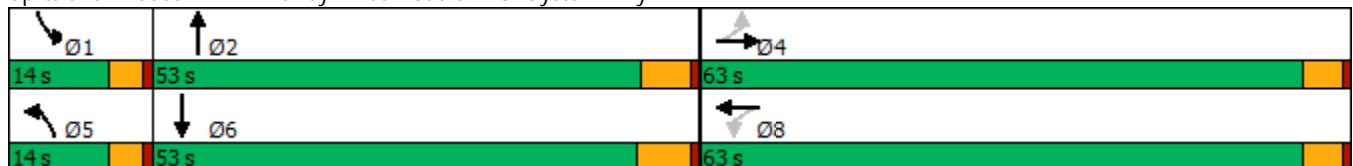


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕	↙	↑↑↑	↙	↑↑
Traffic Volume (vph)	1	0	144	0	1	592	4	342
Future Volume (vph)	1	0	144	0	1	592	4	342
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	10.0	4.0	10.0
Minimum Split (s)	39.9	39.9	41.2	41.2	9.5	23.0	9.5	22.5
Total Split (s)	63.0	63.0	63.0	63.0	14.0	53.0	14.0	53.0
Total Split (%)	48.5%	48.5%	48.5%	48.5%	10.8%	40.8%	10.8%	40.8%
Yellow Time (s)	3.9	3.9	3.9	3.9	3.4	4.9	3.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.9		4.9	4.4	5.9	4.4	6.2
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effect Green (s)		12.9		12.9	4.6	49.6	4.8	49.4
Actuated g/C Ratio		0.17		0.17	0.06	0.66	0.06	0.66
v/c Ratio		0.01		0.68	0.01	0.20	0.04	0.16
Control Delay		0.0		31.8	36.0	6.1	36.5	6.3
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		0.0		31.8	36.0	6.1	36.5	6.3
LOS		A		C	D	A	D	A
Approach Delay				31.8		6.2		6.6
Approach LOS				C		A		A

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 75	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 10.4	Intersection LOS: B
Intersection Capacity Utilization 37.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: N Torrey Pines Road & N.U. System Dwy



HCM 6th Signalized Intersection Summary
 1: N Torrey Pines Road & N.U. System Dwy

Existing PM
 01/20/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑↑↑		↕	↑↑	
Traffic Volume (veh/h)	1	0	1	144	0	42	1	592	23	4	342	1
Future Volume (veh/h)	1	0	1	144	0	42	1	592	23	4	342	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	0	1	155	0	45	1	637	25	4	368	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	189	22	140	276	3	56	2	3123	122	8	2263	6
Arrive On Green	0.17	0.00	0.17	0.17	0.00	0.17	0.00	0.62	0.62	0.00	0.62	0.62
Sat Flow, veh/h	684	129	813	1113	15	327	1781	5042	197	1781	3636	10
Grp Volume(v), veh/h	2	0	0	200	0	0	1	429	233	4	180	189
Grp Sat Flow(s),veh/h/ln	1626	0	0	1455	0	0	1781	1702	1835	1781	1777	1869
Q Serve(g_s), s	0.0	0.0	0.0	9.9	0.0	0.0	0.0	4.2	4.2	0.2	3.2	3.2
Cycle Q Clear(g_c), s	0.1	0.0	0.0	10.0	0.0	0.0	0.0	4.2	4.2	0.2	3.2	3.2
Prop In Lane	0.50		0.50	0.77		0.22	1.00		0.11	1.00		0.01
Lane Grp Cap(c), veh/h	352	0	0	335	0	0	2	2108	1136	8	1106	1163
V/C Ratio(X)	0.01	0.00	0.00	0.60	0.00	0.00	0.43	0.20	0.20	0.53	0.16	0.16
Avail Cap(c_a), veh/h	1218	0	0	1193	0	0	225	2108	1136	225	1106	1163
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	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	0.0	0.0	30.2	0.0	0.0	38.0	6.3	6.3	37.8	6.0	6.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.7	0.0	0.0	39.8	0.2	0.4	19.4	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	0.0	0.0	0.0	3.5	0.0	0.0	0.0	1.2	1.3	0.1	1.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.1	0.0	0.0	31.9	0.0	0.0	77.7	6.5	6.7	57.2	6.3	6.3
LnGrp LOS	C	A	A	C	A	A	E	A	A	E	A	A
Approach Vol, veh/h		2			200			663				373
Approach Delay, s/veh		26.1			31.9			6.7				6.9
Approach LOS		C			C			A				A
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	53.3		18.0	4.5	53.5		18.0				
Change Period (Y+Rc), s	4.4	* 6.2		4.9	4.4	6.2		4.9				
Max Green Setting (Gmax), s	9.6	* 47		58.1	9.6	46.8		58.1				
Max Q Clear Time (g_c+I1), s	2.2	6.2		2.1	2.0	5.2		12.0				
Green Ext Time (p_c), s	0.0	7.8		0.0	0.0	3.4		1.3				

Intersection Summary

HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

Notes

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

Timings
 2: N Torrey Pines Road & Torrey Pines Science Park

Existing PM
 01/20/2022

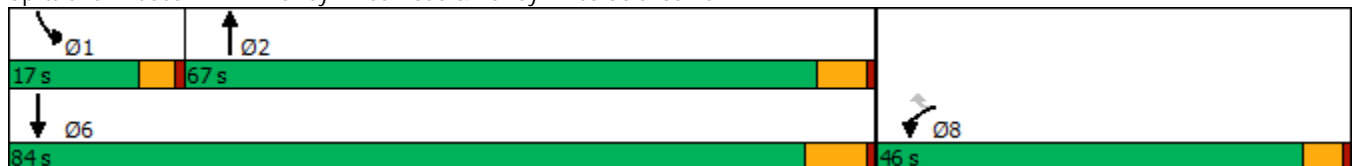


Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↵	↵	↕↕↕	↵	↕↕
Traffic Volume (vph)	52	22	593	2	483
Future Volume (vph)	52	22	593	2	483
Turn Type	Prot	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	4.0	4.0	10.0	4.0	10.0
Minimum Split (s)	37.9	37.9	25.9	9.5	22.5
Total Split (s)	46.0	46.0	67.0	17.0	84.0
Total Split (%)	35.4%	35.4%	51.5%	13.1%	64.6%
Yellow Time (s)	3.9	3.9	4.9	3.4	6.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.9	4.4	7.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Max	None	Max
Act Effect Green (s)	7.5	7.5	80.3	4.7	81.3
Actuated g/C Ratio	0.08	0.08	0.82	0.05	0.83
v/c Ratio	0.41	0.17	0.15	0.02	0.18
Control Delay	51.5	19.0	2.7	45.0	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	51.5	19.0	2.7	45.0	2.3
LOS	D	B	A	D	A
Approach Delay	41.8		2.7		2.5
Approach LOS	D		A		A

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 97.4
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.41
 Intersection Signal Delay: 5.1
 Intersection LOS: A
 Intersection Capacity Utilization 26.6%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: N Torrey Pines Road & Torrey Pines Science Park



HCM 6th Signalized Intersection Summary

2: N Torrey Pines Road & Torrey Pines Science Park

Existing PM
01/20/2022



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶	↶	↷↷↷		↶	↷↷
Traffic Volume (veh/h)	52	22	593	8	2	483
Future Volume (veh/h)	52	22	593	8	2	483
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	56	24	638	9	2	519
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	83	74	4027	57	4	2934
Arrive On Green	0.05	0.05	0.78	0.78	0.00	0.83
Sat Flow, veh/h	1781	1585	5357	73	1781	3647
Grp Volume(v), veh/h	56	24	418	229	2	519
Grp Sat Flow(s),veh/h/ln	1781	1585	1702	1857	1781	1777
Q Serve(g_s), s	2.9	1.4	2.9	2.9	0.1	2.8
Cycle Q Clear(g_c), s	2.9	1.4	2.9	2.9	0.1	2.8
Prop In Lane	1.00	1.00		0.04	1.00	
Lane Grp Cap(c), veh/h	83	74	2642	1442	4	2934
V/C Ratio(X)	0.67	0.32	0.16	0.16	0.52	0.18
Avail Cap(c_a), veh/h	785	699	2642	1442	241	2934
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	43.0	2.7	2.7	46.5	1.7
Incr Delay (d2), s/veh	3.5	0.9	0.1	0.2	34.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.6	0.6	0.7	0.1	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.2	44.0	2.8	2.9	81.2	1.8
LnGrp LOS	D	D	A	A	F	A
Approach Vol, veh/h	80		647			521
Approach Delay, s/veh	46.2		2.8			2.1
Approach LOS	D		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	4.6	79.4			84.0	9.3
Change Period (Y+Rc), s	4.4	* 7			7.0	4.9
Max Green Setting (Gmax), s	12.6	* 61			77.0	41.1
Max Q Clear Time (g_c+I1), s	2.1	4.9			4.8	4.9
Green Ext Time (p_c), s	0.0	8.4			5.9	0.1

Intersection Summary

HCM 6th Ctrl Delay	5.3
HCM 6th LOS	A

Notes

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

HCM 6th TWSC
3: N Torrey Pines Road SB Connector & Callan Road

Existing PM
01/20/2022

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	-	-	0	-	-	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

Timings
5: N Torrey Pines Road & Science Park Road

Existing PM
01/20/2022

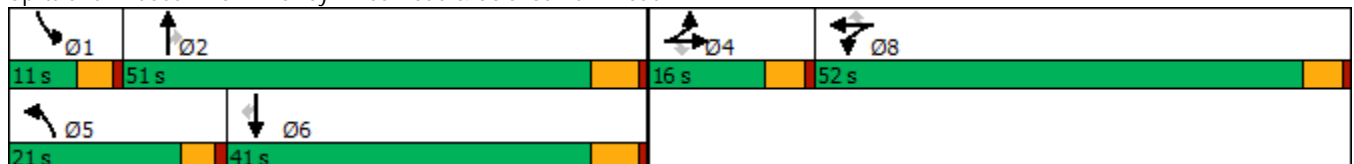


Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕	↗	↖	↕	↗	↖	↑↑↑	↗	↖	↑↑↑	↗
Traffic Volume (vph)	2	64	417	4	119	69	877	85	12	564	12
Future Volume (vph)	2	64	417	4	119	69	877	85	12	564	12
Turn Type	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4		8	8		5	2		1	6	
Permitted Phases		4			8			2			6
Detector Phase	4	4	8	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	6.0	10.0	10.0	4.0	20.0	20.0
Minimum Split (s)	8.9	8.9	42.9	42.9	42.9	10.4	28.7	28.7	8.4	25.7	25.7
Total Split (s)	16.0	16.0	52.0	52.0	52.0	21.0	51.0	51.0	11.0	41.0	41.0
Total Split (%)	12.3%	12.3%	40.0%	40.0%	40.0%	16.2%	39.2%	39.2%	8.5%	31.5%	31.5%
Yellow Time (s)	3.9	3.9	3.9	3.9	3.9	3.4	4.7	4.7	3.4	4.7	4.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	4.9	4.9	4.9	4.4	5.7	5.7	4.4	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effect Green (s)	6.7	6.7	18.1	18.1	18.1	9.2	48.7	48.7	6.2	39.5	39.5
Actuated g/C Ratio	0.08	0.08	0.20	0.20	0.20	0.10	0.55	0.55	0.07	0.45	0.45
v/c Ratio	0.15	0.27	0.64	0.65	0.29	0.40	0.33	0.10	0.11	0.26	0.02
Control Delay	46.1	2.8	42.0	42.6	6.5	47.1	13.7	3.8	46.7	19.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	2.8	42.0	42.6	6.5	47.1	13.7	3.8	46.7	19.2	0.1
LOS	D	A	D	D	A	D	B	A	D	B	A
Approach Delay	12.7			34.4			15.1			19.4	
Approach LOS	B			C			B			B	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 88.4
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 20.8
 Intersection LOS: C
 Intersection Capacity Utilization 58.8%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 5: N Torrey Pines Road & Science Park Road



HCM 6th Signalized Intersection Summary
5: N Torrey Pines Road & Science Park Road

Existing PM
01/20/2022



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		0.90	1.00		0.98	1.00		0.99	1.00		0.93
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	99	11	88	736	0	320	99	2553	786	22	2332	673
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	1430	3563	0	1548	1781	5106	1572	1781	5106	1475
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	1430	1781	0	1548	1781	1702	1572	1781	1702	1475
Q Serve(g_s), s	1.0	0.0	4.2	10.2	0.0	6.3	3.7	10.0	2.7	0.7	6.5	0.4
Cycle Q Clear(g_c), s	1.0	0.0	4.2	10.2	0.0	6.3	3.7	10.0	2.7	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	110	0	88	736	0	320	99	2553	786	22	2332	673
V/C Ratio(X)	0.18	0.00	0.76	0.60	0.00	0.39	0.74	0.36	0.11	0.59	0.25	0.02
Avail Cap(c_a), veh/h	219	0	175	1852	0	805	326	2553	786	130	2332	673
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	40.3	0.0	41.9	32.6	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	12.7	0.8	0.0	0.8	10.1	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	41.1	0.0	54.5	33.4	0.0	31.8	52.2	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		51.4			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		10.5	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		6.2	5.7	8.5		12.2				
Green Ext Time (p_c), s	0.0	7.1		0.1	0.1	3.9		2.1				

Intersection Summary

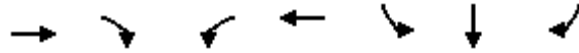
HCM 6th Ctrl Delay	21.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Timings
6: I-5 SB Ramps & Genesee Avenue

Existing PM
01/20/2022

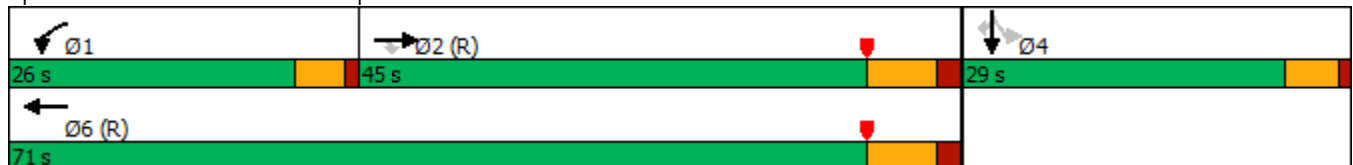


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑↑↑	↗↗	↖↖	↑↑↑	↘	↕	↗↗
Traffic Volume (vph)	1787	793	388	695	386	2	334
Future Volume (vph)	1787	793	388	695	386	2	334
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	2		1	6		4	
Permitted Phases		2			4		4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	13.0	13.0	5.0	13.0	5.0	5.0	5.0
Minimum Split (s)	30.2	30.2	9.7	33.2	10.1	10.1	10.1
Total Split (s)	45.0	45.0	26.0	71.0	29.0	29.0	29.0
Total Split (%)	45.0%	45.0%	26.0%	71.0%	29.0%	29.0%	29.0%
Yellow Time (s)	5.2	5.2	3.7	5.2	4.1	4.1	4.1
All-Red Time (s)	2.0	2.0	1.0	2.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	4.7	7.2	5.1	5.1	5.1
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Act Effct Green (s)	47.2	47.2	17.1	69.0	18.7	18.7	18.7
Actuated g/C Ratio	0.47	0.47	0.17	0.69	0.19	0.19	0.19
v/c Ratio	0.53	0.48	0.70	0.21	0.65	0.66	0.44
Control Delay	20.6	2.5	55.4	6.1	46.9	47.2	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	2.5	55.4	6.1	46.9	47.2	5.2
LOS	C	A	E	A	D	D	A
Approach Delay	15.0			23.8		27.7	
Approach LOS	B			C		C	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 19.3
 Intersection LOS: B
 Intersection Capacity Utilization 105.0%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 6: I-5 SB Ramps & Genesee Avenue



HCM 6th Signalized Intersection Summary

6: I-5 SB Ramps & Genesee Avenue

Existing PM
01/20/2022



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	4044	1489	490	3690	0				550	0	490
Arrive On Green	0.00	0.53	0.53	0.28	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	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	15.6	20.2	11.3	0.0	0.0				11.1	0.0	10.7
Cycle Q Clear(g_c), s	0.0	15.6	20.2	11.3	0.0	0.0				11.1	0.0	10.7
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	4044	1489	490	3690	0				550	0	490
V/C Ratio(X)	0.00	0.47	0.57	0.84	0.20	0.00				0.75	0.00	0.73
Avail Cap(c_a), veh/h	0	4044	1489	736	3690	0				851	0	758
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	0.92	0.92	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	14.5	15.6	34.8	0.0	0.0				40.4	0.0	40.3
Incr Delay (d2), s/veh	0.0	0.4	1.6	5.3	0.1	0.0				2.1	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.7	5.9	4.2	0.0	0.0				5.0	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	14.9	17.1	40.1	0.1	0.0				42.5	0.0	42.3
LnGrp LOS	A	B	B	D	A	A				D	A	D
Approach Vol, veh/h		2745			1152						767	
Approach Delay, s/veh		15.6			14.4						42.4	
Approach LOS		B			B						D	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	18.9	60.6		20.5		79.5						
Change Period (Y+Rc), s	* 4.7	7.2		5.1		7.2						
Max Green Setting (Gmax), s	* 21	37.8		23.9		63.8						
Max Q Clear Time (g_c+I1), s	13.3	22.2		13.1		2.0						
Green Ext Time (p_c), s	0.9	12.8		2.4		5.2						

Intersection Summary

HCM 6th Ctrl Delay	19.7
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.

Timings
7: I-5 NB Ramps & Genesee Avenue

Existing PM
01/20/2022

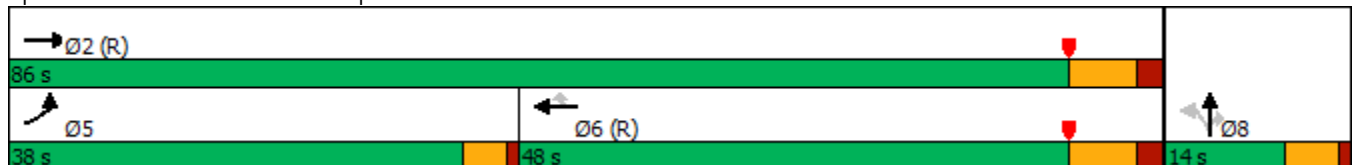


Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations	↶↷	↑↑↑	↑↑↑↑	↶↷	↶	↶	↶↷
Traffic Volume (vph)	1213	964	782	1410	299	3	184
Future Volume (vph)	1213	964	782	1410	299	3	184
Turn Type	Prot	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases				6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	13.0	11.0	11.0	5.0	5.0	5.0
Minimum Split (s)	9.2	35.2	32.2	32.2	10.1	10.1	10.1
Total Split (s)	38.0	86.0	48.0	48.0	14.0	14.0	14.0
Total Split (%)	38.0%	86.0%	48.0%	48.0%	14.0%	14.0%	14.0%
Yellow Time (s)	3.2	5.2	5.2	5.2	4.1	4.1	4.1
All-Red Time (s)	1.0	2.0	2.0	2.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.2	7.2	7.2	7.2	5.1	5.1	5.1
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None
Act Effect Green (s)	33.8	78.8	40.8	40.8	8.9	8.9	8.9
Actuated g/C Ratio	0.34	0.79	0.41	0.41	0.09	0.09	0.09
v/c Ratio	1.11	0.26	0.27	1.10	1.07	1.08	0.46
Control Delay	106.4	1.9	20.0	77.9	137.9	141.2	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	106.4	1.9	20.0	77.9	137.9	141.2	10.2
LOS	F	A	B	E	F	F	B
Approach Delay		60.1	57.2			90.5	
Approach LOS		E	E			F	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.11
 Intersection Signal Delay: 61.8
 Intersection Capacity Utilization 105.0%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service G

Splits and Phases: 7: I-5 NB Ramps & Genesee Avenue



HCM 6th Signalized Intersection Summary

7: I-5 NB Ramps & Genesee Avenue

Existing PM
01/20/2022



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	1168	4024	0	0	3091	1138	317	0	282			
Arrive On Green	0.56	1.00	0.00	0.00	0.41	0.41	0.09	0.00	0.09			
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	33.8	0.0	0.0	0.0	7.3	40.8	8.9	0.0	6.0			
Cycle Q Clear(g_c), s	33.8	0.0	0.0	0.0	7.3	40.8	8.9	0.0	6.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1168	4024	0	0	3091	1138	317	0	282			
V/C Ratio(X)	1.10	0.25	0.00	0.00	0.27	1.32	1.01	0.00	0.69			
Avail Cap(c_a), veh/h	1168	4024	0	0	3091	1138	317	0	282			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.82	0.82	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	21.8	0.0	0.0	0.0	19.7	29.6	45.5	0.0	44.2			
Incr Delay (d2), s/veh	57.8	0.1	0.0	0.0	0.2	149.3	52.9	0.0	7.2			
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	17.1	0.0	0.0	0.0	2.4	35.8	6.2	0.0	2.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.6	0.1	0.0	0.0	19.9	178.9	98.4	0.0	51.4			
LnGrp LOS	F	A	A	A	B	F	F	A	D			
Approach Vol, veh/h		2316			2332			516				
Approach Delay, s/veh		44.4			122.2			80.6				
Approach LOS		D			F			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		86.0			38.0	48.0		14.0				
Change Period (Y+Rc), s		7.2			* 4.2	7.2		5.1				
Max Green Setting (Gmax), s		78.8			* 34	40.8		8.9				
Max Q Clear Time (g_c+I1), s		2.0			35.8	42.8		10.9				
Green Ext Time (p_c), s		8.0			0.0	0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	83.1
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.

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕
Traffic Vol, veh/h	0	0	634	0	0	347
Future Vol, veh/h	0	0	634	0	0	347
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	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	682	0	0	373

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	341	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-
Pot Cap-1 Maneuver	0	655	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	655	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↑↑↑	↗ ↑↑↑			↑↑
Traffic Vol, veh/h	0	0	615	0	0	486
Future Vol, veh/h	0	0	615	0	0	486
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	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	661	0	0	523

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	331	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	567	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	567	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Timings
1: N Torrey Pines Road & N.U. System Dwy

Opening Year without Project AM

01/20/2022

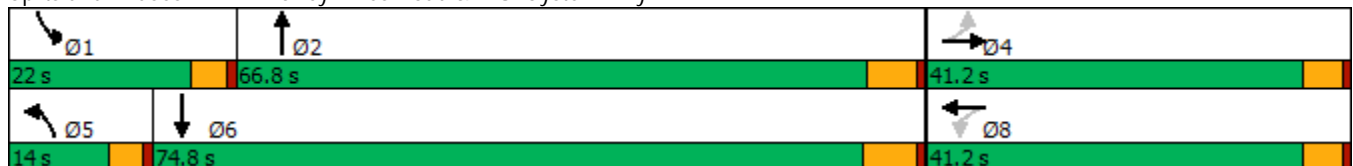


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕	↙	↕↕↕	↙	↕↕
Traffic Volume (vph)	1	0	17	0	1	500	38	644
Future Volume (vph)	1	0	17	0	1	500	38	644
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	10.0	4.0	10.0
Minimum Split (s)	39.9	39.9	41.2	41.2	9.5	23.0	9.5	22.5
Total Split (s)	41.2	41.2	41.2	41.2	14.0	66.8	22.0	74.8
Total Split (%)	31.7%	31.7%	31.7%	31.7%	10.8%	51.4%	16.9%	57.5%
Yellow Time (s)	3.9	3.9	3.9	3.9	3.4	4.9	3.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.9		4.9	4.4	5.9	4.4	6.2
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effect Green (s)		5.5		5.5	4.6	76.8	6.7	81.9
Actuated g/C Ratio		0.06		0.06	0.05	0.82	0.07	0.88
v/c Ratio		0.01		0.17	0.01	0.18	0.34	0.24
Control Delay		0.0		1.8	43.0	3.3	48.6	2.2
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		0.0		1.8	43.0	3.3	48.6	2.2
LOS		A		A	D	A	D	A
Approach Delay				1.8		3.3		4.8
Approach LOS				A		A		A

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 93.5	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.34	
Intersection Signal Delay: 4.0	Intersection LOS: A
Intersection Capacity Utilization 37.4%	ICU Level of Service A
Analysis Period (min) 15	

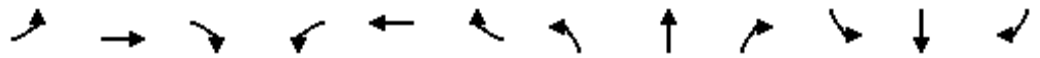
Splits and Phases: 1: N Torrey Pines Road & N.U. System Dwy



HCM 6th Signalized Intersection Summary
 1: N Torrey Pines Road & N.U. System Dwy

