

Appendix F

Traffic Study

March 21, 2022 Traffic Study updates the enclosed June 26, 2015 Traffic Study. The earlier analysis addressed a larger project configuration. The conclusions presented in the attached report and shown in Chapter 3 of this ISMND are not changed with the currently proposed project.

Keith Higgins

Traffic Engineer

March 12, 2022

David Elliott
David J. Elliott & Associates
17800 Cunha Lane
Salinas, CA 93907

Re: Palmas de Greenfield Multi-Family Residential Development Traffic Study, Greenfield, California

Dear Dave,

Per your request, this is a traffic study for the proposed Palmas de Greenfield Multi-family Residential Development. The Project is proposed to include 18 apartments and 14 condominiums/townhomes on the east side of Fourth Street between Apple and Palm Avenues in Greenfield, California. The project location is included as **Exhibit 1**, which also includes the project site plan.

This report is an update of the traffic study of the previous development proposal submitted in a letter to Eduardo Couttolenc, Salinas, California, dated June 26, 2015 entitled "Greenfield Mixed-Use Project, Greenfield, California," (Previous Project Traffic Study), which is included herein as **Appendix A**. The previous study analyzed the traffic impacts of a mixed use project including four apartments, 20 townhomes and approximately 16,000 square feet of commercial / retail floor area.

The City of Greenfield has requested an update of the previous traffic study to reflect the change in project description and that the previous study was prepared in 2015, which is outdated. The traffic operations analysis is based on information in the Previous Project Traffic Study, more recent traffic studies of land development projects elsewhere in Greenfield as well as the "City of Greenfield Traffic Impact Fee Program," Higgins Associates, May 24, 2005. In addition, this study includes an evaluation of the project's vehicle-miles-traveled (VMT) impacts to comply with the current California Environmental Quality Act (CEQA) requirements.

This study includes the following scope of work.

1. Discussion of Existing traffic operations at the US 101/Oak Avenue interchange, including the following intersections.
 - a. Oak Avenue / US 101 Southbound Ramps
 - b. Oak Avenue / US 101 Northbound Ramps
 - c. Oak Avenue / Fourth Street
2. Estimate of Current Project trip generation estimate, compared with the Previous Project.
3. Description of General Plan build out traffic conditions at the US 101 / Oak Avenue interchange.
4. VMT analysis.

1. Existing Traffic Operations

Traffic operations at the following three study intersections were studied in the previous project traffic study.

- a. Oak Avenue / US 101 Southbound Ramps
- b. Oak Avenue / US 101 Northbound Ramps
- c. Oak Avenue / Fourth Street

As indicated on **Appendix A, Exhibits 4A and 4B**, all three intersections operated well within acceptable levels of service and did not need any improvements in 2015. Subsequently, a traffic study was prepared for the Las Viñas subdivision in the southern portion of Greenfield entitled “Las Viñas (formerly The Vines) Residential Development Traffic Impact Report Update,” Keith Higgins Traffic Engineer, February 18, 2019. That study determined that also determined all three intersections operated acceptably as of 2018, as indicated on **Exhibit 2**.

Exhibit 3 provides a summary of the total entering morning and evening peak hour traffic at the three study intersections in 2015 as well as 2018. Current traffic volumes are expected to be higher than the 2018 volumes. However, the COVID pandemic has affected traffic patterns, thus the validity of traffic counts if collected under current conditions. In order to estimate traffic volumes, the 2022 volumes are assumed to have increased at the annual growth rate between the 2018 volumes and traffic volumes expected at General Plan buildout in 2030. **Exhibit 3** also summarizes the General Plan buildout volumes estimated in the Previous Project Traffic Study. The 2022 volumes are estimated to be about 14.3% to 17.7% higher than in 2018. This is a growth rate of about 3.5% to 4% per year, which is consistent with the Greenfield population increase of about 3.6% per year from 2018 to 2020. The increase in traffic from 2018 to 2022 does not result in a decline in traffic operations that would require capacity or traffic control improvements.