Opening Year without Project AM

01/20/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↑↑↑		↗	↑↑	
Traffic Volume (veh/h)	1	0	1	17	0	12	1	500	156	38	644	1
Future Volume (veh/h)	1	0	1	17	0	12	1	500	156	38	644	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	0	1	19	0	14	1	568	177	43	732	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	85	1	23	88	0	17	2	2965	902	54	2888	4
Arrive On Green	0.03	0.00	0.03	0.03	0.00	0.03	0.00	0.76	0.76	0.03	0.79	0.79
Sat Flow, veh/h	841	40	881	862	0	635	1781	3881	1181	1781	3641	5
Grp Volume(v), veh/h	2	0	0	33	0	0	1	496	249	43	357	376
Grp Sat Flow(s),veh/h/ln	1761	0	0	1498	0	0	1781	1702	1658	1781	1777	1869
Q Serve(g_s), s	0.0	0.0	0.0	1.8	0.0	0.0	0.0	3.5	3.6	2.1	4.5	4.5
Cycle Q Clear(g_c), s	0.1	0.0	0.0	1.9	0.0	0.0	0.0	3.5	3.6	2.1	4.5	4.5
Prop In Lane	0.50		0.50	0.58		0.42	1.00		0.71	1.00		0.00
Lane Grp Cap(c), veh/h	109	0	0	105	0	0	2	2600	1266	54	1409	1483
V/C Ratio(X)	0.02	0.00	0.00	0.31	0.00	0.00	0.49	0.19	0.20	0.79	0.25	0.25
Avail Cap(c_a), veh/h	694	0	0	689	0	0	198	2600	1266	363	1409	1483
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	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	0.0	0.0	41.9	0.0	0.0	43.2	2.8	2.8	41.6	2.3	2.3
Incr Delay (d2), s/veh	0.1	0.0	0.0	1.7	0.0	0.0	53.7	0.2	0.3	9.2	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.7	0.0	0.0	0.1	0.7	0.7	1.0	0.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	0.0	0.0	43.6	0.0	0.0	96.9	3.0	3.2	50.8	2.7	2.7
LnGrp LOS	D	A	A	D	A	A	F	A	A	D	A	A
Approach Vol, veh/h		2			33			746			776	
Approach Delay, s/veh		41.1			43.6			3.2			5.4	
Approach LOS		D			D			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	72.3		7.2	4.5	74.8		7.2				
Change Period (Y+Rc), s	4.4	* 6.2		4.9	4.4	6.2		4.9				
Max Green Setting (Gmax), s	17.6	* 61		36.3	9.6	68.6		36.3				
Max Q Clear Time (g_c+I1), s	4.1	5.6		2.1	2.0	6.5		3.9				
Green Ext Time (p_c), s	0.0	9.7		0.0	0.0	8.1		0.1				

Intersection Summary

HCM 6th Ctrl Delay	5.2
HCM 6th LOS	A

Notes

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

Timings
2: N Torrey Pines Road & Torrey Pines Science Park

Opening Year without Project AM

01/20/2022

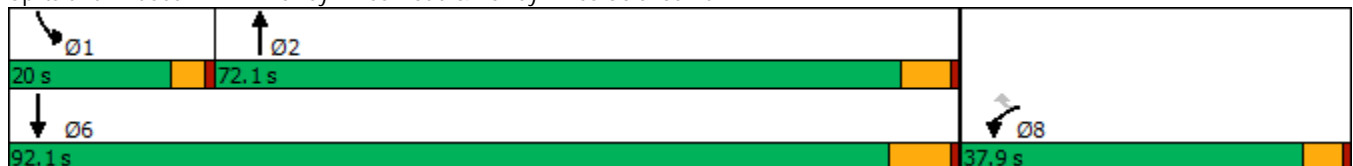


Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↗	↑↑↑	↙	↑↑
Traffic Volume (vph)	9	2	650	19	643
Future Volume (vph)	9	2	650	19	643
Turn Type	Prot	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	4.0	4.0	10.0	4.0	10.0
Minimum Split (s)	37.9	37.9	25.9	9.5	22.5
Total Split (s)	37.9	37.9	72.1	20.0	92.1
Total Split (%)	29.2%	29.2%	55.5%	15.4%	70.8%
Yellow Time (s)	3.9	3.9	4.9	3.4	6.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.9	4.4	7.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Max	None	Max
Act Effect Green (s)	5.2	5.2	91.2	5.8	95.3
Actuated g/C Ratio	0.05	0.05	0.89	0.06	0.93
v/c Ratio	0.12	0.02	0.19	0.22	0.23
Control Delay	48.4	33.5	2.3	50.3	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	33.5	2.3	50.3	1.2
LOS	D	C	A	D	A
Approach Delay	46.1		2.3		2.5
Approach LOS	D		A		A

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 102.4
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.23
 Intersection Signal Delay: 2.8
 Intersection LOS: A
 Intersection Capacity Utilization 31.0%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: N Torrey Pines Road & Torrey Pines Science Park



HCM 6th Signalized Intersection Summary
 2: N Torrey Pines Road & Torrey Pines Science Park

Opening Year without Project AM
 01/20/2022



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶	↷	↕↕↕		↶	↷↷
Traffic Volume (veh/h)	9	2	650	62	19	643
Future Volume (veh/h)	9	2	650	62	19	643
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	2	765	73	22	756
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	22	19	3811	362	33	3080
Arrive On Green	0.01	0.01	0.80	0.80	0.02	0.87
Sat Flow, veh/h	1781	1585	4912	450	1781	3647
Grp Volume(v), veh/h	11	2	548	290	22	756
Grp Sat Flow(s),veh/h/ln	1781	1585	1702	1789	1781	1777
Q Serve(g_s), s	0.6	0.1	3.7	3.7	1.2	3.5
Cycle Q Clear(g_c), s	0.6	0.1	3.7	3.7	1.2	3.5
Prop In Lane	1.00	1.00		0.25	1.00	
Lane Grp Cap(c), veh/h	22	19	2735	1438	33	3080
V/C Ratio(X)	0.51	0.10	0.20	0.20	0.67	0.25
Avail Cap(c_a), veh/h	599	533	2735	1438	283	3080
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.2	48.0	2.3	2.3	47.9	1.1
Incr Delay (d2), s/veh	6.7	0.9	0.2	0.3	8.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	0.6	0.7	0.6	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	54.9	48.8	2.4	2.6	56.4	1.3
LnGrp LOS	D	D	A	A	E	A
Approach Vol, veh/h	13		838			778
Approach Delay, s/veh	54.0		2.5			2.9
Approach LOS	D		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.2	85.9			92.1	6.1
Change Period (Y+Rc), s	4.4	* 7			7.0	4.9
Max Green Setting (Gmax), s	15.6	* 66			85.1	33.0
Max Q Clear Time (g_c+I1), s	3.2	5.7			5.5	2.6
Green Ext Time (p_c), s	0.0	12.0			9.6	0.0

Intersection Summary

HCM 6th Ctrl Delay	3.1
HCM 6th LOS	A

Notes

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

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	-	-	0	-	-	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	47	16	3	11
Future Vol, veh/h	21	177	47	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	49	17	3	12

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	66	0	-	0	288 58
Stage 1	-	-	-	-	58 -
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	1536	-	-	-	702 1008
Stage 1	-	-	-	-	965 -
Stage 2	-	-	-	-	808 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1536	-	-	-	691 1008
Mov Cap-2 Maneuver	-	-	-	-	691 -
Stage 1	-	-	-	-	950 -
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)	1536	-	-	-	918
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

Timings
5: N Torrey Pines Road & Science Park Road

Opening Year without Project AM

01/20/2022

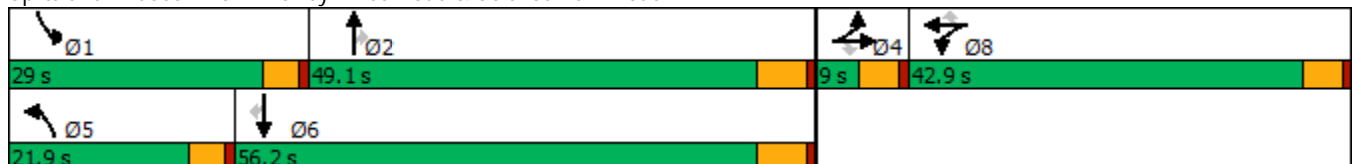


Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↖	↗	↖	↑↑↑	↗	↖	↑↑↑	↗
Traffic Volume (vph)	4	47	77	8	18	114	795	648	218	711	32
Future Volume (vph)	4	47	77	8	18	114	795	648	218	711	32
Turn Type	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4		8	8		5	2		1	6	
Permitted Phases		4			8			2			6
Detector Phase	4	4	8	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	6.0	10.0	10.0	4.0	20.0	20.0
Minimum Split (s)	8.9	8.9	42.9	42.9	42.9	10.4	28.7	28.7	8.4	25.7	25.7
Total Split (s)	9.0	9.0	42.9	42.9	42.9	21.9	49.1	49.1	29.0	56.2	56.2
Total Split (%)	6.9%	6.9%	33.0%	33.0%	33.0%	16.8%	37.8%	37.8%	22.3%	43.2%	43.2%
Yellow Time (s)	3.9	3.9	3.9	3.9	3.9	3.4	4.7	4.7	3.4	4.7	4.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	4.9	4.9	4.9	4.4	5.7	5.7	4.4	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effect Green (s)	4.2	4.2	8.2	8.2	8.2	12.0	45.9	45.9	17.8	51.7	51.7
Actuated g/C Ratio	0.05	0.05	0.09	0.09	0.09	0.13	0.50	0.50	0.20	0.57	0.57
v/c Ratio	0.17	0.26	0.32	0.32	0.08	0.55	0.35	0.65	0.71	0.28	0.04
Control Delay	51.2	3.1	47.7	47.5	0.6	48.4	16.6	4.7	47.3	12.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.2	3.1	47.7	47.5	0.6	48.4	16.6	4.7	47.3	12.3	0.1
LOS	D	A	D	D	A	D	B	A	D	B	A
Approach Delay	13.2			39.5			13.9			19.9	
Approach LOS	B			D			B			B	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 91.2
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 17.0
 Intersection LOS: B
 Intersection Capacity Utilization 69.1%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 5: N Torrey Pines Road & Science Park Road



HCM 6th Signalized Intersection Summary
5: N Torrey Pines Road & Science Park Road

Opening Year without Project AM
01/20/2022



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	795	648	218	711	32
Future Volume (veh/h)	9	4	47	77	8	18	114	795	648	218	711	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	893	728	245	799	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	58	23	66	314	0	135	162	2484	763	287	2842	836
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	1452	3563	0	1536	1781	5106	1569	1781	5106	1502
Grp Volume(v), veh/h	14	0	53	93	0	20	128	893	728	245	799	36
Grp Sat Flow(s),veh/h/ln	1806	0	1452	1781	0	1536	1781	1702	1569	1781	1702	1502
Q Serve(g_s), s	0.7	0.0	3.3	2.2	0.0	1.1	6.4	9.9	40.3	12.1	7.5	1.0
Cycle Q Clear(g_c), s	0.7	0.0	3.3	2.2	0.0	1.1	6.4	9.9	40.3	12.1	7.5	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	82	0	66	314	0	135	162	2484	763	287	2842	836
V/C Ratio(X)	0.17	0.00	0.81	0.30	0.00	0.15	0.79	0.36	0.95	0.86	0.28	0.04
Avail Cap(c_a), veh/h	82	0	66	1492	0	644	344	2484	763	483	2842	836
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	42.9	38.7	0.0	38.2	40.4	14.5	22.3	37.0	10.6	9.1
Incr Delay (d2), s/veh	1.0	0.0	50.7	0.5	0.0	0.5	8.4	0.4	23.1	7.6	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	2.1	1.0	0.0	0.4	3.0	3.5	17.6	5.6	2.5	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.7	0.0	93.6	39.3	0.0	38.7	48.8	14.9	45.4	44.6	10.8	9.2
LnGrp LOS	D	A	F	D	A	D	D	B	D	D	B	A
Approach Vol, veh/h		67			113			1749			1080	
Approach Delay, s/veh		83.0			39.2			30.1			18.4	
Approach LOS		F			D			C			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.0	49.8		9.0	12.6	56.2		12.9				
Change Period (Y+Rc), s	4.4	5.7		4.9	4.4	5.7		4.9				
Max Green Setting (Gmax), s	24.6	43.4		4.1	17.5	50.5		38.0				
Max Q Clear Time (g_c+I1), s	14.1	42.3		5.3	8.4	9.5		4.2				
Green Ext Time (p_c), s	0.5	0.8		0.0	0.2	6.0		0.4				

Intersection Summary

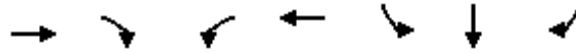
HCM 6th Ctrl Delay	27.4
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Timings
6: I-5 SB Ramps & Genesee Avenue

Opening Year without Project AM
01/20/2022

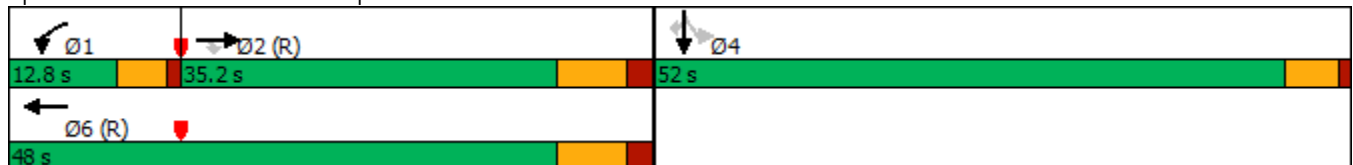


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑↑↑	↗↗	↖↖	↑↑↑	↘	↖	↗↗
Traffic Volume (vph)	589	195	173	2018	1416	1	1586
Future Volume (vph)	589	195	173	2018	1416	1	1586
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	2		1	6		4	
Permitted Phases		2			4		4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	13.0	13.0	5.0	13.0	5.0	5.0	5.0
Minimum Split (s)	30.2	30.2	9.7	33.2	10.1	10.1	10.1
Total Split (s)	35.2	35.2	12.8	48.0	52.0	52.0	52.0
Total Split (%)	35.2%	35.2%	12.8%	48.0%	52.0%	52.0%	52.0%
Yellow Time (s)	5.2	5.2	3.7	5.2	4.1	4.1	4.1
All-Red Time (s)	2.0	2.0	1.0	2.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	4.7	7.2	5.1	5.1	5.1
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Act Effect Green (s)	28.0	28.0	8.1	40.8	46.9	46.9	46.9
Actuated g/C Ratio	0.28	0.28	0.08	0.41	0.47	0.47	0.47
v/c Ratio	0.31	0.23	0.69	1.07	0.99	0.99	1.28
Control Delay	28.8	4.6	51.7	67.3	56.8	56.5	158.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.8	4.6	51.7	67.3	56.8	56.5	158.6
LOS	C	A	D	E	E	E	F
Approach Delay	22.8			66.1		110.5	
Approach LOS	C			E		F	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.28
 Intersection Signal Delay: 82.7
 Intersection LOS: F
 Intersection Capacity Utilization 104.7%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 6: I-5 SB Ramps & Genesee Avenue



HCM 6th Signalized Intersection Summary

6: I-5 SB Ramps & Genesee Avenue

Opening Year without Project AM

01/20/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑	↗↘	↖↗	↑↑↑					↘	↗	↗↘
Traffic Volume (veh/h)	0	589	195	173	2018	0	0	0	0	1416	1	1586
Future Volume (veh/h)	0	589	195	173	2018	0	0	0	0	1416	1	1586
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	647	214	190	2218	0				1557	0	1743
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	2183	804	252	2083	0				1671	0	1487
Arrive On Green	0.00	0.29	0.29	0.15	0.82	0.00				0.47	0.00	0.47
Sat Flow, veh/h	0	7930	2790	3456	5274	0				3563	0	3170
Grp Volume(v), veh/h	0	647	214	190	2218	0				1557	0	1743
Grp Sat Flow(s),veh/h/ln	0	1515	1395	1728	1702	0				1781	0	1585
Q Serve(g_s), s	0.0	6.6	5.9	5.3	40.8	0.0				41.2	0.0	46.9
Cycle Q Clear(g_c), s	0.0	6.6	5.9	5.3	40.8	0.0				41.2	0.0	46.9
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2183	804	252	2083	0				1671	0	1487
V/C Ratio(X)	0.00	0.30	0.27	0.75	1.06	0.00				0.93	0.00	1.17
Avail Cap(c_a), veh/h	0	2183	804	280	2083	0				1671	0	1487
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	0.71	0.71	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	27.7	27.4	41.9	9.2	0.0				25.0	0.0	26.5
Incr Delay (d2), s/veh	0.0	0.3	0.8	7.3	37.0	0.0				9.9	0.0	85.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.3	1.9	2.3	10.3	0.0				18.7	0.0	34.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	28.1	28.3	49.1	46.2	0.0				35.0	0.0	111.6
LnGrp LOS	A	C	C	D	F	A				C	A	F
Approach Vol, veh/h		861			2408						3300	
Approach Delay, s/veh		28.1			46.5						75.5	
Approach LOS		C			D						E	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	12.0	36.0		52.0		48.0						
Change Period (Y+Rc), s	* 4.7	7.2		5.1		7.2						
Max Green Setting (Gmax), s	* 8.1	28.0		46.9		40.8						
Max Q Clear Time (g_c+I1), s	7.3	8.6		48.9		42.8						
Green Ext Time (p_c), s	0.0	4.6		0.0		0.0						

Intersection Summary

HCM 6th Ctrl Delay	58.6
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.

Timings
7: I-5 NB Ramps & Genesee Avenue

Opening Year without Project AM
01/20/2022

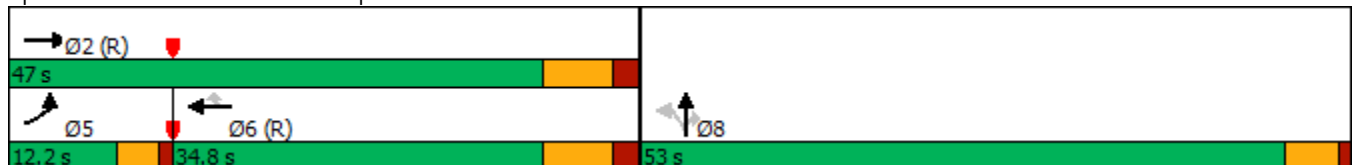


Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations	↔↔	↑↑↑	↑↑↑↑	↔↔	↔	↑	↔↔
Traffic Volume (vph)	219	1728	727	576	1391	3	995
Future Volume (vph)	219	1728	727	576	1391	3	995
Turn Type	Prot	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases				6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	13.0	11.0	11.0	5.0	5.0	5.0
Minimum Split (s)	9.2	35.2	32.2	32.2	10.1	10.1	10.1
Total Split (s)	12.2	47.0	34.8	34.8	53.0	53.0	53.0
Total Split (%)	12.2%	47.0%	34.8%	34.8%	53.0%	53.0%	53.0%
Yellow Time (s)	3.2	5.2	5.2	5.2	4.1	4.1	4.1
All-Red Time (s)	1.0	2.0	2.0	2.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.2	7.2	7.2	7.2	5.1	5.1	5.1
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effect Green (s)	8.0	39.8	27.6	27.6	47.9	47.9	47.9
Actuated g/C Ratio	0.08	0.40	0.28	0.28	0.48	0.48	0.48
v/c Ratio	0.87	0.93	0.38	0.51	0.94	0.94	0.78
Control Delay	61.5	35.3	29.9	4.0	46.0	46.2	24.7
Queue Delay	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay	61.5	35.3	30.1	4.0	46.0	46.2	24.7
LOS	E	D	C	A	D	D	C
Approach Delay		38.3	18.6			37.2	
Approach LOS		D	B			D	

Intersection Summary





























Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 33.3
 Intersection LOS: C
 Intersection Capacity Utilization 104.7%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 7: I-5 NB Ramps & Genesee Avenue



HCM 6th Signalized Intersection Summary
7: I-5 NB Ramps & Genesee Avenue

Opening Year without Project AM
01/20/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			   	 		 	 			
Traffic Volume (veh/h)	219	1728	0	0	727	576	1391	3	995	0	0	0
Future Volume (veh/h)	219	1728	0	0	727	576	1391	3	995	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	1878	0	0	790	626	1514	0	1082			
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	276	2032	0	0	2091	770	1706	0	1518			
Arrive On Green	0.16	0.80	0.00	0.00	0.28	0.28	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	1878	0	0	790	626	1514	0	1082			
Grp Sat Flow(s),veh/h/ln	1728	1702	0	0	1515	1395	1781	0	1585			
Q Serve(g_s), s	6.7	28.4	0.0	0.0	8.4	20.9	38.5	0.0	27.0			
Cycle Q Clear(g_c), s	6.7	28.4	0.0	0.0	8.4	20.9	38.5	0.0	27.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	276	2032	0	0	2091	770	1706	0	1518			
V/C Ratio(X)	0.86	0.92	0.00	0.00	0.38	0.81	0.89	0.00	0.71			
Avail Cap(c_a), veh/h	276	2032	0	0	2091	770	1706	0	1518			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.68	0.68	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	41.5	9.0	0.0	0.0	29.3	33.8	23.6	0.0	20.6			
Incr Delay (d2), s/veh	16.9	6.2	0.0	0.0	0.5	9.2	7.3	0.0	2.9			
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	3.2	4.3	0.0	0.0	2.9	7.6	17.0	0.0	10.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.3	15.2	0.0	0.0	29.8	43.0	30.9	0.0	23.5			
LnGrp LOS	E	B	A	A	C	D	C	A	C			
Approach Vol, veh/h		2116			1416			2596				
Approach Delay, s/veh		20.1			35.6			27.8				
Approach LOS		C			D			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		47.0			12.2	34.8		53.0				
Change Period (Y+Rc), s		7.2			* 4.2	7.2		5.1				
Max Green Setting (Gmax), s		39.8			* 8	27.6		47.9				
Max Q Clear Time (g_c+I1), s		30.4			8.7	22.9		40.5				
Green Ext Time (p_c), s		7.1			0.0	2.9		5.9				

Intersection Summary

HCM 6th Ctrl Delay	26.9
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					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕
Traffic Vol, veh/h	0	0	512	0	0	683
Future Vol, veh/h	0	0	512	0	0	683
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	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	582	0	0	776

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	291	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	706	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	-	706	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑ ↑	↑ ↑ ↑			↑ ↑
Traffic Vol, veh/h	0	0	651	0	0	661
Future Vol, veh/h	0	0	651	0	0	661
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	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	740	0	0	751

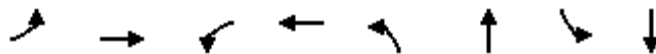
Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	370	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.14	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.92	-
Pot Cap-1 Maneuver	0	536	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	-	536	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Timings
1: N Torrey Pines Road & N.U. System Dwy

Opening Year without Project PM
01/20/2022

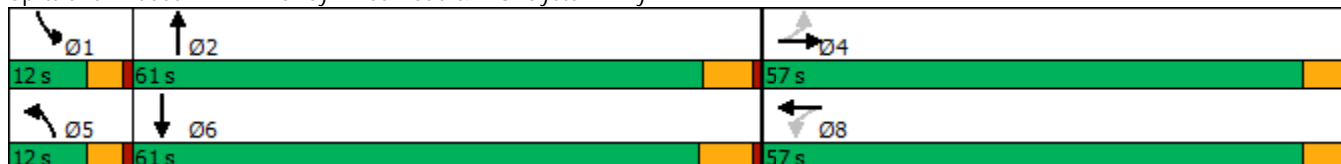


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕	↙	↕↕↕	↙	↕↕
Traffic Volume (vph)	1	0	144	0	1	782	4	586
Future Volume (vph)	1	0	144	0	1	782	4	586
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	10.0	4.0	10.0
Minimum Split (s)	39.9	39.9	41.2	41.2	9.5	23.0	9.5	22.5
Total Split (s)	57.0	57.0	57.0	57.0	12.0	61.0	12.0	61.0
Total Split (%)	43.8%	43.8%	43.8%	43.8%	9.2%	46.9%	9.2%	46.9%
Yellow Time (s)	3.9	3.9	3.9	3.9	3.4	4.9	3.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.9		4.9	4.4	5.9	4.4	6.2
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effect Green (s)		13.7		13.7	4.6	57.6	4.8	57.4
Actuated g/C Ratio		0.16		0.16	0.05	0.69	0.06	0.68
v/c Ratio		0.01		0.71	0.01	0.25	0.04	0.26
Control Delay		0.0		36.2	42.0	6.2	41.2	6.6
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		0.0		36.2	42.0	6.2	41.2	6.6
LOS		A		D	D	A	D	A
Approach Delay				36.2		6.2		6.8
Approach LOS				D		A		A

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 83.9
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 9.9
 Intersection Capacity Utilization 41.6%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 1: N Torrey Pines Road & N.U. System Dwy



HCM 6th Signalized Intersection Summary
 1: N Torrey Pines Road & N.U. System Dwy