2. General Plan Buildout Traffic Operations

As indicated on **Appendix A, Exhibits 4A and 4B**, the Oak Avenue intersections with the Northbound and Southbound US 101 Ramps will operate at an acceptable level of service through General Plan Buildout, which will occur in about 2030. However, the Oak Avenue / Fourth Street intersection is expected to operate deficiently and require the addition of left turn lanes on eastbound Oak Avenue as well as northbound and southbound Fourth Street. A second westbound Oak Avenue through lane is also recommended. Stop signs will be needed on both Oak Avenue approaches in addition to the existing stop signs on northbound and southbound Fourth Street.

The City of Greenfield has adopted a traffic impact fee to fund traffic improvements locations throughout the city. The improvements would include installing traffic signals at the Oak Avenue intersections with the Southbound US 101 Ramps, Northbound US 101 Ramps and Fourth Street intersections as well as widening the existing bridge over US 101 to provide left turn lanes on Oak Avenue. Based on the results of the Previous Project Traffic Study, these are likely beyond what will be needed to accommodate traffic at the buildout of the current General Plan.

3. Project Trip Generation

As indicated on **Exhibit 4**, the currently proposed Project is expected to generate about 201 daily trips with 15 during the AM peak hour and 18 during the PM peak hour. This compares with the trip generation

estimate for the Previous Project (2015 Mixed Use proposal) that includes 809 daily trips with 30 during the AM peak hour and 52 during the PM peak hour. The current Project will result in about 608 daily trips, 15 AM peak hour trips and 34 PM peak hour trips less than the previous proposal. This is about one-fourth as many daily trips, one-half as many AM peak hour trips and about one-third as many PM peak hour trips as the previous proposal. The current Project impacts will be proportionately less than the previous proposal. The above estimates are based upon the "Trip Generation Manual," Institute of Transportation Engineers, 9th Edition, 2012, which was used in the Previous Project Traffic Study.

Exhibit 5 compares trip generation estimates for the previous and current Projects based upon the latest (11th Edition) of the Trip Generation Manual. The proposed project is estimated to generate about 216 daily trips with 13 during the AM peak hour and 16 during the PM peak hour. This is qualitatively the same as the estimate based on the 9th Edition of the "Trip Generation Manual." However, the 2015 proposed mixed use proposal would be expected to generate about 1,035 daily trips with 50 during the am peak hour and 108 during the PM peak hour. The current Project would have a much lower relative trip generation to the previous Project if the estimate was based upon the latest Trip Generation Manual.

4. Existing Plus Project Traffic Conditions

Exhibit 3 tabulates the anticipated increase in AM and PM peak hour traffic at each of the three study intersections from the previous project as well as the current project. The current project is expected to generate about represent an increase of about 1% in total entering traffic at the study intersections. This is about 1/2 to 1/3 the increase anticipated from the previous proposal. **Appendix A, Exhibit 4A** indicates that the previous proposal would increase delay by only a fraction of a second for any movement at the study intersections. The current proposal will result in increases in delay of about 1/2 to 1/3 of the impact anticipated from the previous proposal. The current Project will have an imperceptible effect on traffic operations at the Northbound and Southbound US 101 Ramp intersections with Oak Avenue intersection as well as at the Oak Avenue / Fourth Street intersection.

5. Vehicle-Miles-Traveled

As required by California SB 743, vehicle-miles-travelled (VMT) has recently replaced level of service in the evaluation of environmental impacts under CEQA. The "Technical Advisory on Evaluating Transportation Impacts in CEQA," State of California Governor's Office of Planning and Research, December 2018 (OPR Guidelines), provides the implementation guidance for SB 743 for evaluating development proposals.

Monterey County and Greenfield are in the process of formally adopting methodologies and procedures for determining if development proposals will require further VMT analysis or if the proposal is below significance thresholds and exempt from additional analysis. Consistent with OPR Guidelines, it is being established that a project with an anticipated VMT that is over 15% below the current development average would have a potentially significant impact on traffic.

A draft VMT policy and corresponding evaluation methodology have been developed using the "VMT Calculator" based on the Association of Monterey Bay Area Governments Regional Travel Demand Model

David Elliott
March 12, 2022

(AMBAG RTDM). The VMT Calculator estimates the VMT for land uses within individual Traffic Analysis Zones (TAZ's) using the AMBAG RTDM, which are geographic subareas throughout the cities and unincorporated areas of Monterey County. The VMT Calculator also compares the result to the significance threshold described above.

The Monterey County VMT Calculator bases the estimate of Project VMT on the location of the Project within the County, which is identified by the Traffic Analysis Zone (TAZ) in which the project is located. **Exhibit 6** provides a map of Greenfield that indicates the Project is in TAZ 1706. As indicated on **Exhibit 7**, the VMT calculator estimates that residential development within this zone has an Average VMT per capita of 12.0. The Threshold of Significance for this TAZ is 12.3. The Project is expected to generate a VMT per capita below this threshold. Therefore, the Project will have a less-than-significant VMT impact. No mitigations such as trip reduction strategies are required.

6. Summary and Recommendations

The following are the findings and recommendations of this analysis.

- a. Existing traffic operations are acceptable in the study area. No improvements are required.
- b. The current Project will not result in any noticeable effects on traffic operations in the study area.
- c. General Plan Buildout traffic operations will be acceptable at the US 101/Oak Avenue interchange but will be deficient at the Oak Avenue/Fourth Street intersection. Improvements will be required including left turn lanes on the northbound Fourth Street and both Oak Avenue approaches. At a minimum, four-way stop control will be required.
- d. The Greenfield Traffic Impact Fee includes funding for traffic signals at the Oak Avenue intersections with the Southbound US 101, Northbound US 101 and Fourth Street intersections as well as widening of the Oak Avenue bridge over US 101. This may be more than necessary at the buildout of the current General Plan, which indicates that adequate funding should be available to implement whatever level of improvements are determined as General Plan Buildout conditions are approached in the future.
- e. The Project will be required to pay a Greenfield traffic impact fee and Transportation Agency for Monterey County Development Impact Fee, which will mitigate the Project's contribution to cumulative local and regional traffic effects.
- f. The Project will have an insignificant VMT impact. No VMT mitigation is required.

If you have any questions regarding this evaluation or need additional information, please do not hesitate to contact me at your convenience.

Thank you for the opportunity to assist you.

Respectfully submitted,

Keith Higgins

Keith B. Higgins, PE, TE
Attachments

Exhibit 1

Project Location Map and Site Plan

Symbols

	Existing Spot Elevation
	New Spot Elevation
	Existing Contours
	New Contours
	Top of Wall Elevation
	Top of Curb Elevation
	Property Line
	Plan North
	Building Section Reference
	Sheet Number Where Drawn
	Detail Number
	Detail Reference
	Detail Plan Reference
	Section Number
	Sheet Number Where Drawn
	Wall Section Reference
	Wall Section Reference
	Match Line See Sheet A1.1 For Continuation
	Shaded Side Shown This Sheet
	Revision Reference
	Note Reference
	Revision Reference

True North

Vicinity Map (N.T.S.)