Opening Year without Project PM

01/20/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↕↕		↕	↕↕	
Traffic Volume (veh/h)	1	0	1	144	0	42	1	782	23	4	586	1
Future Volume (veh/h)	1	0	1	144	0	42	1	782	23	4	586	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	0	1	155	0	45	1	841	25	4	630	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	20	137	265	1	55	2	3287	98	8	2360	4
Arrive On Green	0.17	0.00	0.17	0.17	0.00	0.17	0.00	0.65	0.65	0.00	0.65	0.65
Sat Flow, veh/h	692	118	810	1121	5	327	1781	5096	151	1781	3640	6
Grp Volume(v), veh/h	2	0	0	200	0	0	1	561	305	4	307	324
Grp Sat Flow(s),veh/h/ln	1621	0	0	1453	0	0	1781	1702	1843	1781	1777	1869
Q Serve(g_s), s	0.0	0.0	0.0	11.2	0.0	0.0	0.0	6.0	6.0	0.2	6.3	6.3
Cycle Q Clear(g_c), s	0.1	0.0	0.0	11.3	0.0	0.0	0.0	6.0	6.0	0.2	6.3	6.3
Prop In Lane	0.50		0.50	0.77		0.22	1.00		0.08	1.00		0.00
Lane Grp Cap(c), veh/h	338	0	0	321	0	0	2	2196	1189	8	1152	1212
V/C Ratio(X)	0.01	0.00	0.00	0.62	0.00	0.00	0.48	0.26	0.26	0.53	0.27	0.27
Avail Cap(c_a), veh/h	983	0	0	960	0	0	158	2196	1189	158	1152	1212
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	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.5	0.0	0.0	34.2	0.0	0.0	42.6	6.4	6.4	42.4	6.4	6.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.0	0.0	0.0	52.2	0.3	0.5	19.7	0.6	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	0.0	0.0	0.0	4.1	0.0	0.0	0.1	1.7	1.9	0.1	2.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.5	0.0	0.0	36.2	0.0	0.0	94.8	6.7	7.0	62.1	7.0	6.9
LnGrp LOS	C	A	A	D	A	A	F	A	A	E	A	A
Approach Vol, veh/h		2			200			867				635
Approach Delay, s/veh		29.5			36.2			6.9				7.3
Approach LOS		C			D			A				A
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.8	61.3		19.4	4.5	61.6		19.4				
Change Period (Y+Rc), s	4.4	* 6.2		4.9	4.4	6.2		4.9				
Max Green Setting (Gmax), s	7.6	* 55		52.1	7.6	54.8		52.1				
Max Q Clear Time (g_c+I1), s	2.2	8.0		2.1	2.0	8.3		13.3				
Green Ext Time (p_c), s	0.0	11.2		0.0	0.0	6.5		1.3				

Intersection Summary

HCM 6th Ctrl Delay	10.5
HCM 6th LOS	B

Notes

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

Timings
2: N Torrey Pines Road & Torrey Pines Science Park

Opening Year without Project PM

01/20/2022

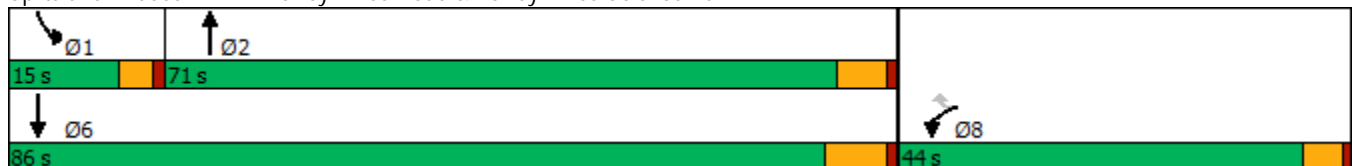


Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↗	↑↑↑	↙	↑↑
Traffic Volume (vph)	52	22	783	2	727
Future Volume (vph)	52	22	783	2	727
Turn Type	Prot	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	4.0	4.0	10.0	4.0	10.0
Minimum Split (s)	37.9	37.9	25.9	9.5	22.5
Total Split (s)	44.0	44.0	71.0	15.0	86.0
Total Split (%)	33.8%	33.8%	54.6%	11.5%	66.2%
Yellow Time (s)	3.9	3.9	4.9	3.4	6.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.9	4.4	7.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Max	None	Max
Act Effect Green (s)	7.5	7.5	82.4	4.7	83.4
Actuated g/C Ratio	0.08	0.08	0.83	0.05	0.84
v/c Ratio	0.42	0.17	0.20	0.02	0.26
Control Delay	52.8	19.0	2.8	46.0	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	52.8	19.0	2.8	46.0	2.6
LOS	D	B	A	D	A
Approach Delay	42.7		2.8		2.7
Approach LOS	D		A		A

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 99.5
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.42
 Intersection Signal Delay: 4.6
 Intersection LOS: A
 Intersection Capacity Utilization 33.3%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: N Torrey Pines Road & Torrey Pines Science Park



HCM 6th Signalized Intersection Summary
 2: N Torrey Pines Road & Torrey Pines Science Park

Opening Year without Project PM
 01/20/2022



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶	↷	↕↕↕		↶	↷
Traffic Volume (veh/h)	52	22	783	8	2	727
Future Volume (veh/h)	52	22	783	8	2	727
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	56	24	842	9	2	782
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	83	74	4064	43	4	2944
Arrive On Green	0.05	0.05	0.78	0.78	0.00	0.83
Sat Flow, veh/h	1781	1585	5377	56	1781	3647
Grp Volume(v), veh/h	56	24	550	301	2	782
Grp Sat Flow(s),veh/h/ln	1781	1585	1702	1860	1781	1777
Q Serve(g_s), s	3.0	1.4	4.0	4.0	0.1	4.6
Cycle Q Clear(g_c), s	3.0	1.4	4.0	4.0	0.1	4.6
Prop In Lane	1.00	1.00		0.03	1.00	
Lane Grp Cap(c), veh/h	83	74	2656	1452	4	2944
V/C Ratio(X)	0.67	0.32	0.21	0.21	0.52	0.27
Avail Cap(c_a), veh/h	730	650	2656	1452	198	2944
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.7	44.0	2.7	2.7	47.5	1.8
Incr Delay (d2), s/veh	3.5	0.9	0.2	0.3	34.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.6	0.8	0.9	0.1	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.2	44.9	2.9	3.1	82.3	2.0
LnGrp LOS	D	D	A	A	F	A
Approach Vol, veh/h	80		851			784
Approach Delay, s/veh	47.3		3.0			2.2
Approach LOS	D		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	4.6	81.4			86.0	9.3
Change Period (Y+Rc), s	4.4	* 7			7.0	4.9
Max Green Setting (Gmax), s	10.6	* 65			79.0	39.1
Max Q Clear Time (g_c+I1), s	2.1	6.0			6.6	5.0
Green Ext Time (p_c), s	0.0	12.1			10.0	0.1

Intersection Summary

HCM 6th Ctrl Delay	4.7
HCM 6th LOS	A

Notes

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

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	-	-	0	-	-	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
Stage 1	-	-	-	-	412
Stage 2	-	-	-	-	139
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1067	-	-	-	495
Stage 1	-	-	-	-	669
Stage 2	-	-	-	-	888
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1067	-	-	-	466
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

Timings
5: N Torrey Pines Road & Science Park Road

Opening Year without Project PM

01/20/2022

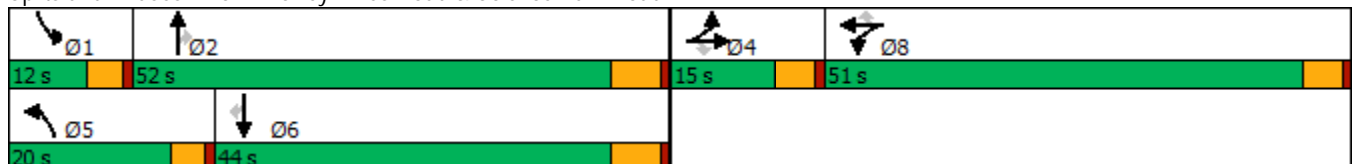


Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↖	↗	↖	↑↑↑	↗	↖	↑↑↑	↗
Traffic Volume (vph)	2	64	523	4	162	69	982	102	19	797	12
Future Volume (vph)	2	64	523	4	162	69	982	102	19	797	12
Turn Type	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4		8	8		5	2		1	6	
Permitted Phases		4			8			2			6
Detector Phase	4	4	8	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	6.0	10.0	10.0	4.0	20.0	20.0
Minimum Split (s)	8.9	8.9	42.9	42.9	42.9	10.4	28.7	28.7	8.4	25.7	25.7
Total Split (s)	15.0	15.0	51.0	51.0	51.0	20.0	52.0	52.0	12.0	44.0	44.0
Total Split (%)	11.5%	11.5%	39.2%	39.2%	39.2%	15.4%	40.0%	40.0%	9.2%	33.8%	33.8%
Yellow Time (s)	3.9	3.9	3.9	3.9	3.9	3.4	4.7	4.7	3.4	4.7	4.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	4.9	4.9	4.9	4.4	5.7	5.7	4.4	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effect Green (s)	6.8	6.8	23.0	23.0	23.0	9.5	50.0	50.0	6.7	42.9	42.9
Actuated g/C Ratio	0.07	0.07	0.24	0.24	0.24	0.10	0.52	0.52	0.07	0.44	0.44
v/c Ratio	0.16	0.28	0.69	0.70	0.35	0.42	0.39	0.13	0.17	0.37	0.02
Control Delay	51.7	3.0	44.2	44.7	6.8	53.1	18.2	4.8	52.4	22.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.7	3.0	44.2	44.7	6.8	53.1	18.2	4.8	52.4	22.6	0.1
LOS	D	A	D	D	A	D	B	A	D	C	A
Approach Delay	14.2			35.6			19.1			22.9	
Approach LOS	B			D			B			C	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 97
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 24.2
 Intersection LOS: C
 Intersection Capacity Utilization 60.6%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 5: N Torrey Pines Road & Science Park Road



HCM 6th Signalized Intersection Summary
5: N Torrey Pines Road & Science Park Road

Opening Year without Project PM
01/20/2022



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	982	102	19	797	12
Future Volume (veh/h)	17	2	64	523	4	162	69	982	102	19	797	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.98	1.00		0.99	1.00		0.93
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	1034	107	20	839	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	87	825	0	359	95	2465	759	31	2279	657
Arrive On Green	0.06	0.06	0.06	0.23	0.00	0.23	0.05	0.48	0.48	0.02	0.45	0.45
Sat Flow, veh/h	1611	179	1429	3563	0	1552	1781	5106	1572	1781	5106	1473
Grp Volume(v), veh/h	20	0	67	554	0	171	73	1034	107	20	839	13
Grp Sat Flow(s),veh/h/ln	1790	0	1429	1781	0	1552	1781	1702	1572	1781	1702	1473
Q Serve(g_s), s	1.0	0.0	4.4	13.6	0.0	9.1	3.9	12.6	3.6	1.1	10.4	0.5
Cycle Q Clear(g_c), s	1.0	0.0	4.4	13.6	0.0	9.1	3.9	12.6	3.6	1.1	10.4	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	109	0	87	825	0	359	95	2465	759	31	2279	657
V/C Ratio(X)	0.18	0.00	0.77	0.67	0.00	0.48	0.76	0.42	0.14	0.65	0.37	0.02
Avail Cap(c_a), veh/h	188	0	150	1712	0	746	290	2465	759	141	2279	657
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	42.8	0.0	44.4	33.5	0.0	31.8	44.8	16.1	13.8	46.8	17.6	14.8
Incr Delay (d2), s/veh	0.8	0.0	13.0	1.0	0.0	1.0	11.9	0.5	0.4	20.9	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	1.9	5.9	0.0	3.5	2.0	4.5	1.3	0.6	3.8	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.5	0.0	57.4	34.5	0.0	32.8	56.7	16.6	14.2	67.8	18.1	14.9
LnGrp LOS	D	A	E	C	A	C	E	B	B	E	B	B
Approach Vol, veh/h		87			725			1214			872	
Approach Delay, s/veh		54.2			34.1			18.8			19.1	
Approach LOS		D			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	52.0		10.8	9.5	48.5		27.1				
Change Period (Y+Rc), s	4.4	5.7		4.9	4.4	5.7		4.9				
Max Green Setting (Gmax), s	7.6	46.3		10.1	15.6	38.3		46.1				
Max Q Clear Time (g_c+I1), s	3.1	14.6		6.4	5.9	12.4		15.6				
Green Ext Time (p_c), s	0.0	8.2		0.1	0.1	5.8		2.8				

Intersection Summary

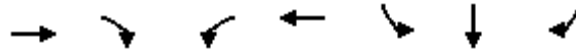
HCM 6th Ctrl Delay	23.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Timings
6: I-5 SB Ramps & Genesee Avenue

Opening Year without Project PM
01/20/2022

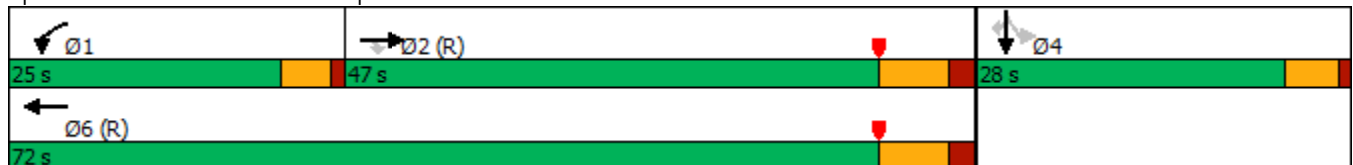


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑↑↑	↗↗	↘↘	↑↑↑	↘	↗	↗↗
Traffic Volume (vph)	2034	934	391	761	387	2	350
Future Volume (vph)	2034	934	391	761	387	2	350
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	2		1	6		4	
Permitted Phases		2			4		4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	13.0	13.0	5.0	13.0	5.0	5.0	5.0
Minimum Split (s)	30.2	30.2	9.7	33.2	10.1	10.1	10.1
Total Split (s)	47.0	47.0	25.0	72.0	28.0	28.0	28.0
Total Split (%)	47.0%	47.0%	25.0%	72.0%	28.0%	28.0%	28.0%
Yellow Time (s)	5.2	5.2	3.7	5.2	4.1	4.1	4.1
All-Red Time (s)	2.0	2.0	1.0	2.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	4.7	7.2	5.1	5.1	5.1
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Act Effect Green (s)	47.3	47.3	17.0	69.0	18.7	18.7	18.7
Actuated g/C Ratio	0.47	0.47	0.17	0.69	0.19	0.19	0.19
v/c Ratio	0.61	0.54	0.71	0.23	0.66	0.66	0.45
Control Delay	21.5	2.5	55.2	6.1	47.1	47.3	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.5	2.5	55.2	6.1	47.1	47.3	5.3
LOS	C	A	E	A	D	D	A
Approach Delay	15.6			22.7		27.4	
Approach LOS	B			C		C	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 19.1
 Intersection LOS: B
 Intersection Capacity Utilization 110.8%
 ICU Level of Service H
 Analysis Period (min) 15

Splits and Phases: 6: I-5 SB Ramps & Genesee Avenue



HCM 6th Signalized Intersection Summary
6: I-5 SB Ramps & Genesee Avenue

Opening Year without Project PM
01/20/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑	↗↘	↗↘	↑↑↑					↘	↗	↗↘
Traffic Volume (veh/h)	0	2034	934	391	761	0	0	0	0	387	2	350
Future Volume (veh/h)	0	2034	934	391	761	0	0	0	0	387	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	2164	994	416	810	0				413	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	4034	1486	491	3684	0				554	0	493
Arrive On Green	0.00	0.53	0.53	0.28	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	2164	994	416	810	0				413	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	18.7	25.9	11.4	0.0	0.0				11.1	0.0	11.2
Cycle Q Clear(g_c), s	0.0	18.7	25.9	11.4	0.0	0.0				11.1	0.0	11.2
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	4034	1486	491	3684	0				554	0	493
V/C Ratio(X)	0.00	0.54	0.67	0.85	0.22	0.00				0.75	0.00	0.75
Avail Cap(c_a), veh/h	0	4034	1486	702	3684	0				816	0	726
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	15.3	17.0	34.8	0.0	0.0				40.3	0.0	40.4
Incr Delay (d2), s/veh	0.0	0.5	2.4	6.2	0.1	0.0				2.1	0.0	2.6
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	5.7	7.6	4.3	0.0	0.0				5.0	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.8	19.4	40.9	0.1	0.0				42.5	0.0	43.0
LnGrp LOS	A	B	B	D	A	A				D	A	D
Approach Vol, veh/h		3158			1226						785	
Approach Delay, s/veh		16.9			14.0						42.7	
Approach LOS		B			B						D	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	18.9	60.5		20.6		79.4						
Change Period (Y+Rc), s	* 4.7	7.2		5.1		7.2						
Max Green Setting (Gmax), s	* 20	39.8		22.9		64.8						
Max Q Clear Time (g_c+I1), s	13.4	27.9		13.2		2.0						
Green Ext Time (p_c), s	0.8	10.8		2.3		5.8						

Intersection Summary

HCM 6th Ctrl Delay	20.1
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.

Timings
7: I-5 NB Ramps & Genesee Avenue

Opening Year without Project PM
01/20/2022

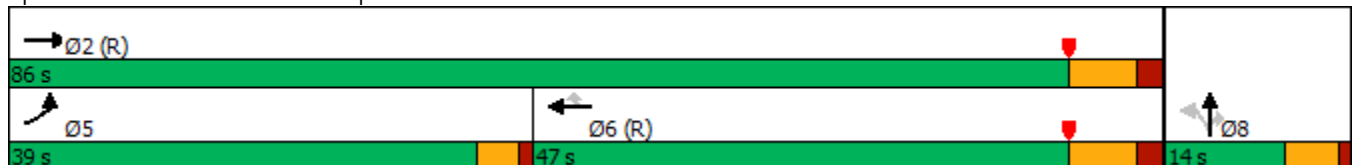


Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations	↖↖	↗↗↗	↖↖↖↖	↖↖	↖	↗	↖↖
Traffic Volume (vph)	1365	1059	842	1419	313	3	185
Future Volume (vph)	1365	1059	842	1419	313	3	185
Turn Type	Prot	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases				6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	13.0	11.0	11.0	5.0	5.0	5.0
Minimum Split (s)	9.2	35.2	32.2	32.2	10.1	10.1	10.1
Total Split (s)	39.0	86.0	47.0	47.0	14.0	14.0	14.0
Total Split (%)	39.0%	86.0%	47.0%	47.0%	14.0%	14.0%	14.0%
Yellow Time (s)	3.2	5.2	5.2	5.2	4.1	4.1	4.1
All-Red Time (s)	1.0	2.0	2.0	2.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.2	7.2	7.2	7.2	5.1	5.1	5.1
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None
Act Effect Green (s)	34.8	78.8	39.8	39.8	8.9	8.9	8.9
Actuated g/C Ratio	0.35	0.79	0.40	0.40	0.09	0.09	0.09
v/c Ratio	1.22	0.28	0.30	1.13	1.11	1.13	0.46
Control Delay	145.8	1.9	20.9	91.4	151.2	156.7	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	145.8	1.9	20.9	91.4	151.2	156.7	10.2
LOS	F	A	C	F	F	F	B
Approach Delay		82.9	65.2			100.8	
Approach LOS		F	E			F	

Intersection Summary




























Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.22
 Intersection Signal Delay: 76.9
 Intersection LOS: E
 Intersection Capacity Utilization 110.8%
 ICU Level of Service H
 Analysis Period (min) 15

Splits and Phases: 7: I-5 NB Ramps & Genesee Avenue



HCM 6th Signalized Intersection Summary
7: I-5 NB Ramps & Genesee Avenue

Opening Year without Project PM
01/20/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			   	 			 			
Traffic Volume (veh/h)	1365	1059	0	0	842	1419	313	3	185	0	0	0
Future Volume (veh/h)	1365	1059	0	0	842	1419	313	3	185	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	1127	0	0	896	1510	335	0	197			
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	1203	4024	0	0	3015	1110	317	0	282			
Arrive On Green	0.58	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	1127	0	0	896	1510	335	0	197			
Grp Sat Flow(s),veh/h/ln	1728	1702	0	0	1515	1395	1781	0	1585			
Q Serve(g_s), s	34.8	0.0	0.0	0.0	8.1	39.8	8.9	0.0	6.0			
Cycle Q Clear(g_c), s	34.8	0.0	0.0	0.0	8.1	39.8	8.9	0.0	6.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1203	4024	0	0	3015	1110	317	0	282			
V/C Ratio(X)	1.21	0.28	0.00	0.00	0.30	1.36	1.06	0.00	0.70			
Avail Cap(c_a), veh/h	1203	4024	0	0	3015	1110	317	0	282			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.76	0.76	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	20.9	0.0	0.0	0.0	20.6	30.1	45.5	0.0	44.2			
Incr Delay (d2), s/veh	99.5	0.1	0.0	0.0	0.3	167.9	66.2	0.0	7.4			
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	24.3	0.0	0.0	0.0	2.7	37.8	6.8	0.0	2.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	120.5	0.1	0.0	0.0	20.8	198.0	111.8	0.0	51.6			
LnGrp LOS	F	A	A	A	C	F	F	A	D			
Approach Vol, veh/h		2579			2406			532				
Approach Delay, s/veh		67.9			132.0			89.5				
Approach LOS		E			F			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		86.0			39.0	47.0		14.0				
Change Period (Y+Rc), s		7.2			* 4.2	7.2		5.1				
Max Green Setting (Gmax), s		78.8			* 35	39.8		8.9				
Max Q Clear Time (g_c+I1), s		2.0			36.8	41.8		10.9				
Green Ext Time (p_c), s		9.1			0.0	0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	97.9
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.

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕
Traffic Vol, veh/h	0	0	824	0	0	591
Future Vol, veh/h	0	0	824	0	0	591
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	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	886	0	0	635

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	443	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	562	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	-	562	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↙ ↚				↗ ↘
Traffic Vol, veh/h	0	0	805	0	0	730
Future Vol, veh/h	0	0	805	0	0	730
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	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	866	0	0	785

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	433	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	488	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %					
Mov Cap-1 Maneuver	-	488	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

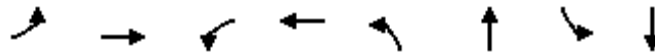
Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Timings
1: N Torrey Pines Road & N.U. System Dwy

Opening Year with Project AM

01/20/2022

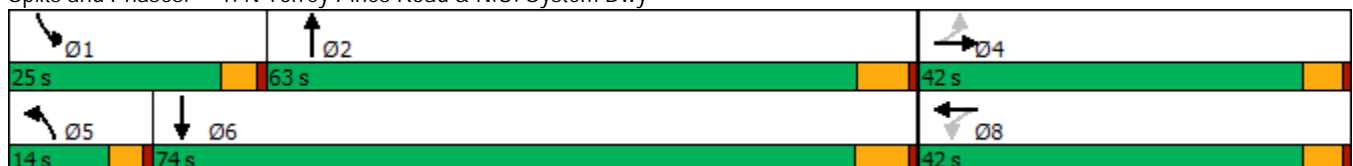


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕	↙	↕↕↕	↙	↕↕
Traffic Volume (vph)	1	0	26	0	2	511	61	644
Future Volume (vph)	1	0	26	0	2	511	61	644
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	10.0	4.0	10.0
Minimum Split (s)	39.9	39.9	41.2	41.2	9.5	23.0	9.5	22.5
Total Split (s)	42.0	42.0	42.0	42.0	14.0	63.0	25.0	74.0
Total Split (%)	32.3%	32.3%	32.3%	32.3%	10.8%	48.5%	19.2%	56.9%
Yellow Time (s)	3.9	3.9	3.9	3.9	3.4	4.9	3.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.9		4.9	4.4	5.9	4.4	6.2
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effect Green (s)		5.5		5.5	4.7	68.2	7.9	76.5
Actuated g/C Ratio		0.06		0.06	0.05	0.74	0.09	0.84
v/c Ratio		0.01		0.26	0.02	0.23	0.45	0.25
Control Delay		0.0		3.4	41.5	4.5	48.6	2.6
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		0.0		3.4	41.5	4.5	48.6	2.6
LOS		A		A	D	A	D	A
Approach Delay				3.4		4.6		6.6
Approach LOS				A		A		A

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 91.6	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.45	
Intersection Signal Delay: 5.5	Intersection LOS: A
Intersection Capacity Utilization 37.4%	ICU Level of Service A
Analysis Period (min) 15	

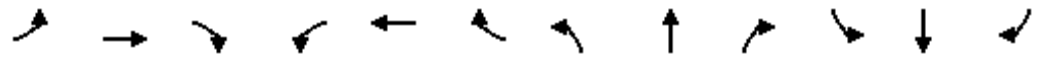
Splits and Phases: 1: N Torrey Pines Road & N.U. System Dwy



HCM 6th Signalized Intersection Summary
 1: N Torrey Pines Road & N.U. System Dwy

Opening Year with Project AM

01/20/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↕↕		↕	↕↕	
Traffic Volume (veh/h)	1	0	1	26	0	14	2	511	214	61	644	1
Future Volume (veh/h)	1	0	1	26	0	14	2	511	214	61	644	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	0	1	30	0	16	2	581	243	69	732	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	85	11	33	106	0	20	4	2610	1064	89	2843	4
Arrive On Green	0.04	0.00	0.04	0.04	0.00	0.04	0.00	0.73	0.73	0.05	0.78	0.78
Sat Flow, veh/h	584	277	861	966	0	515	1781	3561	1452	1781	3641	5
Grp Volume(v), veh/h	2	0	0	46	0	0	2	555	269	69	357	376
Grp Sat Flow(s),veh/h/ln	1722	0	0	1481	0	0	1781	1702	1609	1781	1777	1869
Q Serve(g_s), s	0.0	0.0	0.0	2.6	0.0	0.0	0.1	4.5	4.7	3.3	4.8	4.8
Cycle Q Clear(g_c), s	0.1	0.0	0.0	2.7	0.0	0.0	0.1	4.5	4.7	3.3	4.8	4.8
Prop In Lane	0.50		0.50	0.65		0.35	1.00		0.90	1.00		0.00
Lane Grp Cap(c), veh/h	128	0	0	126	0	0	4	2495	1179	89	1387	1460
V/C Ratio(X)	0.02	0.00	0.00	0.37	0.00	0.00	0.52	0.22	0.23	0.77	0.26	0.26
Avail Cap(c_a), veh/h	706	0	0	697	0	0	197	2495	1179	423	1387	1460
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	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.2	0.0	0.0	41.4	0.0	0.0	43.3	3.7	3.7	40.7	2.6	2.6
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.8	0.0	0.0	34.6	0.2	0.5	5.2	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.0	0.0	0.0	0.1	1.0	1.1	1.5	0.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.2	0.0	0.0	43.2	0.0	0.0	77.9	3.9	4.2	45.9	3.1	3.0
LnGrp LOS	D	A	A	D	A	A	E	A	A	D	A	A
Approach Vol, veh/h		2			46			826			802	
Approach Delay, s/veh		40.2			43.2			4.2			6.7	
Approach LOS		D			D			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.8	69.8		8.2	4.6	74.0		8.2				
Change Period (Y+Rc), s	4.4	* 6.2		4.9	4.4	6.2		4.9				
Max Green Setting (Gmax), s	20.6	* 57		37.1	9.6	67.8		37.1				
Max Q Clear Time (g_c+I1), s	5.3	6.7		2.1	2.1	6.8		4.7				
Green Ext Time (p_c), s	0.1	11.0		0.0	0.0	8.1		0.2				