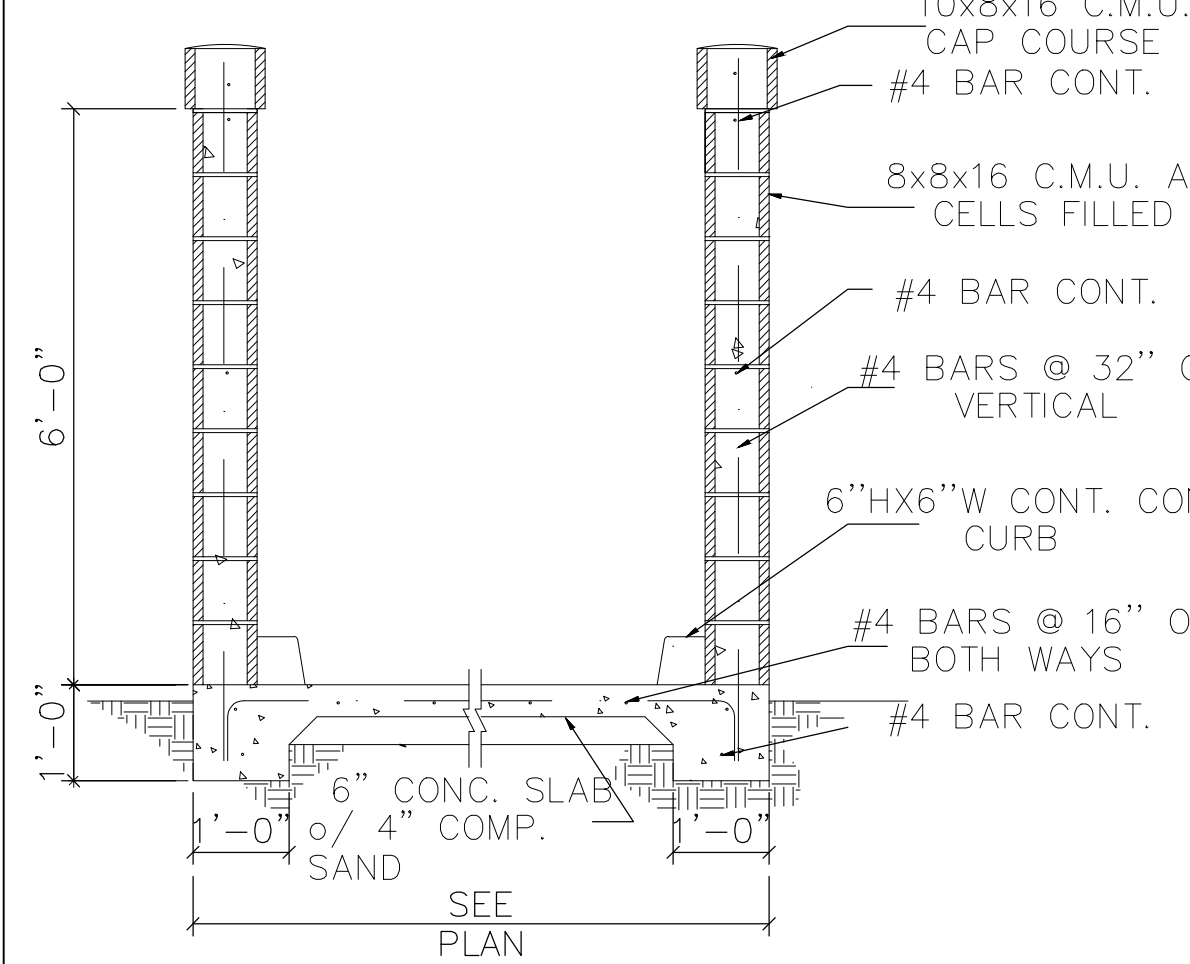
9

Project Data					
OWNER: MR. EDUARDO COUTTOLEO 1054 UNIVERSITY AVE. SALINAS CA. 93901					
SCOPE OF WORK: NEW 32 MULTI FAMILY RESIDENTIAL UNITS WITH SUPPORT FACILITIES.					
GUERRERO SUBD. 11-C&T-26 APN: 024-151-011 LOT AREA: 61,859 S.F. / 43,560 = 1.42ACRES					
CONSTRUCTION TYPE V-B MIXED OCCUPANCY, B/R-3 SPRINKLERS, (DEFERRED PERMIT) ZONING CHANGE FROM EXISTING <CH> TO PROPOSED <RM>					
DESCRIPTION	UNIT COUNT	AREA	REQ CARS	REQ PARKING NUMBER	PROVIDED PARKING NUMBER
LAUNDRY ROOM (BLDG 1)	1	1,600 S.F.	0/00	0	0
COMMUNITY ROOM (BLDG 2)	1	1,600 S.F.	0/00	0	0
(HC) ACCESSIBLE APARTMENTS	4	4,180 S.F.	4/Unit	8	8
(A) 3 BDROOM APPARTMNTS	14	14,630 S.F.	2/Unit	28	28
(B) 2-STORY TOWNHOUSES	14	14,400 S.F.	2/Unit	28	28
CARPOOL PARKING			5%	4	4
ADDITIONAL CAR PARKING					12
MOTORCYCLE					16
BIKE RACKS					24
SUBTOTAL	32	36,410 S.F.		68	120