Intersection Summary

HCM 6th Ctrl Delay	6.5
HCM 6th LOS	A

Notes

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

Timings
2: N Torrey Pines Road & Torrey Pines Science Park



Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↶	↷	↶↶↶	↶	↶↶
Traffic Volume (vph)	9	2	742	19	653
Future Volume (vph)	9	2	742	19	653
Turn Type	Prot	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	4.0	4.0	10.0	4.0	10.0
Minimum Split (s)	37.9	37.9	25.9	9.5	22.5
Total Split (s)	37.9	37.9	73.1	19.0	92.1
Total Split (%)	29.2%	29.2%	56.2%	14.6%	70.8%
Yellow Time (s)	3.9	3.9	4.9	3.4	6.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.9	4.4	7.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Max	None	Max
Act Effect Green (s)	5.2	5.2	91.2	5.8	95.3
Actuated g/C Ratio	0.05	0.05	0.89	0.06	0.93
v/c Ratio	0.12	0.02	0.21	0.22	0.23
Control Delay	48.4	33.5	2.4	50.3	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	33.5	2.4	50.3	1.2
LOS	D	C	A	D	A
Approach Delay	46.1		2.4		2.5
Approach LOS	D		A		A

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 102.4
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.23
 Intersection Signal Delay: 2.8
 Intersection LOS: A
 Intersection Capacity Utilization 31.3%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: N Torrey Pines Road & Torrey Pines Science Park



HCM 6th Signalized Intersection Summary

2: N Torrey Pines Road & Torrey Pines Science Park

Opening Year with Project AM

01/20/2022



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶	↷	↕↕↕		↶	↷↷
Traffic Volume (veh/h)	9	2	742	62	19	653
Future Volume (veh/h)	9	2	742	62	19	653
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	2	873	73	22	768
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	22	19	3858	322	33	3080
Arrive On Green	0.01	0.01	0.80	0.80	0.02	0.87
Sat Flow, veh/h	1781	1585	4971	400	1781	3647
Grp Volume(v), veh/h	11	2	618	328	22	768
Grp Sat Flow(s),veh/h/ln	1781	1585	1702	1798	1781	1777
Q Serve(g_s), s	0.6	0.1	4.3	4.3	1.2	3.6
Cycle Q Clear(g_c), s	0.6	0.1	4.3	4.3	1.2	3.6
Prop In Lane	1.00	1.00		0.22	1.00	
Lane Grp Cap(c), veh/h	22	19	2735	1445	33	3080
V/C Ratio(X)	0.51	0.10	0.23	0.23	0.67	0.25
Avail Cap(c_a), veh/h	599	533	2735	1445	265	3080
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.2	48.0	2.3	2.3	47.9	1.1
Incr Delay (d2), s/veh	6.7	0.9	0.2	0.4	8.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	0.8	0.9	0.6	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	54.9	48.8	2.5	2.7	56.4	1.3
LnGrp LOS	D	D	A	A	E	A
Approach Vol, veh/h	13		946			790
Approach Delay, s/veh	54.0		2.6			2.8
Approach LOS	D		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.2	85.9			92.1	6.1
Change Period (Y+Rc), s	4.4	* 7			7.0	4.9
Max Green Setting (Gmax), s	14.6	* 67			85.1	33.0
Max Q Clear Time (g_c+I1), s	3.2	6.3			5.6	2.6
Green Ext Time (p_c), s	0.0	14.3			9.8	0.0

Intersection Summary

HCM 6th Ctrl Delay	3.1
HCM 6th LOS	A

Notes

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

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	-	-	0	-	-	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	47	17	3	11
Future Vol, veh/h	21	177	47	17	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	49	18	3	12

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	67	0	-	0	288 58
Stage 1	-	-	-	-	58 -
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	1535	-	-	-	702 1008
Stage 1	-	-	-	-	965 -
Stage 2	-	-	-	-	808 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1535	-	-	-	691 1008
Mov Cap-2 Maneuver	-	-	-	-	691 -
Stage 1	-	-	-	-	950 -
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)	1535	-	-	-	918
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

Timings
5: N Torrey Pines Road & Science Park Road

Opening Year with Project AM

01/20/2022

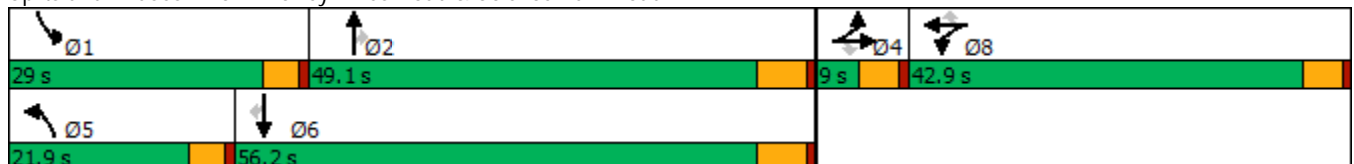


Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↖	↗	↖	↑↑↑	↗	↖	↑↑↑	↗
Traffic Volume (vph)	4	47	77	8	20	114	883	648	218	721	32
Future Volume (vph)	4	47	77	8	20	114	883	648	218	721	32
Turn Type	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4		8	8		5	2		1	6	
Permitted Phases		4			8			2			6
Detector Phase	4	4	8	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	6.0	10.0	10.0	4.0	20.0	20.0
Minimum Split (s)	8.9	8.9	42.9	42.9	42.9	10.4	28.7	28.7	8.4	25.7	25.7
Total Split (s)	9.0	9.0	42.9	42.9	42.9	21.9	49.1	49.1	29.0	56.2	56.2
Total Split (%)	6.9%	6.9%	33.0%	33.0%	33.0%	16.8%	37.8%	37.8%	22.3%	43.2%	43.2%
Yellow Time (s)	3.9	3.9	3.9	3.9	3.9	3.4	4.7	4.7	3.4	4.7	4.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	4.9	4.9	4.9	4.4	5.7	5.7	4.4	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effect Green (s)	4.2	4.2	8.2	8.2	8.2	12.0	45.9	45.9	17.8	51.7	51.7
Actuated g/C Ratio	0.05	0.05	0.09	0.09	0.09	0.13	0.50	0.50	0.20	0.57	0.57
v/c Ratio	0.17	0.26	0.32	0.32	0.08	0.55	0.39	0.65	0.71	0.28	0.04
Control Delay	51.2	3.1	47.7	47.5	0.6	48.4	17.0	4.7	47.3	12.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.2	3.1	47.7	47.5	0.6	48.4	17.0	4.7	47.3	12.4	0.1
LOS	D	A	D	D	A	D	B	A	D	B	A
Approach Delay	13.2			38.8			14.3			19.8	
Approach LOS	B			D			B			B	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 91.2
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 17.1
 Intersection LOS: B
 Intersection Capacity Utilization 69.1%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 5: N Torrey Pines Road & Science Park Road



HCM 6th Signalized Intersection Summary
5: N Torrey Pines Road & Science Park Road

Opening Year with Project AM
01/20/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↖	↗	↖	↑↑↑	↗	↖	↑↑↑	↗
Traffic Volume (veh/h)	9	4	47	77	8	20	114	883	648	218	721	32
Future Volume (veh/h)	9	4	47	77	8	20	114	883	648	218	721	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	22	128	992	728	245	810	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	58	23	66	315	0	136	162	2483	763	287	2842	836
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	1452	3563	0	1537	1781	5106	1569	1781	5106	1502
Grp Volume(v), veh/h	14	0	53	93	0	22	128	992	728	245	810	36
Grp Sat Flow(s),veh/h/ln	1806	0	1452	1781	0	1537	1781	1702	1569	1781	1702	1502
Q Serve(g_s), s	0.7	0.0	3.3	2.2	0.0	1.2	6.4	11.2	40.4	12.1	7.6	1.0
Cycle Q Clear(g_c), s	0.7	0.0	3.3	2.2	0.0	1.2	6.4	11.2	40.4	12.1	7.6	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	82	0	66	315	0	136	162	2483	763	287	2842	836
V/C Ratio(X)	0.17	0.00	0.81	0.30	0.00	0.16	0.79	0.40	0.95	0.86	0.29	0.04
Avail Cap(c_a), veh/h	82	0	66	1492	0	643	344	2483	763	483	2842	836
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	42.9	38.7	0.0	38.3	40.4	14.9	22.3	37.0	10.6	9.1
Incr Delay (d2), s/veh	1.0	0.0	50.8	0.5	0.0	0.6	8.4	0.5	23.1	7.6	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	0.3	0.0	2.1	1.0	0.0	0.5	3.0	4.0	17.7	5.6	2.5	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.7	0.0	93.7	39.2	0.0	38.8	48.8	15.3	45.5	44.6	10.9	9.2
LnGrp LOS	D	A	F	D	A	D	D	B	D	D	B	A
Approach Vol, veh/h		67			115			1848			1091	
Approach Delay, s/veh		83.0			39.2			29.5			18.4	
Approach LOS		F			D			C			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.0	49.8		9.0	12.6	56.2		12.9				
Change Period (Y+Rc), s	4.4	5.7		4.9	4.4	5.7		4.9				
Max Green Setting (Gmax), s	24.6	43.4		4.1	17.5	50.5		38.0				
Max Q Clear Time (g_c+I1), s	14.1	42.4		5.3	8.4	9.6		4.2				
Green Ext Time (p_c), s	0.5	0.8		0.0	0.2	6.1		0.4				

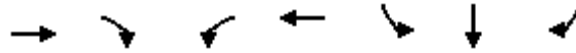
Intersection Summary

HCM 6th Ctrl Delay	27.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Timings
6: I-5 SB Ramps & Genesee Avenue

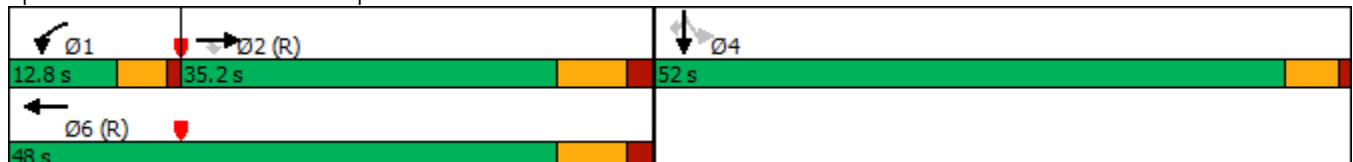


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑↑↑	↗↗	↖↖	↑↑↑	↘	↖	↗↗
Traffic Volume (vph)	593	198	173	2053	1416	1	1611
Future Volume (vph)	593	198	173	2053	1416	1	1611
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	2		1	6		4	
Permitted Phases		2			4		4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	13.0	13.0	5.0	13.0	5.0	5.0	5.0
Minimum Split (s)	30.2	30.2	9.7	33.2	10.1	10.1	10.1
Total Split (s)	35.2	35.2	12.8	48.0	52.0	52.0	52.0
Total Split (%)	35.2%	35.2%	12.8%	48.0%	52.0%	52.0%	52.0%
Yellow Time (s)	5.2	5.2	3.7	5.2	4.1	4.1	4.1
All-Red Time (s)	2.0	2.0	1.0	2.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	4.7	7.2	5.1	5.1	5.1
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Act Effect Green (s)	28.0	28.0	8.1	40.8	46.9	46.9	46.9
Actuated g/C Ratio	0.28	0.28	0.08	0.41	0.47	0.47	0.47
v/c Ratio	0.31	0.23	0.69	1.09	0.99	0.99	1.30
Control Delay	28.9	4.6	51.4	74.2	56.8	56.5	167.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	4.6	51.4	74.2	56.8	56.5	167.2
LOS	C	A	D	E	E	E	F
Approach Delay	22.8			72.4		115.5	
Approach LOS	C			E		F	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.30
 Intersection Signal Delay: 87.5
 Intersection LOS: F
 Intersection Capacity Utilization 106.3%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 6: I-5 SB Ramps & Genesee Avenue



HCM 6th Signalized Intersection Summary
6: I-5 SB Ramps & Genesee Avenue

Opening Year with Project AM
01/20/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑	↗↘	↗↘	↑↑↑					↘	↗	↗↘
Traffic Volume (veh/h)	0	593	198	173	2053	0	0	0	0	1416	1	1611
Future Volume (veh/h)	0	593	198	173	2053	0	0	0	0	1416	1	1611
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	652	218	190	2256	0				1557	0	1770
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	2183	804	252	2083	0				1671	0	1487
Arrive On Green	0.00	0.29	0.29	0.15	0.82	0.00				0.47	0.00	0.47
Sat Flow, veh/h	0	7930	2790	3456	5274	0				3563	0	3170
Grp Volume(v), veh/h	0	652	218	190	2256	0				1557	0	1770
Grp Sat Flow(s),veh/h/ln	0	1515	1395	1728	1702	0				1781	0	1585
Q Serve(g_s), s	0.0	6.7	6.0	5.3	40.8	0.0				41.2	0.0	46.9
Cycle Q Clear(g_c), s	0.0	6.7	6.0	5.3	40.8	0.0				41.2	0.0	46.9
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2183	804	252	2083	0				1671	0	1487
V/C Ratio(X)	0.00	0.30	0.27	0.75	1.08	0.00				0.93	0.00	1.19
Avail Cap(c_a), veh/h	0	2183	804	280	2083	0				1671	0	1487
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	0.70	0.70	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	27.7	27.5	41.9	9.2	0.0				25.0	0.0	26.5
Incr Delay (d2), s/veh	0.0	0.4	0.8	7.2	44.0	0.0				9.9	0.0	92.7
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	2.3	2.0	2.3	11.6	0.0				18.7	0.0	35.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	28.1	28.3	49.0	53.2	0.0				35.0	0.0	119.3
LnGrp LOS	A	C	C	D	F	A				C	A	F
Approach Vol, veh/h		870			2446						3327	
Approach Delay, s/veh		28.1			52.9						79.8	
Approach LOS		C			D						E	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	12.0	36.0		52.0		48.0						
Change Period (Y+Rc), s	* 4.7	7.2		5.1		7.2						
Max Green Setting (Gmax), s	* 8.1	28.0		46.9		40.8						
Max Q Clear Time (g_c+I1), s	7.3	8.7		48.9		42.8						
Green Ext Time (p_c), s	0.0	4.7		0.0		0.0						

Intersection Summary

HCM 6th Ctrl Delay	63.1
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.

Timings
7: I-5 NB Ramps & Genesee Avenue

Opening Year with Project AM
01/20/2022

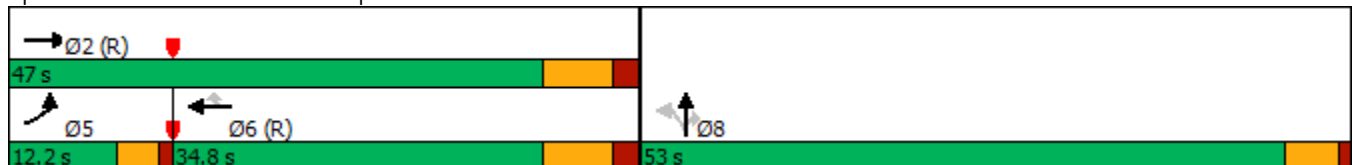


Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations	↶↷	↑↑↑	↑↑↑↑	↶↷	↶	↑	↶↷
Traffic Volume (vph)	222	1729	739	576	1414	3	995
Future Volume (vph)	222	1729	739	576	1414	3	995
Turn Type	Prot	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases				6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	13.0	11.0	11.0	5.0	5.0	5.0
Minimum Split (s)	9.2	35.2	32.2	32.2	10.1	10.1	10.1
Total Split (s)	12.2	47.0	34.8	34.8	53.0	53.0	53.0
Total Split (%)	12.2%	47.0%	34.8%	34.8%	53.0%	53.0%	53.0%
Yellow Time (s)	3.2	5.2	5.2	5.2	4.1	4.1	4.1
All-Red Time (s)	1.0	2.0	2.0	2.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.2	7.2	7.2	7.2	5.1	5.1	5.1
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	8.0	39.8	27.6	27.6	47.9	47.9	47.9
Actuated g/C Ratio	0.08	0.40	0.28	0.28	0.48	0.48	0.48
v/c Ratio	0.88	0.93	0.39	0.51	0.95	0.96	0.78
Control Delay	62.9	35.3	30.0	4.0	48.7	49.2	24.7
Queue Delay	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	62.9	35.3	30.3	4.0	48.7	49.2	24.7
LOS	E	D	C	A	D	D	C
Approach Delay		38.4	18.8			38.9	
Approach LOS		D	B			D	

Intersection Summary





























Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.96
 Intersection Signal Delay: 34.1
 Intersection LOS: C
 Intersection Capacity Utilization 106.3%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 7: I-5 NB Ramps & Genesee Avenue



HCM 6th Signalized Intersection Summary
7: I-5 NB Ramps & Genesee Avenue

Opening Year with Project AM
01/20/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			   	 		 	 			
Traffic Volume (veh/h)	222	1729	0	0	739	576	1414	3	995	0	0	0
Future Volume (veh/h)	222	1729	0	0	739	576	1414	3	995	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	241	1879	0	0	803	626	1539	0	1082			
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	276	2032	0	0	2091	770	1706	0	1518			
Arrive On Green	0.16	0.80	0.00	0.00	0.28	0.28	0.48	0.00	0.48			
Sat Flow, veh/h	3456	5274	0	0	7930	2790	3563	0	3170			
Grp Volume(v), veh/h	241	1879	0	0	803	626	1539	0	1082			
Grp Sat Flow(s),veh/h/ln	1728	1702	0	0	1515	1395	1781	0	1585			
Q Serve(g_s), s	6.8	28.4	0.0	0.0	8.6	20.9	39.6	0.0	27.0			
Cycle Q Clear(g_c), s	6.8	28.4	0.0	0.0	8.6	20.9	39.6	0.0	27.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	276	2032	0	0	2091	770	1706	0	1518			
V/C Ratio(X)	0.87	0.92	0.00	0.00	0.38	0.81	0.90	0.00	0.71			
Avail Cap(c_a), veh/h	276	2032	0	0	2091	770	1706	0	1518			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.68	0.68	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	41.5	9.0	0.0	0.0	29.3	33.8	23.9	0.0	20.6			
Incr Delay (d2), s/veh	18.3	6.2	0.0	0.0	0.5	9.2	8.2	0.0	2.9			
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	3.3	4.3	0.0	0.0	3.0	7.6	17.6	0.0	10.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.8	15.3	0.0	0.0	29.9	43.0	32.1	0.0	23.5			
LnGrp LOS	E	B	A	A	C	D	C	A	C			
Approach Vol, veh/h		2120			1429			2621				
Approach Delay, s/veh		20.3			35.6			28.5				
Approach LOS		C			D			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		47.0			12.2	34.8		53.0				
Change Period (Y+Rc), s		7.2			* 4.2	7.2		5.1				
Max Green Setting (Gmax), s		39.8			* 8	27.6		47.9				
Max Q Clear Time (g_c+I1), s		30.4			8.8	22.9		41.6				
Green Ext Time (p_c), s		7.1			0.0	2.9		5.1				

Intersection Summary

HCM 6th Ctrl Delay	27.3
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.

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕
Traffic Vol, veh/h	0	1	514	11	0	706
Future Vol, veh/h	0	1	514	11	0	706
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	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	584	13	0	802

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	299	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	697	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	-	697	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	697
HCM Lane V/C Ratio	-	-	0.002
HCM Control Delay (s)	-	-	10.2
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↑↑↑	↗ ↑↑↑			↗ ↑↑
Traffic Vol, veh/h	0	1	720	23	0	671
Future Vol, veh/h	0	1	720	23	0	671
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	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	818	26	0	763

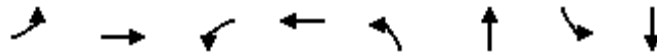
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	422	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	496	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	496	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	496
HCM Lane V/C Ratio	-	-	0.002
HCM Control Delay (s)	-	-	12.3
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

Timings
1: N Torrey Pines Road & N.U. System Dwy

Opening Year with Project PM
01/20/2022

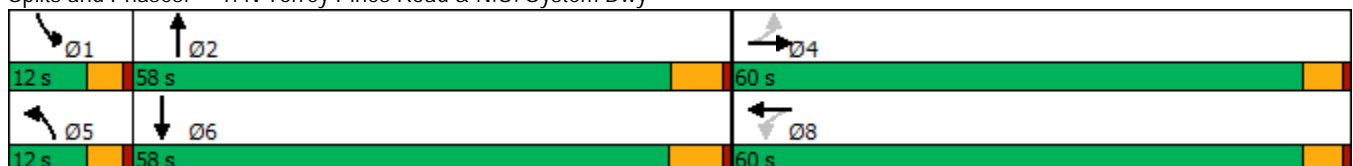


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↕		↕	↙	↕↕↕	↙	↕↕
Traffic Volume (vph)	1	0	198	0	9	783	6	586
Future Volume (vph)	1	0	198	0	9	783	6	586
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	10.0	4.0	10.0
Minimum Split (s)	39.9	39.9	41.2	41.2	9.5	23.0	9.5	22.5
Total Split (s)	60.0	60.0	60.0	60.0	12.0	58.0	12.0	58.0
Total Split (%)	46.2%	46.2%	46.2%	46.2%	9.2%	44.6%	9.2%	44.6%
Yellow Time (s)	3.9	3.9	3.9	3.9	3.4	4.9	3.4	5.2
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.9		4.9	4.4	5.9	4.4	6.2
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
Act Effect Green (s)		17.9		17.9	5.1	53.2	4.9	52.8
Actuated g/C Ratio		0.21		0.21	0.06	0.64	0.06	0.63
v/c Ratio		0.01		0.77	0.09	0.27	0.06	0.28
Control Delay		0.0		38.5	43.2	8.3	43.0	8.9
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		0.0		38.5	43.2	8.3	43.0	8.9
LOS		A		D	D	A	D	A
Approach Delay				38.5		8.7		9.2
Approach LOS				D		A		A

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 83.7	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 13.3	Intersection LOS: B
Intersection Capacity Utilization 46.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: N Torrey Pines Road & N.U. System Dwy



HCM 6th Signalized Intersection Summary
 1: N Torrey Pines Road & N.U. System Dwy

Opening Year with Project PM
 01/20/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑↑↑		↕	↑↑	
Traffic Volume (veh/h)	1	0	1	198	0	50	9	783	27	6	586	1
Future Volume (veh/h)	1	0	1	198	0	50	9	783	27	6	586	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	0	1	213	0	54	10	842	29	6	630	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	20	178	327	0	64	18	3027	104	11	2161	3
Arrive On Green	0.22	0.00	0.22	0.22	0.00	0.22	0.01	0.60	0.60	0.01	0.59	0.59
Sat Flow, veh/h	724	90	814	1156	0	293	1781	5069	174	1781	3640	6
Grp Volume(v), veh/h	2	0	0	267	0	0	10	565	306	6	307	324
Grp Sat Flow(s),veh/h/ln	1628	0	0	1449	0	0	1781	1702	1839	1781	1777	1869
Q Serve(g_s), s	0.0	0.0	0.0	15.3	0.0	0.0	0.5	7.0	7.0	0.3	7.4	7.4
Cycle Q Clear(g_c), s	0.1	0.0	0.0	15.4	0.0	0.0	0.5	7.0	7.0	0.3	7.4	7.4
Prop In Lane	0.50		0.50	0.80		0.20	1.00		0.09	1.00		0.00
Lane Grp Cap(c), veh/h	418	0	0	391	0	0	18	2033	1098	11	1055	1110
V/C Ratio(X)	0.00	0.00	0.00	0.68	0.00	0.00	0.57	0.28	0.28	0.54	0.29	0.29
Avail Cap(c_a), veh/h	1020	0	0	988	0	0	155	2033	1098	155	1055	1110
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	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	0.0	0.0	32.6	0.0	0.0	43.0	8.5	8.5	43.2	8.7	8.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.1	0.0	0.0	10.3	0.3	0.6	14.5	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	5.5	0.0	0.0	0.3	2.2	2.5	0.2	2.5	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.7	0.0	0.0	34.7	0.0	0.0	53.3	8.8	9.1	57.7	9.4	9.4
LnGrp LOS	C	A	A	C	A	A	D	A	A	E	A	A
Approach Vol, veh/h		2			267			881				637
Approach Delay, s/veh		26.7			34.7			9.4				9.9
Approach LOS		C			C			A				A
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.9	58.3		24.0	5.3	58.0		24.0				
Change Period (Y+Rc), s	4.4	* 6.2		4.9	4.4	6.2		4.9				
Max Green Setting (Gmax), s	7.6	* 52		55.1	7.6	51.8		55.1				
Max Q Clear Time (g_c+I1), s	2.3	9.0		2.1	2.5	9.4		17.4				
Green Ext Time (p_c), s	0.0	11.1		0.0	0.0	6.4		1.7				

Intersection Summary

HCM 6th Ctrl Delay	13.4
HCM 6th LOS	B

Notes

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

Timings
2: N Torrey Pines Road & Torrey Pines Science Park

Opening Year with Project PM
01/20/2022

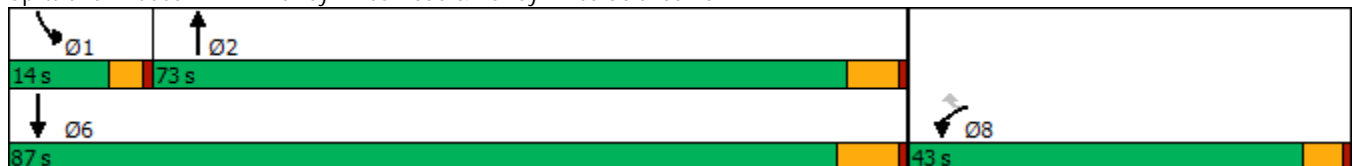


Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↗	↑↑↑	↘	↑↑
Traffic Volume (vph)	52	22	790	2	789
Future Volume (vph)	52	22	790	2	789
Turn Type	Prot	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	4.0	4.0	10.0	4.0	10.0
Minimum Split (s)	37.9	37.9	25.9	9.5	22.5
Total Split (s)	43.0	43.0	73.0	14.0	87.0
Total Split (%)	33.1%	33.1%	56.2%	10.8%	66.9%
Yellow Time (s)	3.9	3.9	4.9	3.4	6.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.9	4.4	7.0
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Max	None	Max
Act Effect Green (s)	7.6	7.6	83.3	4.7	84.3
Actuated g/C Ratio	0.08	0.08	0.83	0.05	0.84
v/c Ratio	0.42	0.17	0.20	0.02	0.29
Control Delay	53.4	19.3	2.8	47.0	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	53.4	19.3	2.8	47.0	2.6
LOS	D	B	A	D	A
Approach Delay	43.2		2.8		2.7
Approach LOS	D		A		A

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 100.5	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay: 4.6	Intersection LOS: A
Intersection Capacity Utilization 35.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: N Torrey Pines Road & Torrey Pines Science Park



HCM 6th Signalized Intersection Summary
 2: N Torrey Pines Road & Torrey Pines Science Park

Opening Year with Project PM
 01/20/2022



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↵	↵	↑↑↑		↵	↑↑
Traffic Volume (veh/h)	52	22	790	8	2	789
Future Volume (veh/h)	52	22	790	8	2	789
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	56	24	849	9	2	848
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	83	74	4074	43	4	2949
Arrive On Green	0.05	0.05	0.78	0.78	0.00	0.83
Sat Flow, veh/h	1781	1585	5378	55	1781	3647
Grp Volume(v), veh/h	56	24	555	303	2	848
Grp Sat Flow(s),veh/h/ln	1781	1585	1702	1860	1781	1777
Q Serve(g_s), s	3.0	1.4	4.1	4.1	0.1	5.1
Cycle Q Clear(g_c), s	3.0	1.4	4.1	4.1	0.1	5.1
Prop In Lane	1.00	1.00		0.03	1.00	
Lane Grp Cap(c), veh/h	83	74	2662	1455	4	2949
V/C Ratio(X)	0.67	0.33	0.21	0.21	0.52	0.29
Avail Cap(c_a), veh/h	704	627	2662	1455	177	2949
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.2	44.5	2.7	2.7	48.0	1.8
Incr Delay (d2), s/veh	3.5	0.9	0.2	0.3	34.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.6	0.8	0.9	0.1	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.8	45.4	2.9	3.1	82.9	2.1
LnGrp LOS	D	D	A	A	F	A
Approach Vol, veh/h	80		858			850
Approach Delay, s/veh	47.8		3.0			2.3
Approach LOS	D		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	4.6	82.4			87.0	9.4
Change Period (Y+Rc), s	4.4	* 7			7.0	4.9
Max Green Setting (Gmax), s	9.6	* 67			80.0	38.1
Max Q Clear Time (g_c+I1), s	2.1	6.1			7.1	5.0
Green Ext Time (p_c), s	0.0	12.3			11.2	0.1

Intersection Summary

HCM 6th Ctrl Delay	4.6
HCM 6th LOS	A

Notes

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

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	10	0	22
Future Vol, veh/h	0	61	116	388	53	0	0	0	0	10	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	-	-	0	-	-	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	12	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	15.5
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1365	-	154	1003
HCM Lane V/C Ratio	-	-	0.331	-	0.076	0.026
HCM Control Delay (s)	-	-	8.9	0	30.3	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	14	291	151	2	53
Future Vol, veh/h	55	14	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	16	327	170	2	60

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	497	0	-	0	552
Stage 1	-	-	-	-	412
Stage 2	-	-	-	-	140
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1067	-	-	-	495
Stage 1	-	-	-	-	669
Stage 2	-	-	-	-	887
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1067	-	-	-	466
Mov Cap-2 Maneuver	-	-	-	-	466
Stage 1	-	-	-	-	630
Stage 2	-	-	-	-	887

Approach	EB	WB	SB
HCM Control Delay, s	6.8	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

Timings
5: N Torrey Pines Road & Science Park Road

Opening Year with Project PM

01/20/2022

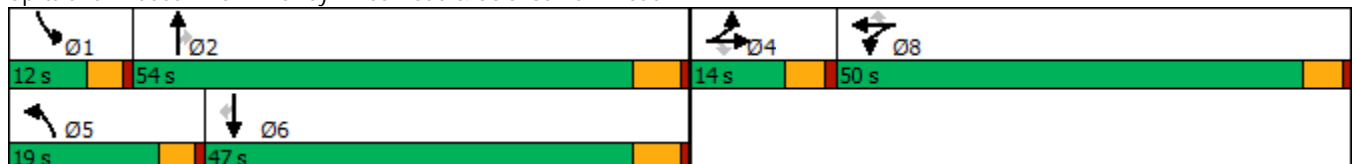


Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↑↑↑	↗	↘	↑↑↑	↗
Traffic Volume (vph)	2	64	523	4	162	69	989	102	21	857	12
Future Volume (vph)	2	64	523	4	162	69	989	102	21	857	12
Turn Type	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4		8	8		5	2		1	6	
Permitted Phases		4			8			2			6
Detector Phase	4	4	8	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	6.0	10.0	10.0	4.0	20.0	20.0
Minimum Split (s)	8.9	8.9	42.9	42.9	42.9	10.4	28.7	28.7	8.4	25.7	25.7
Total Split (s)	14.0	14.0	50.0	50.0	50.0	19.0	54.0	54.0	12.0	47.0	47.0
Total Split (%)	10.8%	10.8%	38.5%	38.5%	38.5%	14.6%	41.5%	41.5%	9.2%	36.2%	36.2%
Yellow Time (s)	3.9	3.9	3.9	3.9	3.9	3.4	4.7	4.7	3.4	4.7	4.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	4.9	4.9	4.9	4.4	5.7	5.7	4.4	5.7	5.7
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effect Green (s)	6.9	6.9	23.6	23.6	23.6	9.7	52.5	52.5	6.7	45.3	45.3
Actuated g/C Ratio	0.07	0.07	0.24	0.24	0.24	0.10	0.52	0.52	0.07	0.45	0.45
v/c Ratio	0.16	0.29	0.70	0.71	0.35	0.43	0.39	0.13	0.19	0.39	0.02
Control Delay	53.3	3.0	45.6	46.2	6.9	55.0	18.2	4.7	54.3	22.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.3	3.0	45.6	46.2	6.9	55.0	18.2	4.7	54.3	22.8	0.1
LOS	D	A	D	D	A	D	B	A	D	C	A
Approach Delay	14.6			36.7			19.2			23.2	
Approach LOS	B			D			B			C	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 100.2
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 24.6
 Intersection LOS: C
 Intersection Capacity Utilization 60.6%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 5: N Torrey Pines Road & Science Park Road



HCM 6th Signalized Intersection Summary
5: N Torrey Pines Road & Science Park Road

Opening Year with Project PM

01/20/2022



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	989	102	21	857	12
Future Volume (veh/h)	17	2	64	523	4	162	69	989	102	21	857	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.98	1.00		0.99	1.00		0.93
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	1041	107	22	902	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	87	817	0	356	95	2500	770	33	2322	671
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	1428	3563	0	1552	1781	5106	1572	1781	5106	1474
Grp Volume(v), veh/h	20	0	67	554	0	171	73	1041	107	22	902	13
Grp Sat Flow(s),veh/h/ln	1790	0	1428	1781	0	1552	1781	1702	1572	1781	1702	1474
Q Serve(g_s), s	1.0	0.0	4.6	14.0	0.0	9.4	4.0	12.9	3.7	1.2	11.5	0.5
Cycle Q Clear(g_c), s	1.0	0.0	4.6	14.0	0.0	9.4	4.0	12.9	3.7	1.2	11.5	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	109	0	87	817	0	356	95	2500	770	33	2322	671
V/C Ratio(X)	0.18	0.00	0.77	0.68	0.00	0.48	0.77	0.42	0.14	0.67	0.39	0.02
Avail Cap(c_a), veh/h	165	0	132	1629	0	710	264	2500	770	137	2322	671
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	44.0	0.0	45.6	34.7	0.0	32.9	46.1	16.1	13.8	48.1	17.8	14.8
Incr Delay (d2), s/veh	0.8	0.0	14.1	1.0	0.0	1.0	12.3	0.5	0.4	21.4	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	1.9	6.1	0.0	3.6	2.0	4.7	1.3	0.7	4.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.8	0.0	59.7	35.7	0.0	33.9	58.4	16.6	14.2	69.5	18.3	14.8
LnGrp LOS	D	A	E	D	A	C	E	B	B	E	B	B
Approach Vol, veh/h		87			725			1221			937	
Approach Delay, s/veh		56.3			35.3			18.9			19.4	
Approach LOS		E			D			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	54.0		10.9	9.6	50.6		27.5				
Change Period (Y+Rc), s	4.4	5.7		4.9	4.4	5.7		4.9				
Max Green Setting (Gmax), s	7.6	48.3		9.1	14.6	41.3		45.1				
Max Q Clear Time (g_c+I1), s	3.2	14.9		6.6	6.0	13.5		16.0				
Green Ext Time (p_c), s	0.0	8.4		0.1	0.1	6.4		2.8				

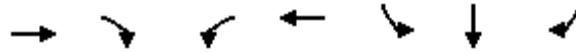
Intersection Summary

HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Timings
6: I-5 SB Ramps & Genesee Avenue

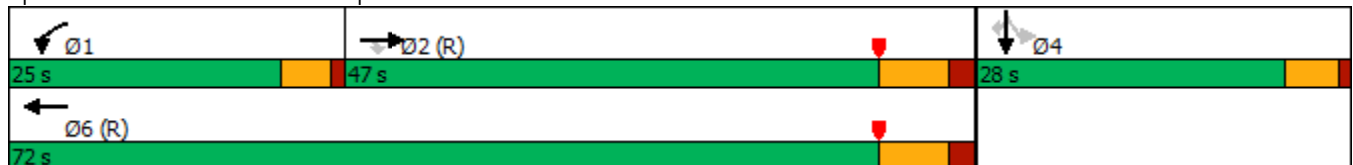


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑↑↑	↗↗	↖↖	↑↑↑	↘	↖	↗↗
Traffic Volume (vph)	2059	950	391	764	387	2	352
Future Volume (vph)	2059	950	391	764	387	2	352
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	2		1	6		4	
Permitted Phases		2			4		4
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	13.0	13.0	5.0	13.0	5.0	5.0	5.0
Minimum Split (s)	30.2	30.2	9.7	33.2	10.1	10.1	10.1
Total Split (s)	47.0	47.0	25.0	72.0	28.0	28.0	28.0
Total Split (%)	47.0%	47.0%	25.0%	72.0%	28.0%	28.0%	28.0%
Yellow Time (s)	5.2	5.2	3.7	5.2	4.1	4.1	4.1
All-Red Time (s)	2.0	2.0	1.0	2.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	4.7	7.2	5.1	5.1	5.1
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Act Effct Green (s)	47.3	47.3	17.0	69.0	18.7	18.7	18.7
Actuated g/C Ratio	0.47	0.47	0.17	0.69	0.19	0.19	0.19
v/c Ratio	0.61	0.55	0.71	0.23	0.66	0.66	0.45
Control Delay	21.7	2.5	55.1	6.1	47.1	47.3	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	2.5	55.1	6.1	47.1	47.3	5.4
LOS	C	A	E	A	D	D	A
Approach Delay	15.6			22.7		27.4	
Approach LOS	B			C		C	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 19.1
 Intersection LOS: B
 Intersection Capacity Utilization 111.4%
 ICU Level of Service H
 Analysis Period (min) 15

Splits and Phases: 6: I-5 SB Ramps & Genesee Avenue



HCM 6th Signalized Intersection Summary
6: I-5 SB Ramps & Genesee Avenue

Opening Year with Project PM
01/20/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑	↗↘	↗↘	↑↑↑					↘	↗	↗↘
Traffic Volume (veh/h)	0	2059	950	391	764	0	0	0	0	387	2	352
Future Volume (veh/h)	0	2059	950	391	764	0	0	0	0	387	2	352
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	2190	1011	416	813	0				413	0	374
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	4029	1484	491	3681	0				556	0	495
Arrive On Green	0.00	0.53	0.53	0.28	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	2190	1011	416	813	0				413	0	374
Grp Sat Flow(s),veh/h/ln	0	1515	1395	1728	1702	0				1781	0	1585
Q Serve(g_s), s	0.0	19.0	26.6	11.4	0.0	0.0				11.1	0.0	11.3
Cycle Q Clear(g_c), s	0.0	19.0	26.6	11.4	0.0	0.0				11.1	0.0	11.3
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	4029	1484	491	3681	0				556	0	495
V/C Ratio(X)	0.00	0.54	0.68	0.85	0.22	0.00				0.74	0.00	0.76
Avail Cap(c_a), veh/h	0	4029	1484	702	3681	0				816	0	726
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	15.4	17.2	34.8	0.0	0.0				40.3	0.0	40.4
Incr Delay (d2), s/veh	0.0	0.5	2.5	6.2	0.1	0.0				2.1	0.0	2.6
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	5.8	7.9	4.3	0.0	0.0				5.0	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.9	19.7	40.9	0.1	0.0				42.4	0.0	43.0
LnGrp LOS	A	B	B	D	A	A				D	A	D
Approach Vol, veh/h		3201			1229						787	
Approach Delay, s/veh		17.1			13.9						42.7	
Approach LOS		B			B						D	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	18.9	60.4		20.7		79.3						
Change Period (Y+Rc), s	* 4.7	7.2		5.1		7.2						
Max Green Setting (Gmax), s	* 20	39.8		22.9		64.8						
Max Q Clear Time (g_c+I1), s	13.4	28.6		13.3		2.0						
Green Ext Time (p_c), s	0.8	10.3		2.3		5.8						

Intersection Summary

HCM 6th Ctrl Delay	20.2
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.

Timings
7: I-5 NB Ramps & Genesee Avenue

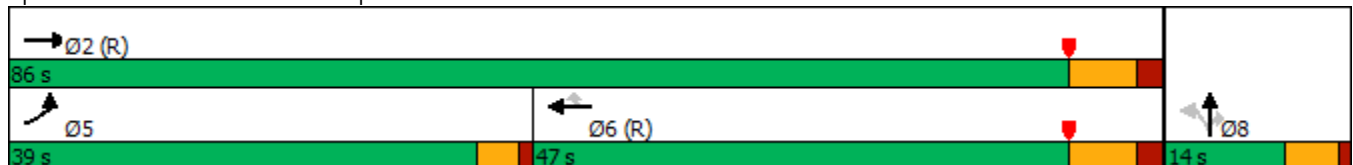


Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations	↶↷	↑↑↑	↑↑↑↑	↶↷	↶	↷	↶↷
Traffic Volume (vph)	1382	1067	843	1419	315	3	185
Future Volume (vph)	1382	1067	843	1419	315	3	185
Turn Type	Prot	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases				6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	13.0	11.0	11.0	5.0	5.0	5.0
Minimum Split (s)	9.2	35.2	32.2	32.2	10.1	10.1	10.1
Total Split (s)	39.0	86.0	47.0	47.0	14.0	14.0	14.0
Total Split (%)	39.0%	86.0%	47.0%	47.0%	14.0%	14.0%	14.0%
Yellow Time (s)	3.2	5.2	5.2	5.2	4.1	4.1	4.1
All-Red Time (s)	1.0	2.0	2.0	2.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.2	7.2	7.2	7.2	5.1	5.1	5.1
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None
Act Effect Green (s)	34.8	78.8	39.8	39.8	8.9	8.9	8.9
Actuated g/C Ratio	0.35	0.79	0.40	0.40	0.09	0.09	0.09
v/c Ratio	1.23	0.28	0.30	1.13	1.12	1.14	0.46
Control Delay	151.8	1.9	20.9	91.4	153.2	158.8	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	151.8	1.9	20.9	91.4	153.2	158.8	10.2
LOS	F	A	C	F	F	F	B
Approach Delay		86.5	65.2			102.3	
Approach LOS		F	E			F	

Intersection Summary





























Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.23
 Intersection Signal Delay: 78.7
 Intersection LOS: E
 Intersection Capacity Utilization 111.4%
 ICU Level of Service H
 Analysis Period (min) 15

Splits and Phases: 7: I-5 NB Ramps & Genesee Avenue



HCM 6th Signalized Intersection Summary
 7: I-5 NB Ramps & Genesee Avenue

Opening Year with Project PM
 01/20/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			   	 		 	 			
Traffic Volume (veh/h)	1382	1067	0	0	843	1419	315	3	185	0	0	0
Future Volume (veh/h)	1382	1067	0	0	843	1419	315	3	185	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	1470	1135	0	0	897	1510	337	0	197			
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	1203	4024	0	0	3015	1110	317	0	282			
Arrive On Green	0.58	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	1470	1135	0	0	897	1510	337	0	197			
Grp Sat Flow(s),veh/h/ln	1728	1702	0	0	1515	1395	1781	0	1585			
Q Serve(g_s), s	34.8	0.0	0.0	0.0	8.1	39.8	8.9	0.0	6.0			
Cycle Q Clear(g_c), s	34.8	0.0	0.0	0.0	8.1	39.8	8.9	0.0	6.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1203	4024	0	0	3015	1110	317	0	282			
V/C Ratio(X)	1.22	0.28	0.00	0.00	0.30	1.36	1.06	0.00	0.70			
Avail Cap(c_a), veh/h	1203	4024	0	0	3015	1110	317	0	282			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.75	0.75	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	20.9	0.0	0.0	0.0	20.6	30.1	45.5	0.0	44.2			
Incr Delay (d2), s/veh	105.9	0.1	0.0	0.0	0.3	167.9	68.1	0.0	7.4			
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	25.3	0.0	0.0	0.0	2.7	37.8	6.9	0.0	2.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	126.8	0.1	0.0	0.0	20.8	198.0	113.7	0.0	51.6			
LnGrp LOS	F	A	A	A	C	F	F	A	D			
Approach Vol, veh/h		2605			2407			534				
Approach Delay, s/veh		71.6			132.0			90.8				
Approach LOS		E			F			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		86.0			39.0	47.0		14.0				
Change Period (Y+Rc), s		7.2			* 4.2	7.2		5.1				
Max Green Setting (Gmax), s		78.8			* 35	39.8		8.9				
Max Q Clear Time (g_c+I1), s		2.0			36.8	41.8		10.9				
Green Ext Time (p_c), s		9.2			0.0	0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	99.7
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	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			↕
Traffic Vol, veh/h	0	8	832	1	0	706
Future Vol, veh/h	0	8	832	1	0	706
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	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	895	1	0	759

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	448	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	558	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	558	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	558
HCM Lane V/C Ratio	-	-	0.015
HCM Control Delay (s)	-	-	11.6
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↑↑↑	↗ ↑↑↑			↗ ↑↑
Traffic Vol, veh/h	0	8	818	2	0	792
Future Vol, veh/h	0	8	818	2	0	792
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	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	880	2	0	852

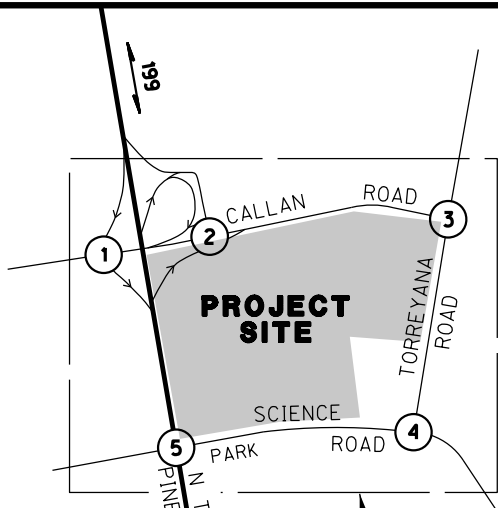
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	441	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	482	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	482	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

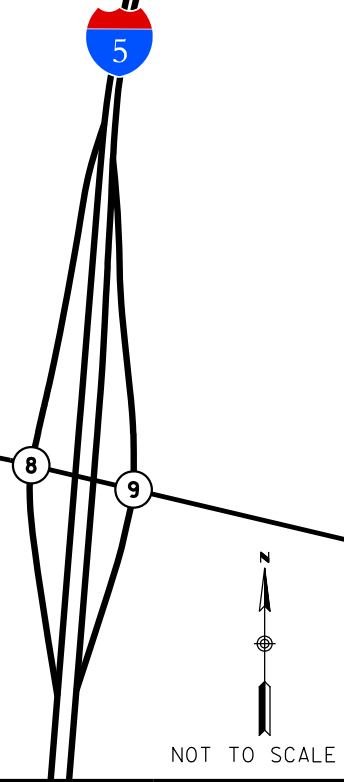
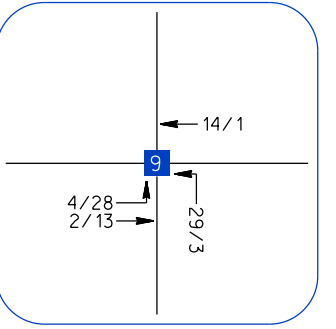
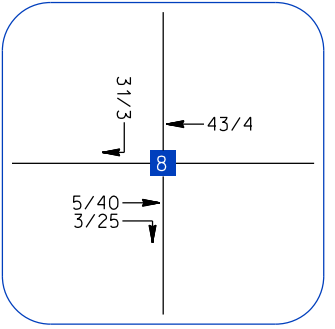
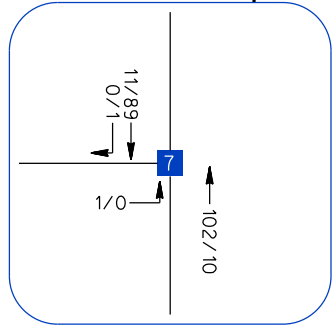
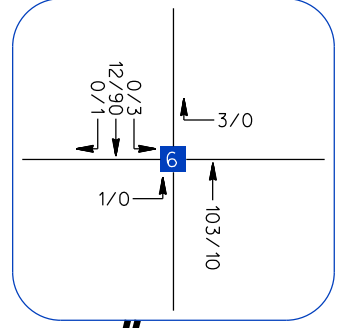
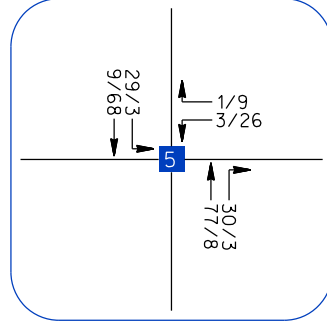
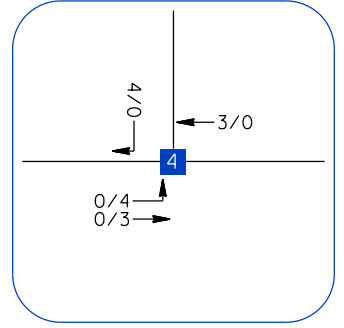
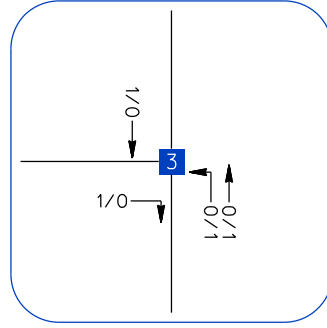
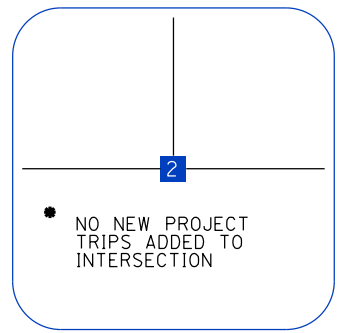
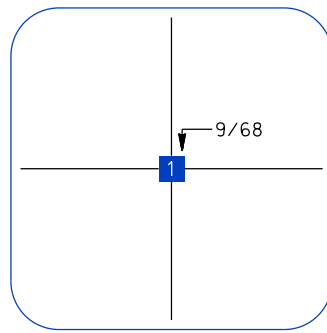
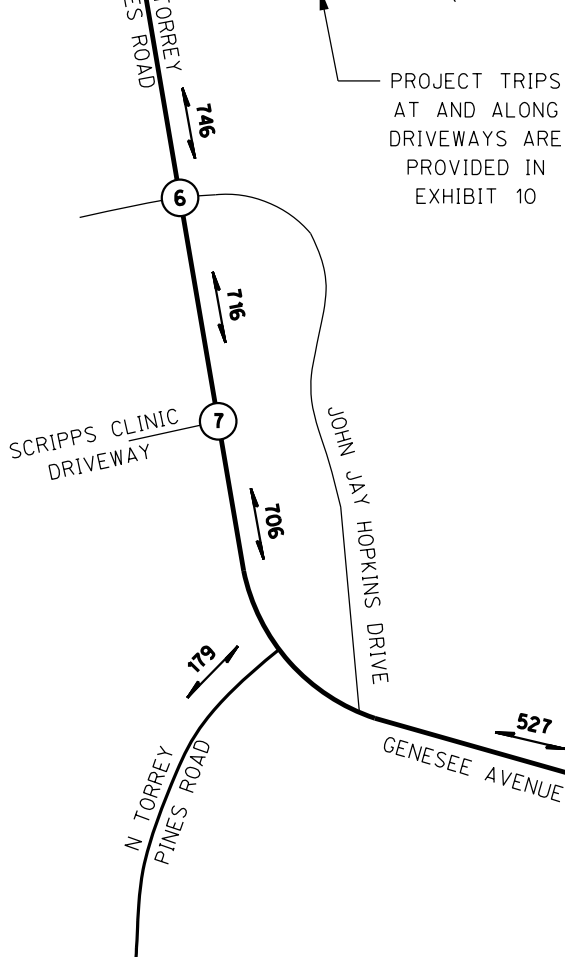
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	482
HCM Lane V/C Ratio	-	-	0.018
HCM Control Delay (s)	-	-	12.6
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