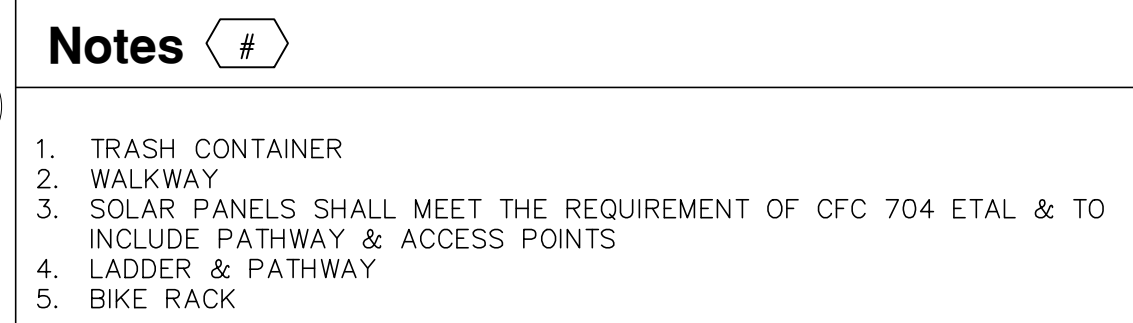
SHEET LIST	
SHEET NUMBER	SHEET NAME
A0.1	ABBREVIATIONS & GENERAL NOTES
C0.0	GENERAL NOTES & CIVIL SHEET INDEX
C1.0	SITE PLAN
C1.1	SIGHING & STRIPING PLAN
C2.1	DEMOLITION PLAN
C3.0	GRADING & DRAINAGE PLAN
C3.1	EROSION CONTROL PLAN
C3.2	STORMWATER CONTROL PLAN
C3.3	UTILITY PLAN
C5.0	MISCELLANEOUS DETAILS
C5.1	EROSION CONTROL DETAILS
C6.0	PLAN & PROFILE PALM APPLE & 4TH
A1.1	SITE PLAN & DETAILS
A1.2	ACCESSIBLE PARKING DETAILS
A1.3	SITE DETAILS
A2.1	TOTAL BUILDING FLOOR PLANS
A2.2	PARTIAL GROUND FLOOR PLANS
A2.3	PARTIAL 1ST FLOOR PLANS
A2.4	PARTIAL 2ND FLOOR PLANS
A2.5	TYPICAL UNITS FLOOR PLANS
A2.6	WINDOW, DOOR & FINISH SCHEDULES
A3.1	SOUTH ELEVATION
A3.2	NORTH ELEVATION
A3.3	SIDE ELEVATIONS
A3.3	LARGE SCALE "EXTERIOR" ELEVATIONS
A3.4	SECTIONS
A3.5	NOT USED
A4.1	ACCESSIBLE RESTROOMS
A5.1	STAIRS DETAILS
S0.1	STRUCTURAL DETAILS
S0.2	STRUCTURAL DETAILS
S0.3	STRUCTURAL DETAILS
S0.4	STRUCTURAL DETAILS
S1.0	FOUNDATION PLAN
S2.0	1ST FLOOR, MAIN LEVEL FRAMING PLAN
S3.0	2ND FLOOR, UPPER LEVEL FRAMING PLAN
S4.0	ROOF FRAMING PLAN
P1.1	SITE PLUMBING PLAN & DETAILS
P2.1	PLUMBING PLANS
P2.2	WATER & GAS SUPPLY PLANS
E1.1	SITE LIGHTING PLAN & DETAILS
E1.2	PANEL SCHEDULES
E1.3	SWITCHBOARD ONE LINE DIAGRAM
E2.1	ELECTRICAL PLANS
T1.0	TOPOGRAPHICAL SURVEY
L2.0	LANDSCAPE PLAN
L2.1	IRRIGATION PLAN

Plan North True North

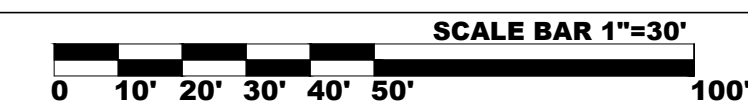
	Planning Architecture Interiors 17800 Cunha Lane Salinas, CA 93907 Tel. 831/663-1418 Fax 831/663-6385 david@djelliott.net	
David J. Elliott & Associates		
		
Multi-Family Residential Development		
Fourth Street Greenfield CA. 93927		
APN: 024-151-011		
Use of these plans and specifications is restricted to the original site for which they were prepared and publication thereof is expressly limited to such use. Reuse, reproduction or publication by any method in whole or in part is prohibited. Title to plans and specifications remain with the architect, and visual contact with them constitutes prima facie evidence of the acceptance of these restrictions.		
Revisions		
No.	Description	Date
1	ADD CIVIL DRWGS & DETLS	03-05-2021
2	DESIGN REV.	09-03-2021
3	CIVIL DESIGN REV.	01-21-2022
4	PLANING PLAN CHECK REV.	02-01-2022
5	PLAN CHECK REV.	03-04-2022
		
Issue Date 02/02/21		
Drawn By JAJA/DJE		
Project Number 1439		
Sheet Title General Notes, Symbols, Vicinity Map, Material Indication & Abbreviations		
Sheet Number A0.1		



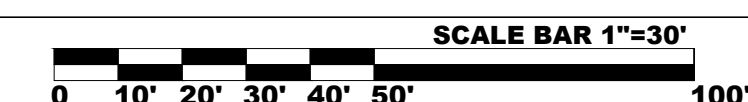
Trash Enclosure Sec. 1/4" = 1'-0" 16

**Trash Enclosures Plans 1/4" =1'-0"** 8

Site Plan 1" = 30'-0"



Site Main Elevation 1" = 30'-0"



Site Main Elevation 1" = 30'-0"



	N-S Street	E-W Street	Existing Intersection Control	Jurisdiction	LOS Standard	Peak Hour	Existing Conditions	
							Delay	LOS
13	US 101 Southbound Ramps	Oak Avenue	One-Way Stop	Caltrans	E	AM	12.6	B
						PM	14.1	B
14	US 101 Northbound Ramps	Oak Avenue	One-Way Stop	Caltrans	E	AM	14.1	B
						PM	16.0	C
15	Fourth Street	Oak Avenue	Two-Way Stop	City of Greenfield	E/E	AM	18.7/11.1	C/B
						PM	27.5/11.2	D/B

Notes:

1. Source: Las Vinas (formerly The Vines) Residential Development Traffic Impact Report Update, Keith Higgins Traffic Engineer, February 18, 2019.
2. Based on November 6, 2018 traffic counts.
3. L, T, R = Left, Through, Right
4. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound
5. Overall City of Greenfield overall level of service (LOS) standard is LOS C, unless otherwise stated.
Overall County of Monterey level of service standard is LOS D.
Overall Caltrans level of service standard is the transition between LOS C and LOS D, abbreviated as "LOS C/D".
6. Side-street level of service standard assumed as LOS E.
7. For signalized and all-way stop intersection analysis, delay is average overall delay in seconds per vehicle (sec/veh).
8. For one- and two-way stop controlled intersection analysis, delay is stop-controlled approach delay(s) in seconds per vehicle (sec/veh).
9. Analysis performed using Highway Capacity Manual 2010 methodologies.

Intersection	Recent Counts				Existing Estimate		Previous Project Traffic Assignment		Current Project Traffic Assignment		Existing Plus Current Project		General Plan Buildout	
	AM Peak Hour		PM Peak Hour		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
	2015	2018	2015	2018	2022	2022	AM	PM	AM	PM	AM	PM	2030	2030
					Increase above 2018				Increase above 2022					
1. US 101 SB Ramps / Oak Ave.	674	905	1,009	1,191	1,049	1,248	14	26	7	9	1,056	1,257	1,129	1,362
					15.9%	4.8%			0.7%	0.7%	16.7%	5.5%		
2. US 101 NB Ramps / Oak Ave.	699	829	889	900	963	1,112	19	34	10	12	973	1,124	1,112	1,536
					16.2%	23.6%			1.0%	1.1%	17.4%	24.9%		
3. Fourth St. / Oak Ave.	586	695	791	934	841	1,069	22	42	11	15	852	1,083	942	1,339
					21.1%	14.5%			1.3%	1.4%	22.6%	16.0%		
Existing (2022) Volumes - Average Increase in Traffic from 2018					17.7%	14.3%								
Existing (2022)Plus Project - Average Increase in Traffic from 2018											18.9%	15.5%		