APPENDIX E

CUMULATIVE PROJECTS



PROJECT TRIPS AT AND ALONG DRIVEWAYS ARE PROVIDED IN EXHIBIT 10

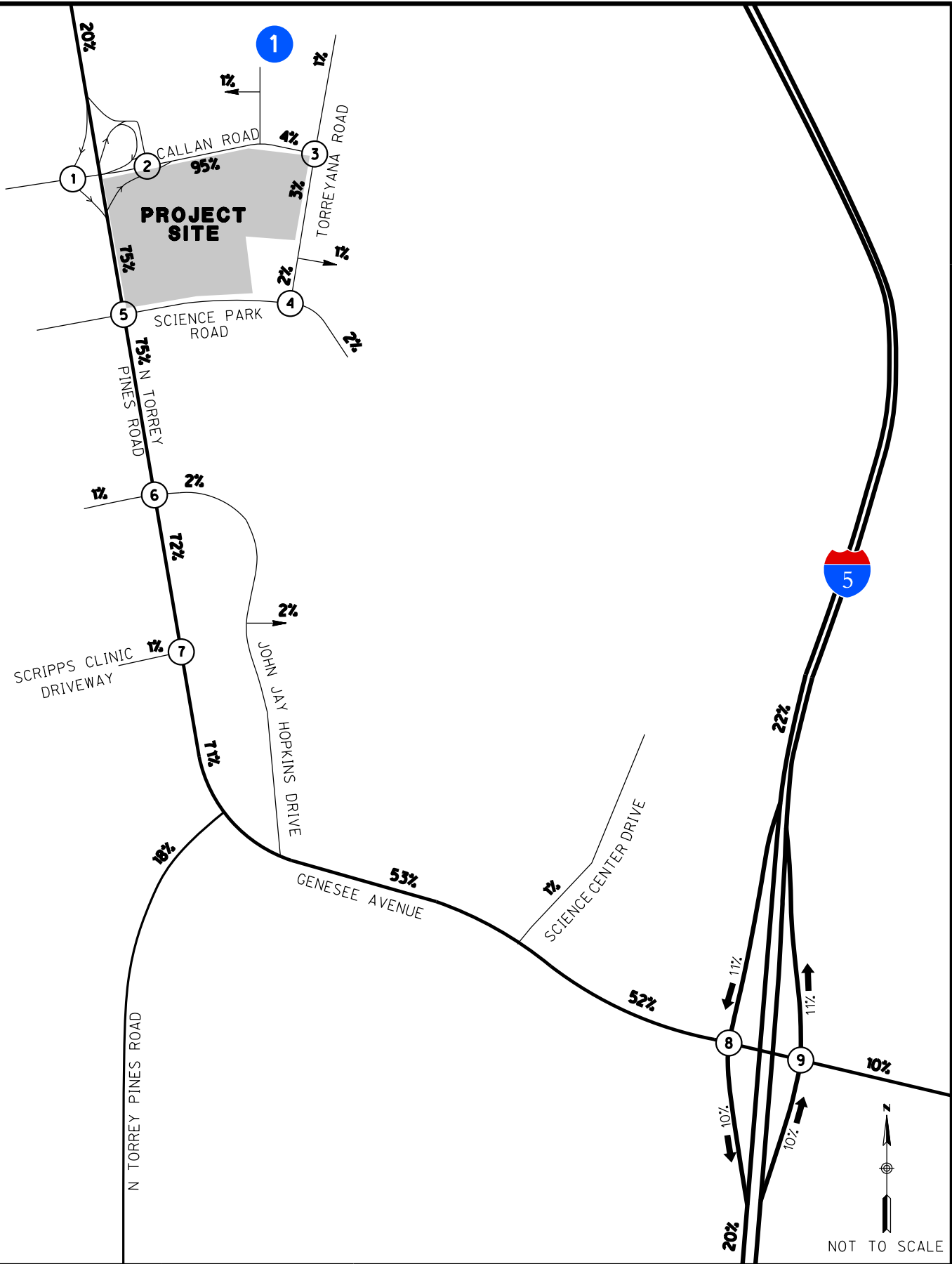


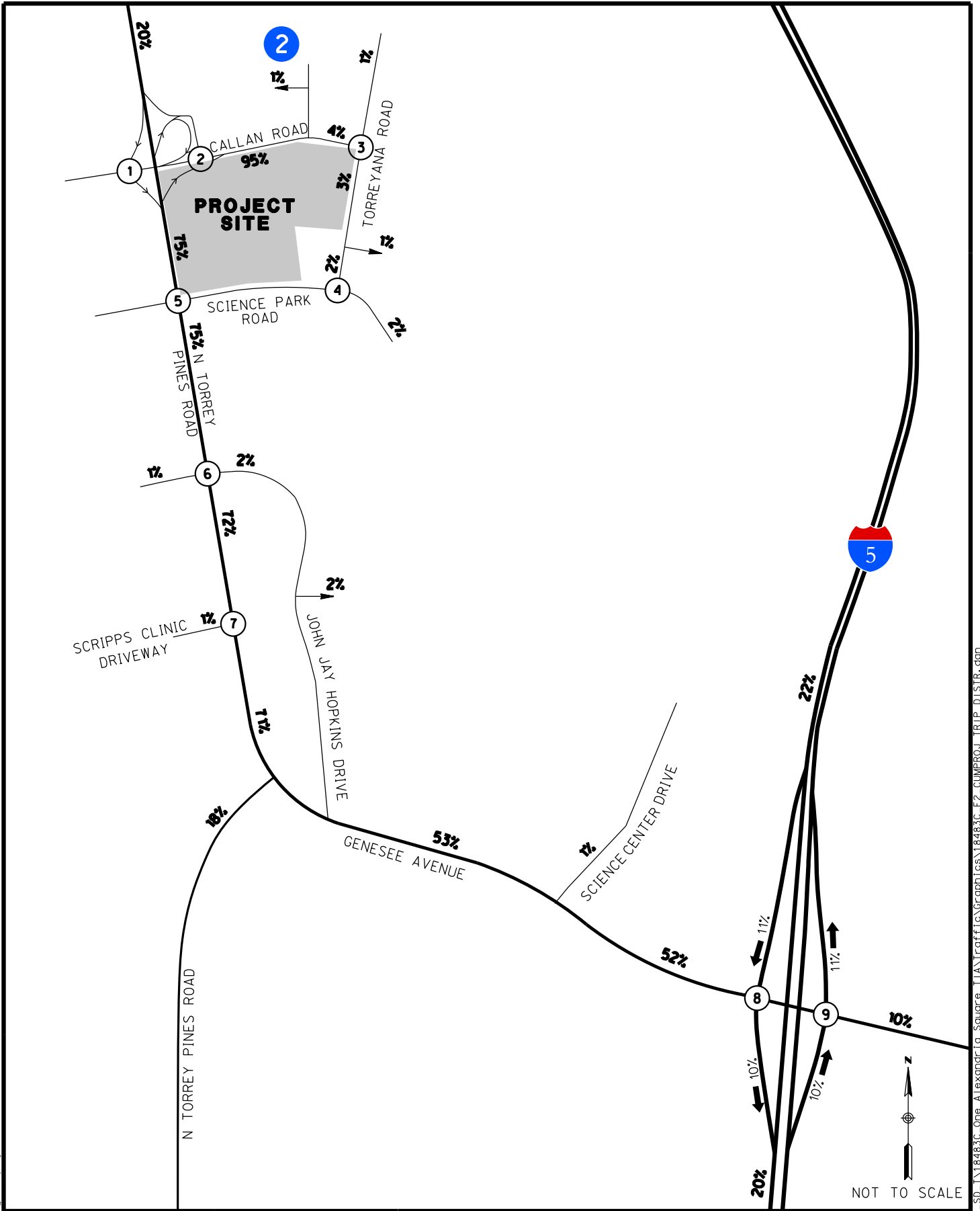
NOT TO SCALE

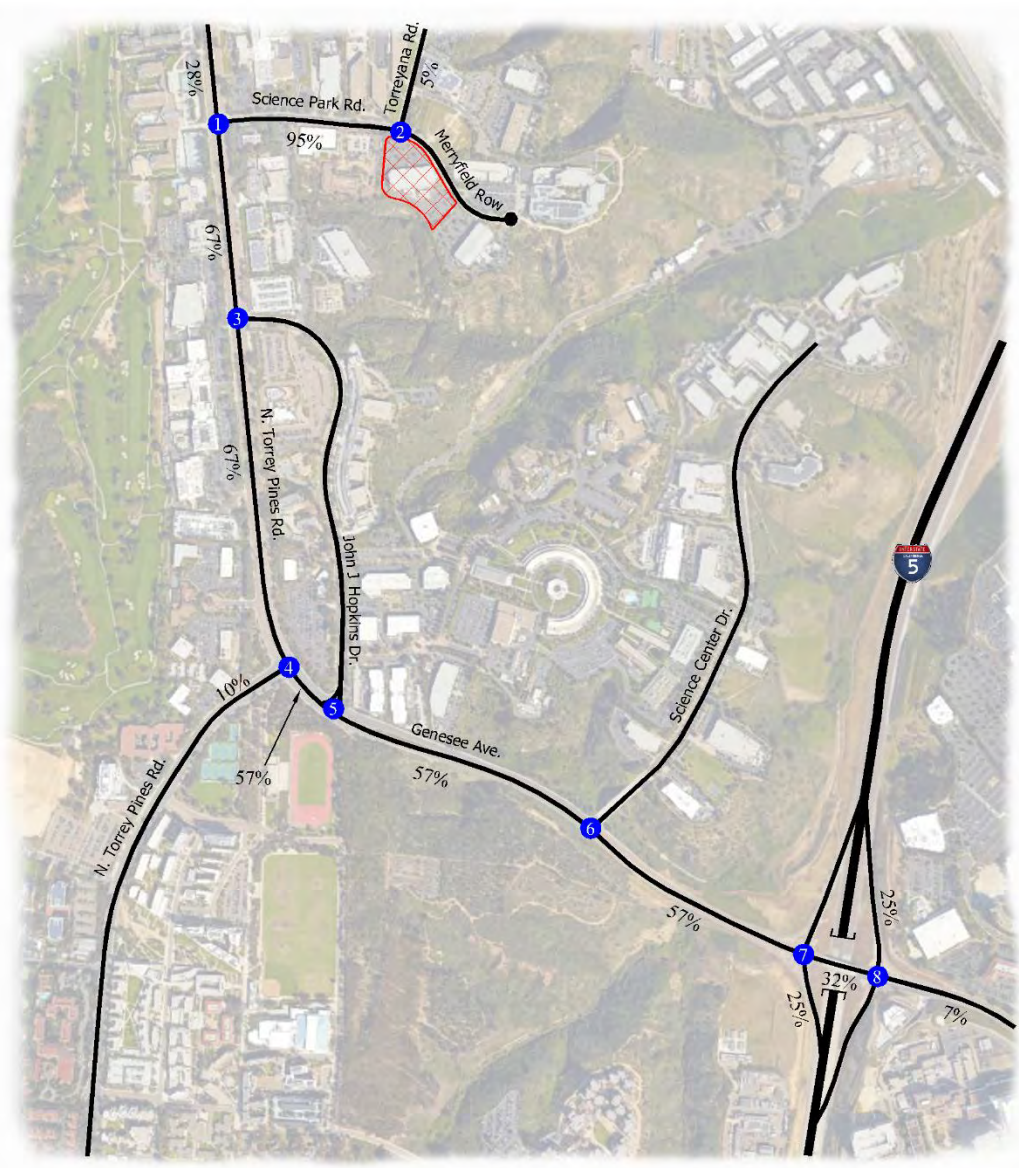


EXHIBIT 9
PROJECT TRIP ASSIGNMENT
ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

LEGEND
AM/PM=PEAK HOUR VOLUMES
XXX = TWO-WAY ADT







Legend



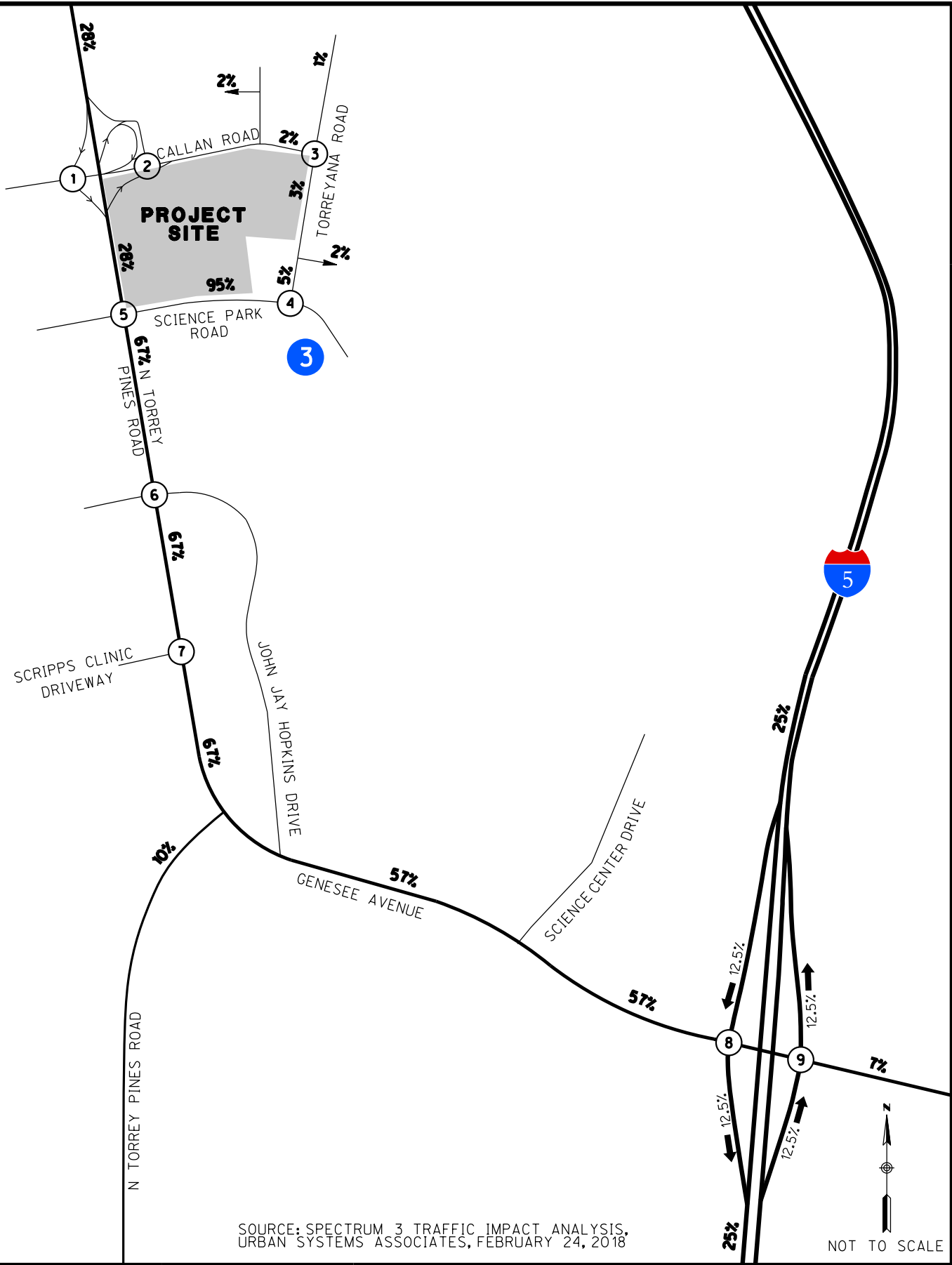
-  = Project Location
-  = Study Intersection
- XX% = Distribution Percentage



Figure 3-1

Project Distribution Percentages



SOURCE: SPECTRUM 3 TRAFFIC IMPACT ANALYSIS, URBAN SYSTEMS ASSOCIATES, FEBRUARY 24, 2018

NOT TO SCALE

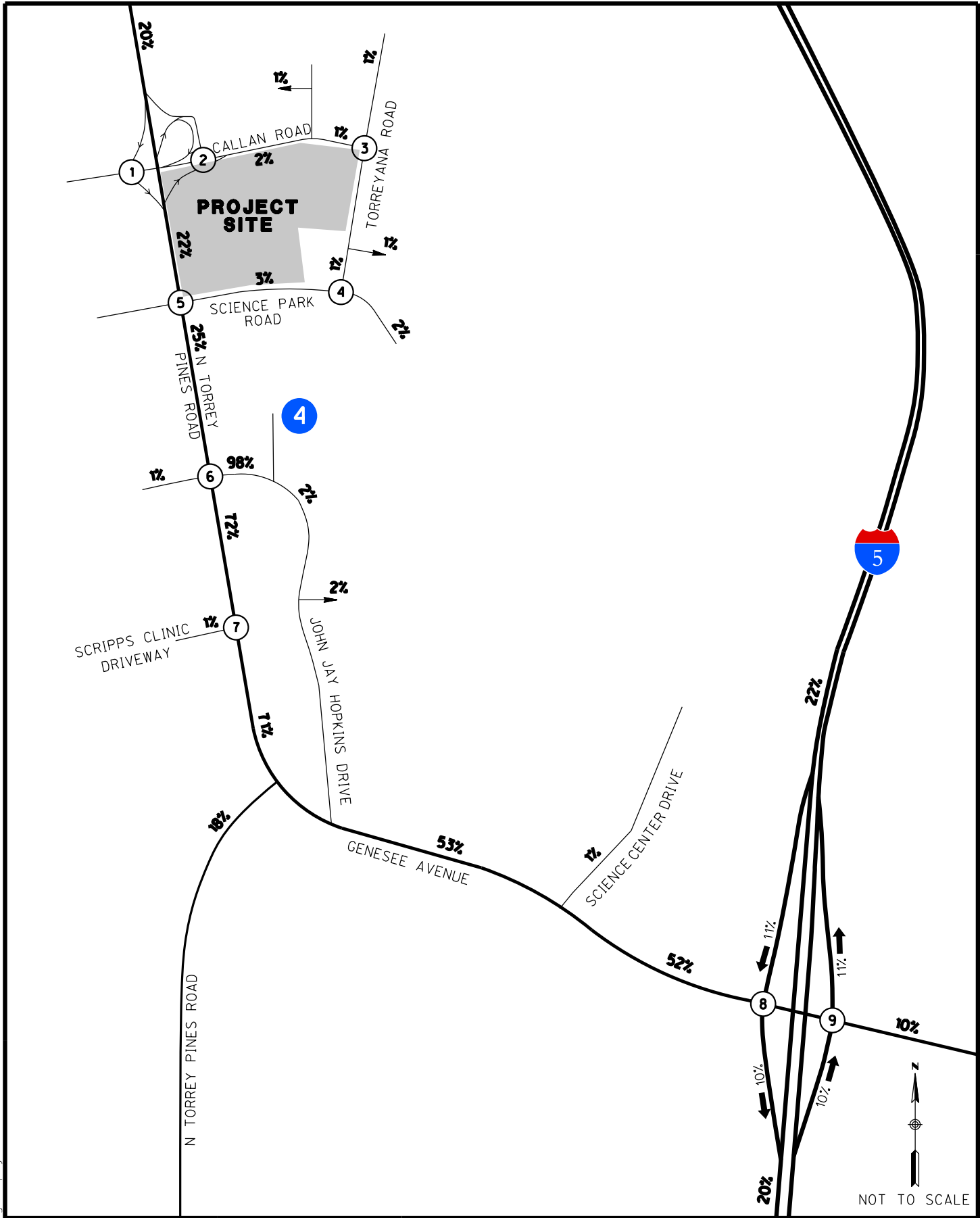


EXHIBIT F-3
SPECTRUM III TRIP DISTRIBUTION

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

LEGEND

- xx%** = DISTRIBUTION PERCENTAGE
- #** = CUMULATIVE PROJECT LOCATION



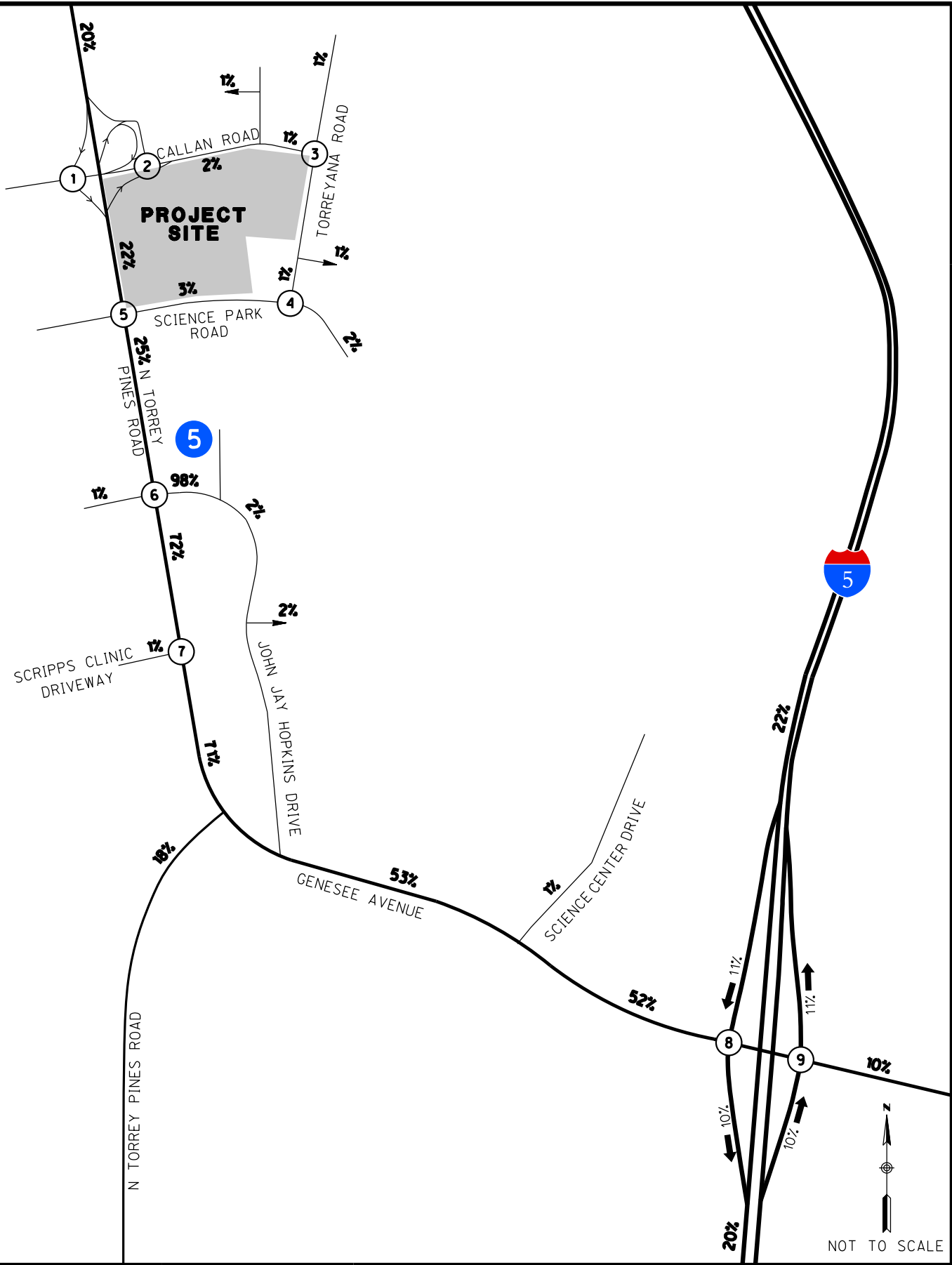
© 2021 Rick Engineering Company

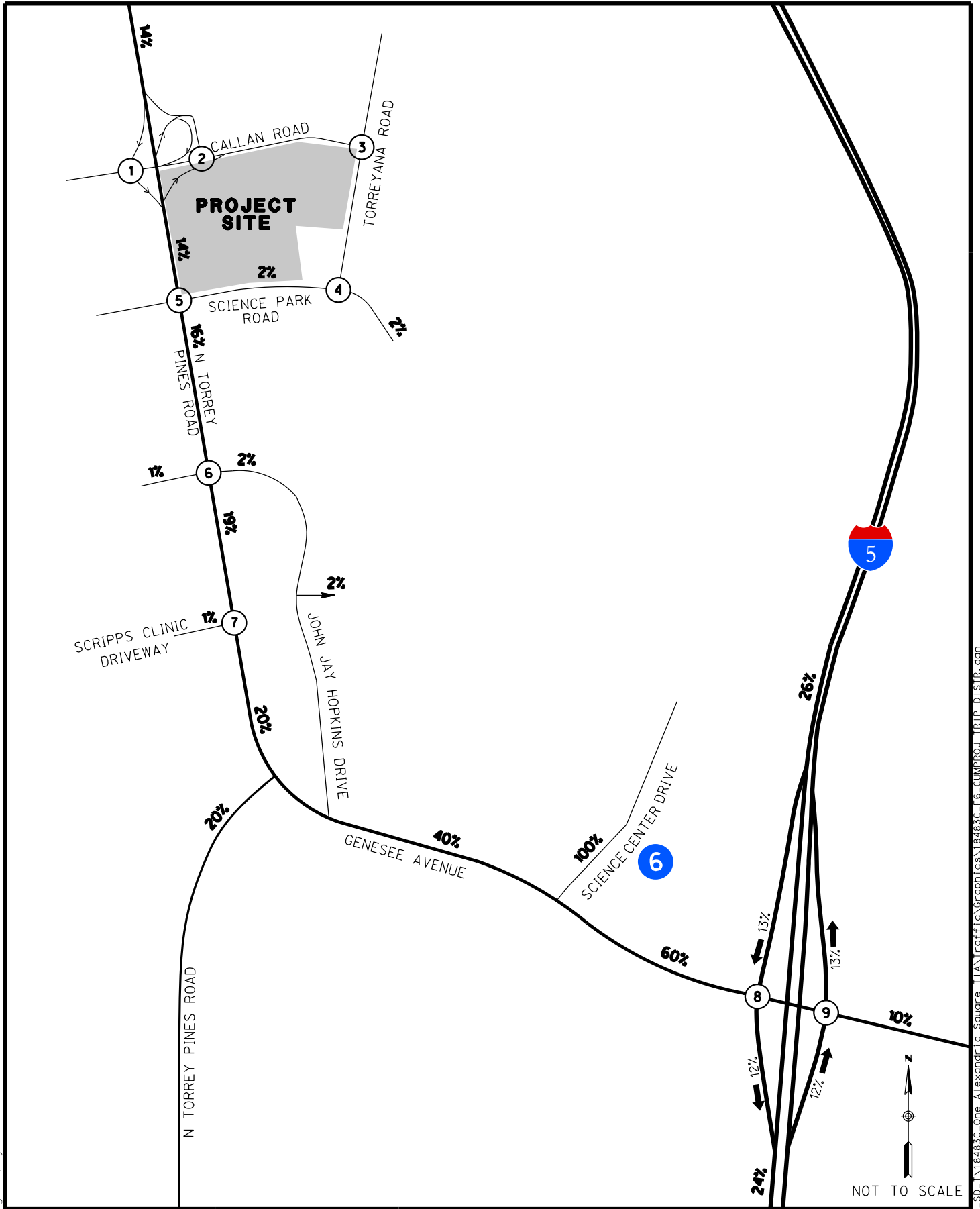


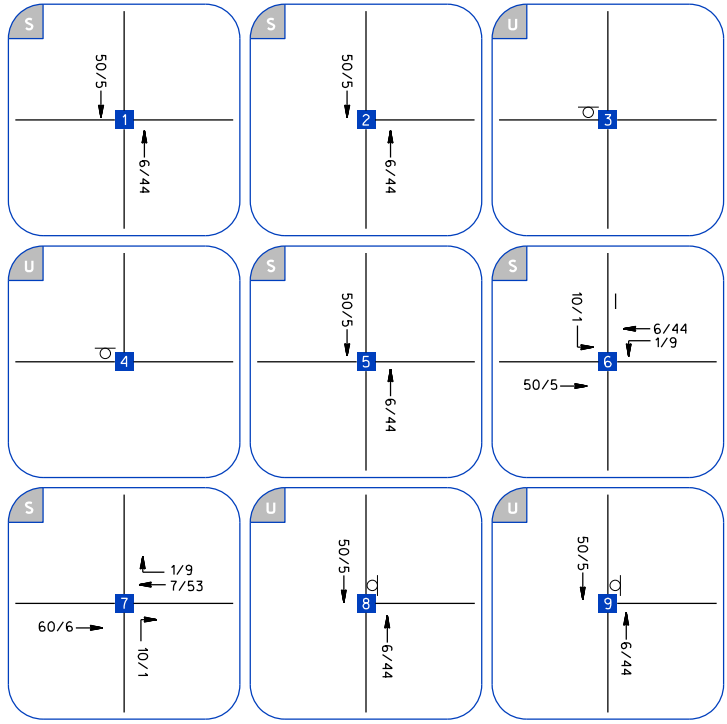
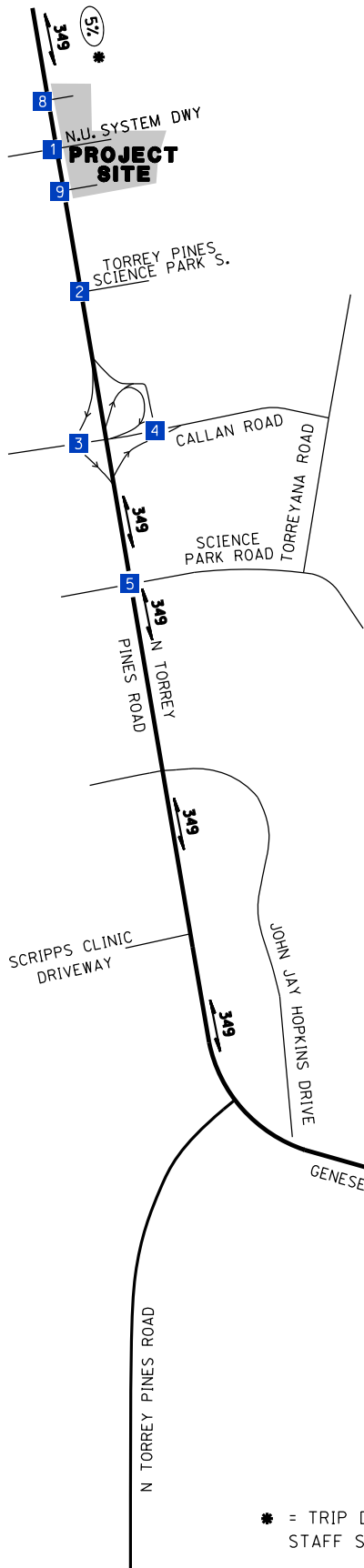
EXHIBIT F-4
SPECTRUM V TRIP DISTRIBUTION

ONE ALEXANDRIA SQUARE TRANSPORTATION STUDY

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 28-JAN-2021 10:13







* = TRIP DISTRIBUTION PROVIDED BY CITY STAFF SEPTEMBER, 2021

8
CUMULATIVE PROJECT SITE

NOT TO SCALE



EXHIBIT
TOWNE CENTRE VIEW
TRIP DISTRIBUTION AND VOLUMES
ONE ALEXANDRIA NORTH

LEGEND

- X = INTERSECTION NUMBER
- S = SIGNALIZED
- U = UNSIGNALIZED
- = STOP CONTROL
- X,XXX = TWO-WAY ADT
- X,XXX = ONE-WAY ADT

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APPENDIX F

95TH PERCENTILE QUEUE RESULTS

Queuing and Blocking Report
 Opening Year without Project AM

01/20/2022

Intersection: 1: N Torrey Pines Road & N.U. System Dwy

Movement	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	T	T	TR	L	T	TR
Maximum Queue (ft)	51	72	52	53	92	95	54
Average Queue (ft)	23	26	12	18	32	21	6
95th Queue (ft)	51	59	41	46	69	64	28
Link Distance (ft)	689	379	379	379			
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)					150		
Storage Blk Time (%)		0					
Queuing Penalty (veh)		0					

Intersection: 2: N Torrey Pines Road & Torrey Pines Science Park

Movement	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	T	TR	L	T	T
Maximum Queue (ft)	70	54	31	53	53	74	31
Average Queue (ft)	15	13	3	12	13	11	1
95th Queue (ft)	46	43	16	38	40	44	10
Link Distance (ft)	357					591	591
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)					150		
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 3: N Torrey Pines Road SB Connector & Callan Road

Movement	WB	SB	SB
Directions Served	LT	L	TR
Maximum Queue (ft)	51	62	84
Average Queue (ft)	5	39	21
95th Queue (ft)	24	58	55
Link Distance (ft)	491		294
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		40	
Storage Blk Time (%)		10	1
Queuing Penalty (veh)		3	2

Queuing and Blocking Report
 Opening Year without Project AM

01/20/2022

Intersection: 4: Callan Road & N. Torrey Pines Rd NB Connector

Movement	SB
Directions Served	LR
Maximum Queue (ft)	32
Average Queue (ft)	11
95th Queue (ft)	34
Link Distance (ft)	298
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

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)	83	74	93	71	47	136	196	174	423	250	194	251
Average Queue (ft)	11	23	33	22	11	53	66	80	114	178	120	97
95th Queue (ft)	41	57	77	56	32	106	144	161	306	285	194	212
Link Distance (ft)	175						1220	1220	1220			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)		50				260				225	170	
Storage Blk Time (%)	0	1								5	3	1
Queuing Penalty (veh)	0	0								13	7	2

Intersection: 5: N Torrey Pines Road & Science Park Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	245	145	16
Average Queue (ft)	51	48	4
95th Queue (ft)	135	106	15
Link Distance (ft)			
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			100
Storage Blk Time (%)		1	
Queuing Penalty (veh)		0	

Queuing and Blocking Report
 Opening Year without Project AM

01/20/2022

Intersection: 6: 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)	56	109	124	126	121	17	33	89	109	376	509	522	
Average Queue (ft)	6	23	69	65	36	3	2	48	49	167	340	477	
95th Queue (ft)	25	65	127	121	97	13	14	85	97	303	547	573	
Link Distance (ft)	503	503	503	503	503			510	510	510	510	510	
Upstream Blk Time (%)												0	9
Queuing Penalty (veh)												0	37
Storage Bay Dist (ft)						435	435						
Storage Blk Time (%)													
Queuing Penalty (veh)													

Intersection: 6: I-5 SB Ramps & Genesee Avenue

Movement	SB	SB	SB	SB
Directions Served	L	LT	R	R
Maximum Queue (ft)	557	583	604	557
Average Queue (ft)	211	560	557	446
95th Queue (ft)	538	573	577	624
Link Distance (ft)	542	542	542	542
Upstream Blk Time (%)	3	69	36	3
Queuing Penalty (veh)	0	0	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
 Opening Year without Project AM

01/20/2022

Intersection: 7: 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	T	R	R
Maximum Queue (ft)	95	103	183	202	186	56	104	201	205	245	127	95	
Average Queue (ft)	49	62	135	147	147	15	11	67	81	145	60	12	
95th Queue (ft)	90	105	181	182	180	41	50	139	147	227	106	47	
Link Distance (ft)	510	510	510	510	510	868	868	868	868	868			
Upstream Blk Time (%)													
Queuing Penalty (veh)													
Storage Bay Dist (ft)											400	400	
Storage Blk Time (%)													
Queuing Penalty (veh)													

Intersection: 7: I-5 NB Ramps & Genesee Avenue

Movement	NB	NB	NB	NB
Directions Served	L	LT	R	R
Maximum Queue (ft)	733	764	746	700
Average Queue (ft)	489	730	727	303
95th Queue (ft)	1000	744	735	695
Link Distance (ft)	712	712	712	712
Upstream Blk Time (%)	16	91	72	0
Queuing Penalty (veh)	0	0	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: N Torrey Pines Road & N. Proj Dwy

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 9: N Torrey Pines Road

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Zone Summary

Zone wide Queuing Penalty: 64

Queuing and Blocking Report
Opening Year without Project PM

01/20/2022

Intersection: 1: N Torrey Pines Road & N.U. System Dwy

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	TR
Maximum Queue (ft)	27	209	26	131	114	83	30	117	117
Average Queue (ft)	1	117	1	53	43	13	4	84	44
95th Queue (ft)	9	193	9	105	93	47	20	120	103
Link Distance (ft)	268	689		379	379	379			
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			90				150		
Storage Blk Time (%)				1					
Queuing Penalty (veh)				0					

Intersection: 2: N Torrey Pines Road & Torrey Pines Science Park

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	TR	L	T	T
Maximum Queue (ft)	118	53	96	29	30	27	125	98
Average Queue (ft)	38	17	29	6	4	1	29	25
95th Queue (ft)	91	43	67	26	19	9	75	73
Link Distance (ft)	357	357					591	591
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)						150		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 3: N Torrey Pines Road SB Connector & Callan Road

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	21	181	30	29
Average Queue (ft)	1	56	6	16
95th Queue (ft)	9	125	26	39
Link Distance (ft)	133	491		294
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			40	
Storage Blk Time (%)			0	1
Queuing Penalty (veh)			0	0

Queuing and Blocking Report
 Opening Year without Project PM

01/20/2022

Intersection: 4: Callan Road & N. Torrey Pines Rd NB Connector

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	53	77	67
Average Queue (ft)	16	7	26
95th Queue (ft)	43	34	49
Link Distance (ft)	491		298
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

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)	48	66	108	127	101	134	170	206	221	42	89	216
Average Queue (ft)	9	24	90	97	41	42	76	89	97	12	18	118
95th Queue (ft)	33	53	115	120	77	100	166	181	190	34	52	196
Link Distance (ft)	175						1220	1220	1220			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)		50				260				225	170	
Storage Blk Time (%)	0	1							0			2
Queuing Penalty (veh)	0	0							0			0

Intersection: 5: N Torrey Pines Road & Science Park Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	200	213	124
Average Queue (ft)	74	101	12
95th Queue (ft)	151	182	63
Link Distance (ft)			
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			100
Storage Blk Time (%)		9	0
Queuing Penalty (veh)		1	0

Queuing and Blocking Report
 Opening Year without Project PM

01/20/2022

Intersection: 6: I-5 SB Ramps & Genesee Avenue

Movement	EB	EB	EB	EB	EB	EB	EB	B54	B54	B54	WB	WB
Directions Served	T	T	T	T	T	R	R	T	T	T	L	L
Maximum Queue (ft)	611	594	522	492	171	121	124	974	1015	1017	167	212
Average Queue (ft)	552	552	482	186	76	57	66	176	393	441	120	124
95th Queue (ft)	631	632	583	381	134	108	114	648	1049	1140	168	187
Link Distance (ft)	503	503	503	503	503			976	976	976	510	510
Upstream Blk Time (%)	40	41	3	0				0	2	3		
Queuing Penalty (veh)	236	242	18	0				0	16	27		
Storage Bay Dist (ft)							435	435				
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 6: I-5 SB Ramps & Genesee Avenue

Movement	WB	WB	WB	SB	SB	SB	SB
Directions Served	T	T	T	L	LT	R	R
Maximum Queue (ft)	42	60	101	498	557	557	542
Average Queue (ft)	24	26	33	312	544	534	18
95th Queue (ft)	42	52	70	381	548	545	178
Link Distance (ft)	510	510	510	542	542	542	542
Upstream Blk Time (%)					100	100	0
Queuing Penalty (veh)					0	0	0
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Queuing and Blocking Report
 Opening Year without Project PM

01/20/2022

Intersection: 7: 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)	532	529	53	74	77	144	131	141	121	902	425	412
Average Queue (ft)	524	523	17	27	23	64	39	74	45	602	407	392
95th Queue (ft)	532	531	47	63	59	121	101	129	99	1165	483	478
Link Distance (ft)	510	510	510	510	510	868	868	868	868	868		
Upstream Blk Time (%)	41	43								9		
Queuing Penalty (veh)	196	207								0		
Storage Bay Dist (ft)											400	400
Storage Blk Time (%)										0	11	3
Queuing Penalty (veh)										2	19	5

Intersection: 7: I-5 NB Ramps & Genesee Avenue

Movement	NB	NB	NB	NB
Directions Served	L	LT	R	R
Maximum Queue (ft)	727	751	764	727
Average Queue (ft)	479	729	728	234
95th Queue (ft)	919	740	743	703
Link Distance (ft)	712	712	712	712
Upstream Blk Time (%)	18	98	76	2
Queuing Penalty (veh)	0	0	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: N Torrey Pines Road & N. Proj Dwy

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 9: N Torrey Pines Road

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Zone Summary

Zone wide Queuing Penalty: 970

Intersection: 1: N Torrey Pines Road & N.U. System Dwy

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	TR
Maximum Queue (ft)	29	78	25	94	52	97	68	115	74
Average Queue (ft)	2	21	1	32	12	34	32	29	4
95th Queue (ft)	14	54	8	76	40	76	64	83	29
Link Distance (ft)	267	689		379	379	379			
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			90				150		
Storage Blk Time (%)				0					
Queuing Penalty (veh)				0					

Intersection: 2: N Torrey Pines Road & Torrey Pines Science Park

Movement	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	R	T	T	TR	L	T
Maximum Queue (ft)	30	31	51	78	94	52	29
Average Queue (ft)	4	4	12	7	13	14	5
95th Queue (ft)	21	21	41	37	53	41	22
Link Distance (ft)	357	357					591
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)						150	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 3: N Torrey Pines Road SB Connector & Callan Road

Movement	WB	SB	SB
Directions Served	LT	L	TR
Maximum Queue (ft)	29	77	104
Average Queue (ft)	3	40	32
95th Queue (ft)	17	61	74
Link Distance (ft)	491		294
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		40	
Storage Blk Time (%)		9	2
Queuing Penalty (veh)		3	3

Intersection: 4: Callan Road & N. Torrey Pines Rd NB Connector

Movement	SB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	8
95th Queue (ft)	28
Link Distance (ft)	298
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

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	68	93	68	22	131	198	194	390	250	195	251
Average Queue (ft)	9	28	38	27	7	55	65	80	125	142	134	101
95th Queue (ft)	31	60	75	58	23	112	153	172	319	293	211	226
Link Distance (ft)	175						1220	1220	1220			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)		50				260				225	170	
Storage Blk Time (%)	1	1							0	7	5	1
Queuing Penalty (veh)	0	0							0	19	13	2

Intersection: 5: N Torrey Pines Road & Science Park Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	158	213	35
Average Queue (ft)	45	60	8
95th Queue (ft)	117	140	24
Link Distance (ft)			
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			100
Storage Blk Time (%)		4	
Queuing Penalty (veh)		1	

Intersection: 6: 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)	50	56	144	123	131	34	55	110	112	510	538	544
Average Queue (ft)	11	21	69	68	38	3	4	52	51	212	345	489
95th Queue (ft)	29	49	118	114	96	16	21	92	97	416	577	546
Link Distance (ft)	503	503	503	503	503			510	510	510	510	510
Upstream Blk Time (%)										0	1	8
Queuing Penalty (veh)										0	2	33
Storage Bay Dist (ft)						435	435					
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 6: I-5 SB Ramps & Genesee Avenue

Movement	SB	SB	SB	SB
Directions Served	L	LT	R	R
Maximum Queue (ft)	553	594	557	555
Average Queue (ft)	207	561	539	404
95th Queue (ft)	523	576	688	577
Link Distance (ft)	542	542	542	542
Upstream Blk Time (%)	1	73	31	0
Queuing Penalty (veh)	0	0	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: 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	T	R	R
Maximum Queue (ft)	118	140	168	208	213	61	70	153	205	250	151	158	
Average Queue (ft)	58	73	127	149	149	22	13	72	93	158	68	16	
95th Queue (ft)	99	126	161	181	195	54	45	133	175	251	127	69	
Link Distance (ft)	510	510	510	510	510	868	868	868	868	868			
Upstream Blk Time (%)													
Queuing Penalty (veh)													
Storage Bay Dist (ft)											400	400	
Storage Blk Time (%)													
Queuing Penalty (veh)													

Intersection: 7: I-5 NB Ramps & Genesee Avenue

Movement	NB	NB	NB	NB
Directions Served	L	LT	R	R
Maximum Queue (ft)	733	751	751	710
Average Queue (ft)	512	732	730	309
95th Queue (ft)	991	746	742	688
Link Distance (ft)	712	712	712	712
Upstream Blk Time (%)	7	92	71	0
Queuing Penalty (veh)	0	0	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: N Torrey Pines Road & N. Proj Dwy

Movement	WB
Directions Served	R
Maximum Queue (ft)	30
Average Queue (ft)	2
95th Queue (ft)	15
Link Distance (ft)	216
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: N Torrey Pines Road

Movement

Directions Served

Maximum Queue (ft)

Average Queue (ft)

95th Queue (ft)

Link Distance (ft)

Upstream Blk Time (%)

Queuing Penalty (veh)

Storage Bay Dist (ft)

Storage Blk Time (%)

Queuing Penalty (veh)

Zone Summary

Zone wide Queuing Penalty: 78

Intersection: 1: N Torrey Pines Road & N.U. System Dwy

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	TR
Maximum Queue (ft)	29	231	115	156	143	82	29	104	104
Average Queue (ft)	3	117	13	72	51	21	3	89	48
95th Queue (ft)	17	190	50	133	117	60	17	121	112
Link Distance (ft)	267	689		379	379	379			
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			90				150		
Storage Blk Time (%)				3					
Queuing Penalty (veh)				0					

Intersection: 2: N Torrey Pines Road & Torrey Pines Science Park

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	TR	L	T	T
Maximum Queue (ft)	96	31	119	53	72	26	115	93
Average Queue (ft)	43	16	39	12	6	2	27	16
95th Queue (ft)	84	40	88	37	33	14	74	57
Link Distance (ft)	357	357					591	591
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)						150		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 3: N Torrey Pines Road SB Connector & Callan Road

Movement	EB	WB	SB	SB
Directions Served	TR	LT	L	TR
Maximum Queue (ft)	40	164	43	29
Average Queue (ft)	3	57	10	13
95th Queue (ft)	17	112	34	36
Link Distance (ft)	133	491		294
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			40	
Storage Blk Time (%)			0	0
Queuing Penalty (veh)			0	0

Intersection: 4: Callan Road & N. Torrey Pines Rd NB Connector

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	56	57	55
Average Queue (ft)	10	5	25
95th Queue (ft)	40	29	47
Link Distance (ft)	491		298
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

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)	68	68	131	120	125	92	157	216	255	250	43	212
Average Queue (ft)	20	29	95	99	56	45	78	107	117	22	10	121
95th Queue (ft)	56	61	125	112	104	82	155	192	213	97	31	205
Link Distance (ft)	175						1220	1220	1220			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)		50				260				225	170	
Storage Blk Time (%)	6	1							1			3
Queuing Penalty (veh)	4	0							1			1

Intersection: 5: N Torrey Pines Road & Science Park Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	162	251	124
Average Queue (ft)	84	116	15
95th Queue (ft)	160	192	76
Link Distance (ft)			
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			100
Storage Blk Time (%)		12	0
Queuing Penalty (veh)		1	0

Intersection: 6: I-5 SB Ramps & Genesee Avenue

Movement	EB	EB	EB	EB	EB	EB	EB	B54	B54	B54	WB	WB
Directions Served	T	T	T	T	T	R	R	T	T	T	L	L
Maximum Queue (ft)	599	623	572	503	166	165	128	984	1008	1003	298	295
Average Queue (ft)	492	493	397	209	92	50	60	343	557	581	146	157
95th Queue (ft)	733	728	677	487	156	96	103	916	1321	1354	232	233
Link Distance (ft)	503	503	503	503	503			976	976	976	510	510
Upstream Blk Time (%)	49	47	4	0				0	2	6		
Queuing Penalty (veh)	292	285	23	2				4	21	62		
Storage Bay Dist (ft)							435	435				
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 6: I-5 SB Ramps & Genesee Avenue

Movement	WB	WB	WB	SB	SB	SB	SB
Directions Served	T	T	T	L	LT	R	R
Maximum Queue (ft)	61	85	83	557	557	557	419
Average Queue (ft)	25	31	30	538	548	433	23
95th Queue (ft)	49	62	60	572	559	791	148
Link Distance (ft)	510	510	510	542	542	542	542
Upstream Blk Time (%)				76	100	72	
Queuing Penalty (veh)				0	0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 7: 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)	530	529	321	73	53	143	130	135	100	906	425	412
Average Queue (ft)	524	522	27	26	19	67	28	73	47	751	421	405
95th Queue (ft)	533	532	121	60	54	128	85	126	93	1070	449	430
Link Distance (ft)	510	510	510	510	510	868	868	868	868	868		
Upstream Blk Time (%)	39	40								10		
Queuing Penalty (veh)	189	196								0		
Storage Bay Dist (ft)											400	400
Storage Blk Time (%)										0	15	4
Queuing Penalty (veh)										1	25	6

Intersection: 7: I-5 NB Ramps & Genesee Avenue

Movement	NB	NB	NB	NB
Directions Served	L	LT	R	R
Maximum Queue (ft)	725	746	727	712
Average Queue (ft)	379	724	564	304
95th Queue (ft)	873	745	1038	831
Link Distance (ft)	712	712	712	712
Upstream Blk Time (%)	9	75	44	0
Queuing Penalty (veh)	0	0	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: N Torrey Pines Road & N. Proj Dwy

Movement	WB
Directions Served	R
Maximum Queue (ft)	32
Average Queue (ft)	5
95th Queue (ft)	24
Link Distance (ft)	216
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: N Torrey Pines Road

Movement	WB
Directions Served	R
Maximum Queue (ft)	30
Average Queue (ft)	5
95th Queue (ft)	24
Link Distance (ft)	63
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 1115

ONE ALEXANDRIA NORTH (PTS# 691942)

VEHICLE MILES TRAVELED (VMT) ASSESSMENT

CITY OF SAN DIEGO, CA

MARCH 14, 2022

JOB NUMBER: 19366-AT

RICK

RICK ENGINEERING COMPANY

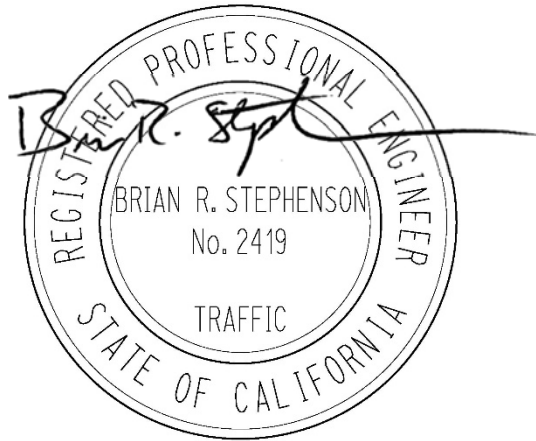


rickengineering.com

**ONE ALEXANDRIA NORTH
VEHICLE MILES TRAVELED (VMT) ASSESSMENT
PTS# 691942
CITY OF SAN DIEGO, CA**

MARCH 14, 2022

**PREPARED FOR:
ALEXANDRIA REAL ESTATE EQUITIES, INC
10996 TORREYANA ROAD, STE. 250
SAN DIEGO, CA 92121**



PREPARED BY:

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PURPOSE OF ASSESSMENT

The following Vehicle Miles Traveled (VMT) Assessment was prepared in accordance with the California Environmental Quality Act (CEQA) Senate Bill (SB 743) requirements provided in the City of San Diego Transportation Study Manual (TSM) dated September 29, 2020.

The purpose of this VMT assessment is to conduct a VMT screening assessment of the proposed One Alexandria North project (PTS #691942) based on the City of San Diego's screening criteria, to determine if a project-related significant impact would occur, and to propose mitigation for the potential significant impact.

PROJECT DESCRIPTION

The One Alexandria North project (the project) is in a 11.4-acre site located at 11255-11355 N. Torrey Pines Road, in the City of San Diego. 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*.

The project proposes to demolish two existing buildings currently occupied by National University Corporate Headquarters Office totaling 133,660 square feet and a stand-alone amenity building and construct two new research and development buildings totaling 256,500 square feet (including 13,824 sf of amenity space). All parking will be provided onsite. The project will construct a parking structure that will provide 502 standard parking stalls and 11 ADA accessible stalls, with additional 52 standard parking stalls and 5 ADA accessible stalls within the two new research and development buildings for a total of 570 standard parking stalls and 16 ADA accessible stalls provided on-site. Out of the total 570 standard parking stalls, 46 designated clean air vehicle parking/carpool stalls will be provided in the parking structure. The project will also provide 36 long-term bicycle parking and 36 short-term bicycle racks on-site, as well as 11 motorcycle parking stalls.

Discretionary actions required by the project consists of a Coastal Development Permit (CDP), Site Development Permit (SDP), Neighborhood Development Permit (NDP) and Tentative Parcel Map (TM) to allow for development of a two building Research and Development campus with supporting amenity uses, and a parking structure. No rezoning or Community Plan Amendments are required or proposed. The Project opening year is assumed to be in 2023 and with no phasing of development.

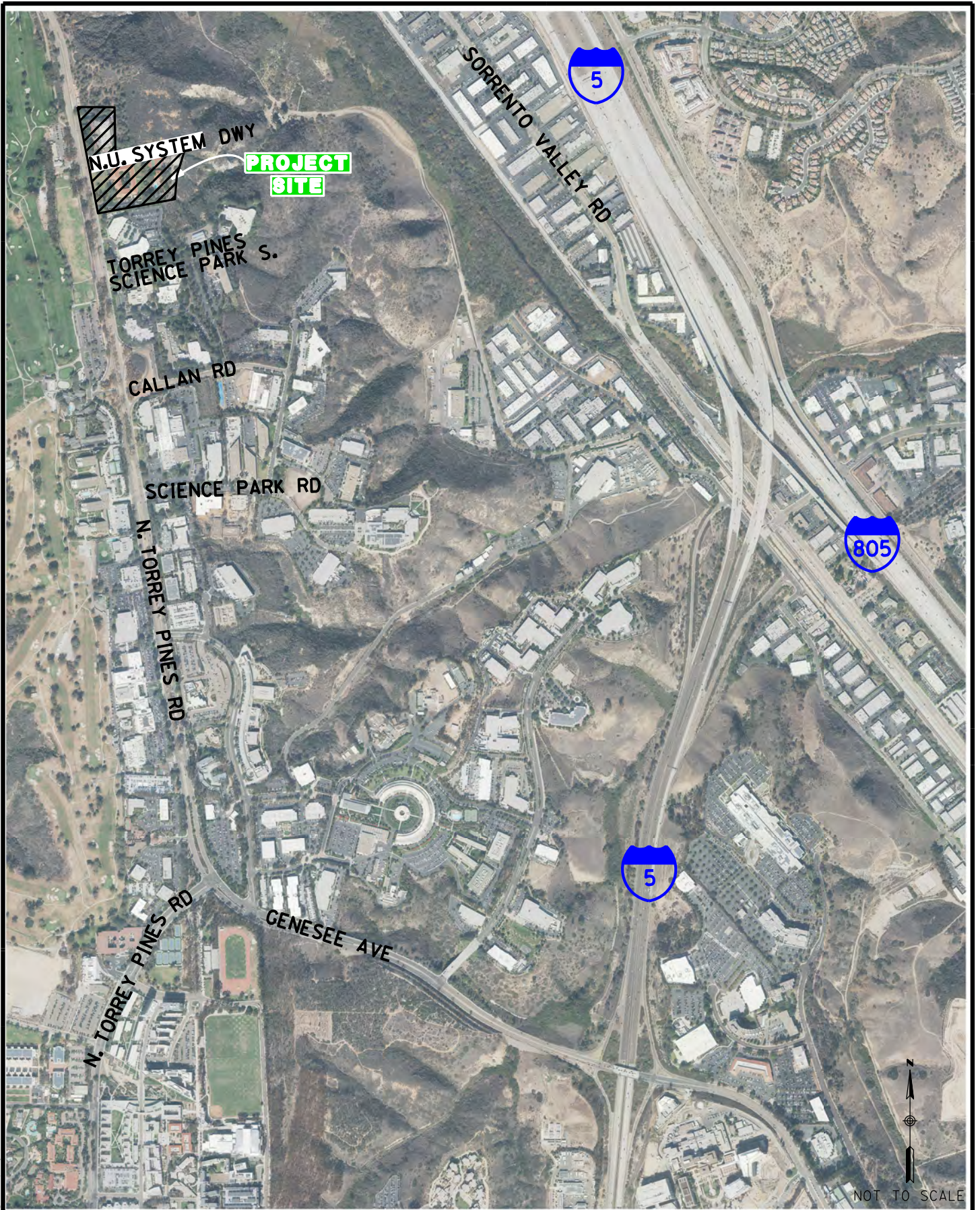
The project proposes four access points via one forty five-foot wide existing signalized entry way, two thirty-foot wide existing right-in/right-out only driveways and a new thirty-foot wide right-in/right-out only driveway all along N. Torrey Pines Road. The project proposes to reconstruct the three existing project driveways to current standards per City of San Diego Standard Drawings. The reconstructed existing northernmost driveway is proposed as emergency access only driveway to provide a fire access loop at N. Torrey Pines Road on the northern parcel. The main signalized project driveway at N. Torrey Pines Road and N.U. System Dwy intersection will remain as full access and the remainder three driveways will operate as right-in/right-out only access.

Regional access to the site is provided by the I-5 Freeway, I-805 Freeway and SR-56 Highway, and local access to the site is provided via N. Torrey Pines Road and Genesee Avenue.

The project traffic volumes generated by the proposed development were estimated utilizing City of San Diego's Trip Generation Manual (May 2003) for a Scientific Research and Development use. Using the driveway trip rates of 8 weekday trips/thousand square feet, the project is expected to generate approximately 2,052 Average Daily Traffic (ADT) with 328 (295 inbound and 33 outbound) AM peak hour trips and 287 (29 inbound and 259 outbound) PM peak hour trips. The two existing buildings totaling 133,660 square feet to be demolished are currently occupied by National University Corporate office. It is estimated that it currently generates approximately 1,337 Average Daily Traffic (ADT) with 201 (180 inbound and 21 outbound) AM peak hour trips and 201 (21 inbound and 180 outbound) PM peak hour trips. These trips were subtracted out for a net of 715 Average Daily Traffic (ADT) with 127 (115 inbound and 12 outbound) AM peak hour trips and 86 (8 inbound and 78 outbound) PM peak hour trips.

Exhibit 1 shows the project vicinity map.

Exhibit 2 shows the proposed project site plan.



N.U. SYSTEM DWY

PROJECT SITE

TORREY PINES SCIENCE PARK S.

CALLAN RD

SCIENCE PARK RD

N. TORREY PINES RD

N. TORREY PINES RD

GENESEE AVE

SORRENTO VALLEY RD

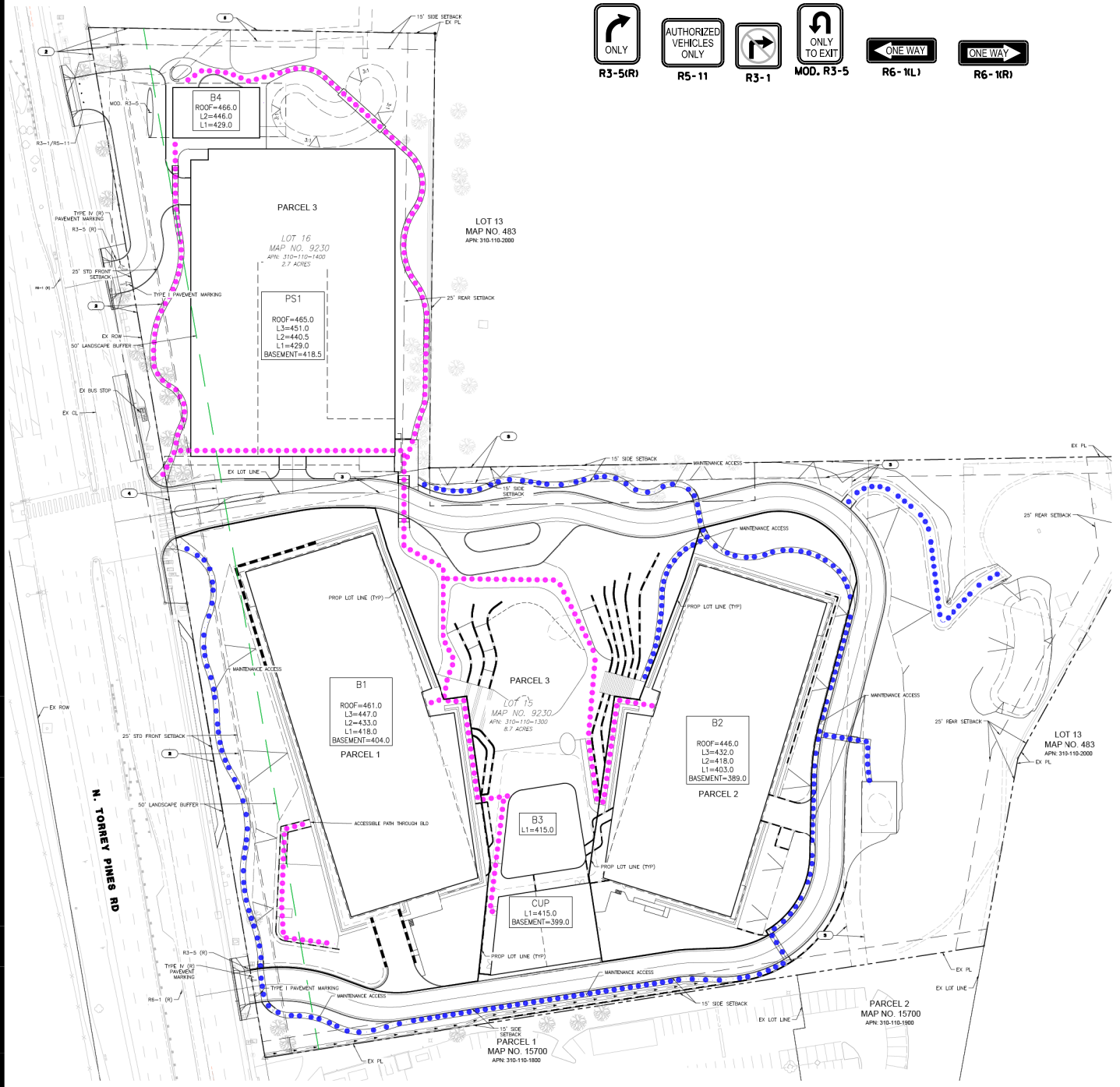
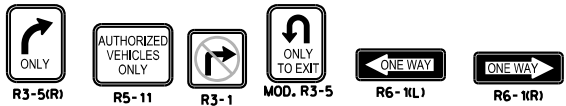


NOT TO SCALE

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EXHIBIT 1
VICINITY MAP
ONE ALEXANDRIA NORTH



NOT TO SCALE

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EXHIBIT 2
 PROPOSED PROJECT SITE PLAN
 ONE ALEXANDRIA NORTH

VMT ASSESSMENT

The following screening criterion from the City's TSM was utilized to determine if the project would be screened out from VMT Analysis due to project characteristics and/or location:

- Commercial Employment Project is located within a VMT efficient location per SANDAG Screening Map (15% or more below average employee VMT/employee)

As the proposed land use of the site is Scientific Research and Development, it would fall within the Commercial Employment category for VMT purposes, in which the VMT threshold is based on employee VMT per employee.

The SANDAG San Diego Region SB 743 VMT Maps from the Traffic Forecast Information Center (TFIC) SB 743 VMT Web App provides the following information about census tract 83.39, in which the project site is located, which is also contained in **Appendix A**:

- SANDAG Series 14 ABM2 (Base Year 2016) Regional Mean employee VMT per Employee: **27.2**
- Project Site Series 14 ABM2 (Base Year 2016) Census Tract employee VMT per Employee: **32.1**
- Percent of Series 14 ABM2 (Base Year 2016) Regional Mean employee VMT per Employee: **118.0%**

Commercial Employment projects located in census tracts with higher than **23.1** employee VMT per employee (85% of regional mean) are considered to be located in a VMT-inefficient area and are not screened out from VMT analysis. The census tract in which the project site is located is shown to have **32.1** employee VMT per employee, or **118.0%** of the regional mean. Therefore, the project is not screened out from VMT analysis per the City's screening criteria, and due to the location of the project in a VMT-inefficient area, the project may result in a significant VMT impact.

SIGNIFICANCE DETERMINATION

Since the project did not satisfy the above screening criterion, it must evaluate the VMT produced by the project. For Commercial Employment projects that are expected to generate less than 2,400 daily trips, the project's VMT per Employee is considered the same as the employee VMT per Employee of the census tract in which it is located.

As stated above, the project is in a census tract with 32.1 VMT per employee, or 118.0% of the regional mean. The proposed project would have a significant VMT impact based on the significance threshold for a commercial employment project of 15% below the regional mean VMT per Employee. Therefore, mitigation is required to reduce the project's VMT impact to the greatest extent feasible.

MITIGATION MEASURES

Although the project is within the Coastal Overlay Zone and not yet subject to the Complete Communities: Mobility Choices ordinance (effective January 8, 2021 outside the Coastal Zone), the Project has chosen to participate in the City of San Diego's Complete Communities Mobility Choices Program and rely upon the Findings and Statement of Overriding Considerations (SOC) from the Complete Communities: Housing Solutions and Mobility Choices Final Program Environmental Impact Report (PEIR) as mitigation to the extent feasible for its significant unmitigated VMT transportation impact.

The San Diego Municipal Code (SDMC) Ordinance Number O-21274, provides the development regulations for the Mobility Choices portion of the Complete Communities program. According to the ordinance, the project is within Mobility Zone 3. Mobility Zone 3 means a community planning area boundary with a VMT efficiency that is 85 percent or less of the regional average employee VMT per employee.

SDMC Section 143.1103(b) indicates the requirement for the application of VMT Reduction Measures for all development located within a Mobility Zone 3 in accordance with the *Land Development Manual Appendix T*. The Land Development Manual Appendix T provides a list of VMT Reduction Measures that are split into a series of categories, which include Pedestrian Measures, Bicycle Supportive Measures, Transit Supportive Measures, and Other Measures. Each of the individual measures is given an assigned point value per unit of measure.

The Project will provide measures as required by the ordinance that add up to at least 8 points as identified in the Land Development Manual Appendix T, through the measures presented in Table 1 below.

**Table 1
VMT Reduction Measures for Mobility Choices Compliance**

#	VMT REDUCTION MEASURE	DESCRIPTION	UNIT or YES/NO	POINTS /UNIT	TOTAL POINTS
BICYCLE SUPPORTIVE MEASURES					
1	Providing short-term bicycle parking spaces that are available to the public, at least 10% beyond the minimum requirements	The project is required to provide 30 short term bike parking spaces and will provide 36 spaces.	Each multiple of 10% beyond the minimum	1.50	3.00
2	Providing long-term bicycle parking spaces, at least 10% beyond the minimum requirements	The project is required to provide 30 long term bike parking spaces and will provide 36 spaces.	Each multiple of 10% beyond the minimum	2.00	4.00
3	Providing on-site showers/lockers at least 10% beyond the minimum requirement	The project is required to provide 13 lockers and will provide 40 spaces. The project is also required to provide 4 shower facilities and will be providing 8 facilities.	Yes	2.00	2.00
TRANSPORTATION SUPPORTIVE MEASURES					
4	Providing low cost amenities/upgraded features to an existing transit stop (above existing condition), i.e., addition of bench public art, static schedule and route display, trash receptacle.	The project will coordinate with NCTD to provide a bus shelter, a bench and a trash receptacle to the bus stop located approximately 65 feet north of N.U. System Dwy adjacent the project site.	Each upgraded feature	1.00	1.00
TOTAL PROJECT VMT REDUCTION MEASURE POINTS					10.00

As shown in Table 1, the Project’s proposed VMT reduction measures total to 10 points, meeting the minimum of 8 points required.

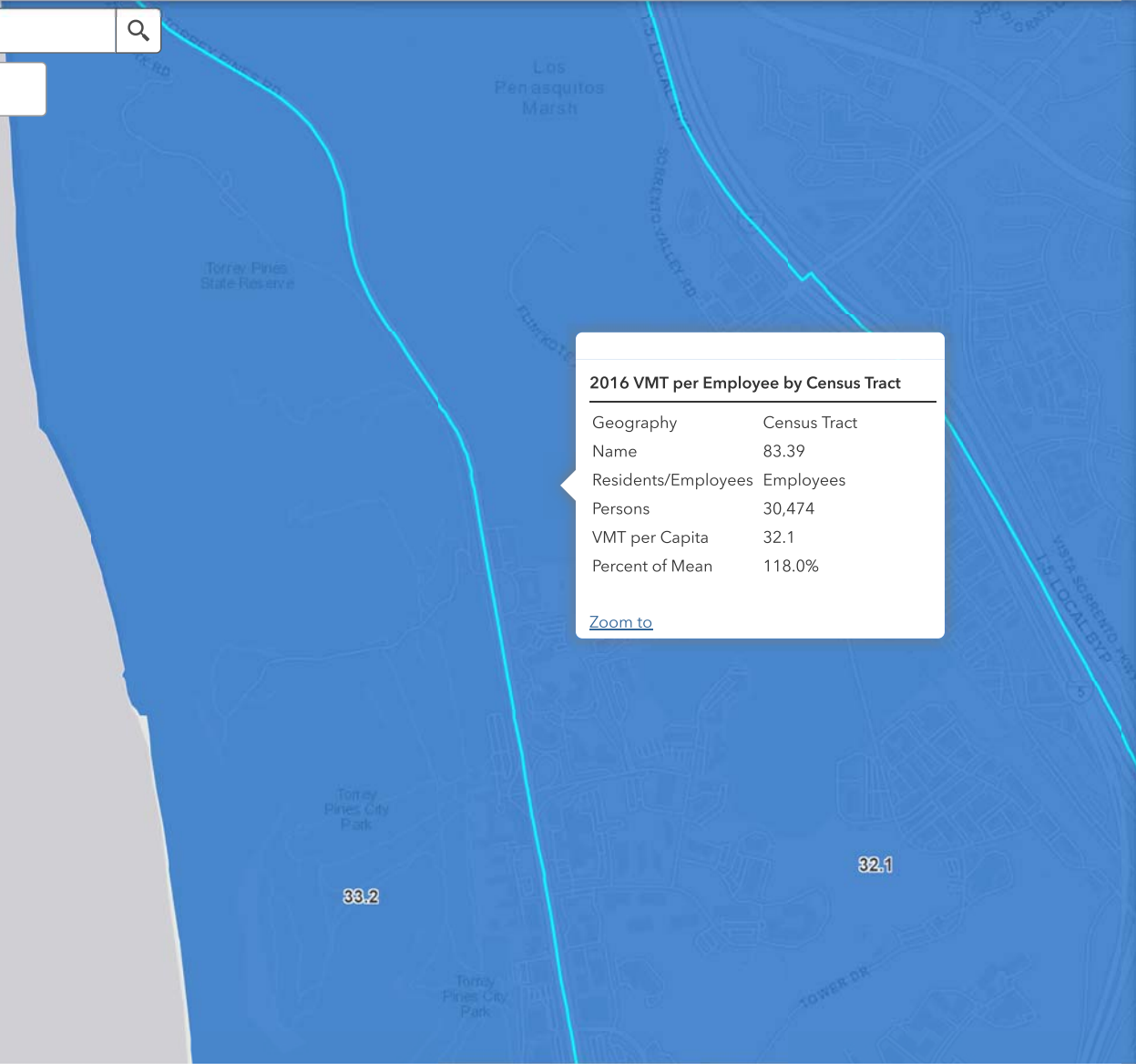
CONCLUSIONS

This VMT screening assessment showed that the project site is located in a VMT-inefficient area and the project VMT evaluation results in a significant VMT impact. Based on the project's location in Mobility Zone 3, the project chooses to provide VMT reduction measures that will exceed the minimum required 8 points for eligibility to opt into the City of San Diego's Complete Communities Mobility Choices Program.

Therefore, the project will mitigate its significant VMT impact to the extent feasible by opting into the City of San Diego's Complete Communities Mobility Choices Program and relying upon the Findings and SOCs from the Complete Communities: Housing Solutions and Mobility Choices Program Final PEIR.

APPENDIX A

SANDAG SCREENING MAP



2016 VMT per Employee by Census Tract

Geography	Census Tract
Name	83.39
Residents/Employees	Employees
Persons	30,474
VMT per Capita	32.1
Percent of Mean	118.0%

[Zoom to](#)

Map Legend / Disclaimer

- Map Legend**
- Percent of Mean
- More than 125% of Regional Mean
 - 100% to 125% of Regional Mean
 - 85% to 100% of Regional Mean
 - 50% to 85% of Regional Mean
 - Less than 50% of Regional Mean
 - No VMT

Current Data

2016 - Series 14 (Scenario ID 434)
 Regional Mean = 19.0 VMT per Resident
 Regional Mean = 27.2 VMT per Employee

Archived Data

2012 - Series 13 (Scenario ID 720)
 Regional Mean = 17.6 VMT per Resident
 Regional Mean = 25.9 VMT per Employee

Disclaimer

The maps provided by SANDAG are an interpretation of the Senate Bill 743 Technical Advisory guidelines published by the California Office of Planning and Research and are provided as a resource to the jurisdictions in the San Diego region to use as they see fit. Users of the data should exercise their professional judgment in reviewing, evaluating and analyzing VMT reduction estimate results from the tool. Each agency should consult with CEQA experts and legal counsel regarding their own CEQA practices and updates to local policies. Refer to full disclaimer and additional information relating to the use of the SB 743 VMT Map Web Application.