Keith Higgins
Traffic Engineer

Exhibit 3
Intersection
Entering Volumes

			AM PEAK HOUR				PM PEAK HOUR			
ITE	DAILY		PEAK	%			PEAK	%		
LAND USE	TRIP		HOUR	OF	%	%	HOUR	OF	%	%
CODE	RATE		RATE	ADT	IN	OUT	RATE	ADT	IN	OUT
A. Trip Generation Rates - ITE Trip Manual, 9th Edition, 2012										
1. Apartment (per dwelling unit)	220	6.65	0.51	8%	20%	80%	0.62	9%	65%	35%
2. Residential Condominium / Townhouse (per dwelling unit)	220	5.81	0.44	8%	17%	83%	0.52	9%	67%	33%
3. Specialty Retail Center (per 1,000 sq.ft.)	826	44.32	1.33	3%	60%	40%	2.71	6%	44%	56%
			AM PEAK HOUR				PM PEAK HOUR			
			PEAK	%			PEAK	%		
PROPOSED USES	PROJECT	DAILY	HOUR	OF	TRIPS	TRIPS	HOUR	OF	TRIPS	TRIPS
	SIZE	TRIPS	TRIPS	ADT	IN	OUT	TRIPS	ADT	IN	OUT
B. 2015 Proposal - Mixed Use										
1. Apartments	4 units	27	2	8%	0	2	2	8%	1	1
2. Residential Condominiums / Townhouses	20 units	116	9	8%	2	7	10	9%	7	3
3. Specialty Retail Center	16,000 sq.ft.	709	21	3%	13	8	43	6%	19	24
Gross Total		852	32	4%	15	17	55	6%	27	28
Internal Capture (5% of Gross Total)		43	2		1	1	3		1	2
Net Total		809	30	4%	14	16	52	6%	26	26
C. Current Proposal - Apartments and Townhouses										
1. Apartments	18 units	120	9	8%	2	7	11	9%	7	4
2. Residential Condominiums / Townhouses	14 units	81	6	8%	1	5	7	9%	4	3
Gross and Net Total	32 units	201	15	8%	3	12	18	9%	11	7
D. Current Proposal Change from 2015 Proposal										
		-608	-15		-11	-3	-34		-15	-19

Notes:

1. Based on Project Site Plan dated 2/2/21.

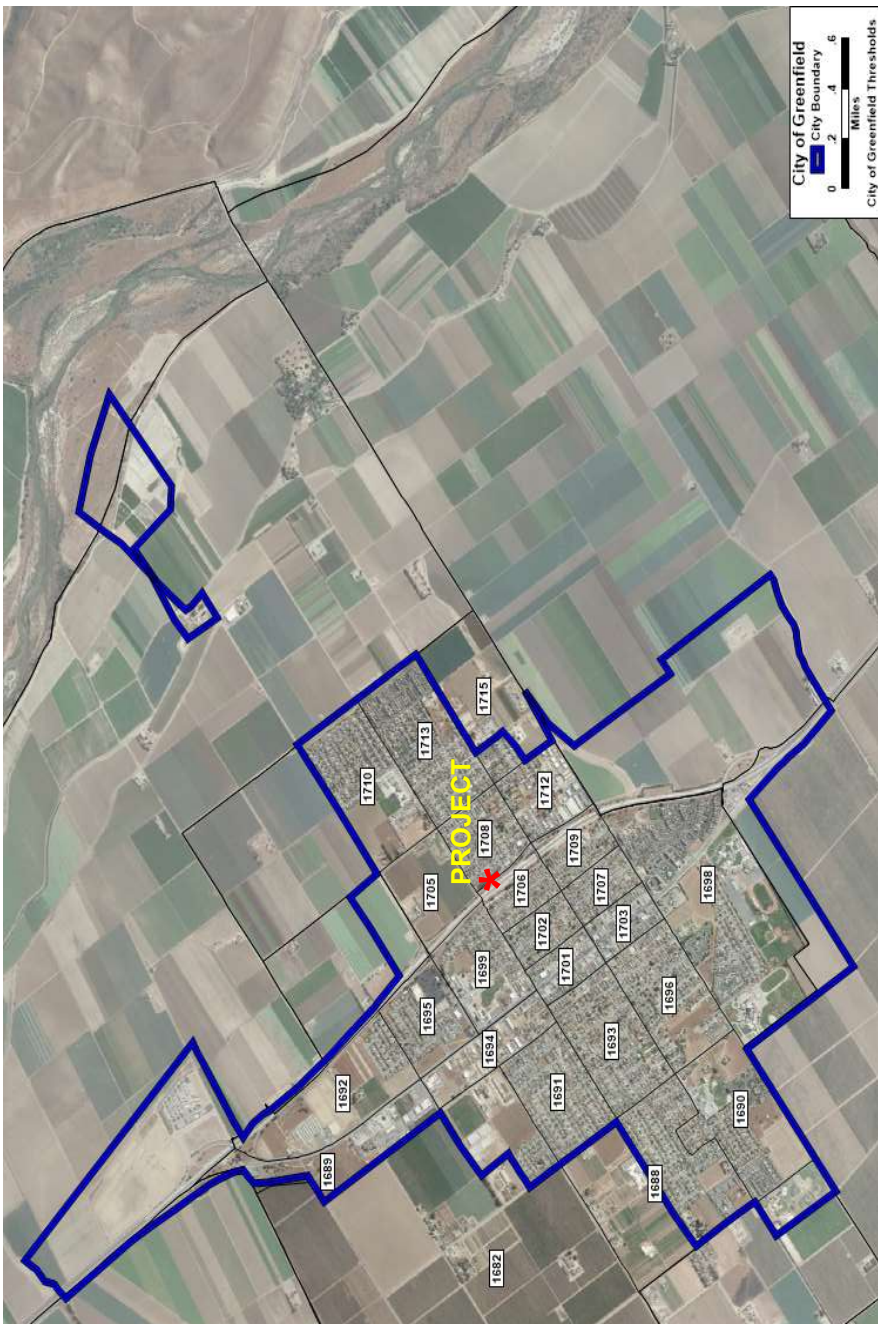
2. Trip generation rates are referenced from "Trip Generation Manual," Institute of Transportation Engineers (ITE), 9th Edition, 2012.

3. sq. ft. = square feet

	ITE LAND USE CODE	DAILY TRIP RATE	AM PEAK HOUR				PM PEAK HOUR			
			PEAK HOUR RATE	% OF ADT	% IN	% OUT	PEAK HOUR RATE	% OF ADT	% IN	% OUT
A. Trip Generation Rates - ITE Trip Manual, 11th Edition, 2021										
1. Multi-Family Housing (per dwelling unit)	220	6.74	0.40	6%	24%	76%	0.51	8%	63%	37%
2. Variety Store (per 1,000 sq.ft.)	814	63.66	3.04	5%	55%	45%	6.7	11%	51%	49%
PROPOSED USES	PROJECT SIZE	DAILY TRIPS	AM PEAK HOUR				PM PEAK HOUR			
			PEAK HOUR TRIPS	% OF ADT	TRIPS IN	TRIPS OUT	PEAK HOUR TRIPS	% OF ADT	TRIPS IN	TRIPS OUT
B. 2015 Proposal - Mixed Use										
1. Multi-Family Housing (per dwelling unit)	4 units	27	2	6%	0	2	2	7%	1	1
2. Variety Store	16,000 sq.ft.	1,019	49	5%	27	22	107	11%	55	52
Gross Total		1,046	50	5%	27	24	109	10%	56	53
Internal Capture (1% of Gross Total)		10	0		0	0	1		1	0
Net Total		1,035	50	5%	27	23	108	10%	55	53
C. Current Proposal - Multi-Family Housing										
1. Multi-Family Housing	32 units	216	13	6%	2	11	16	7%	10	6
D. Current Proposal Change from 2015 Proposal		-819	-37		-25	-13	-92		-45	-47

Notes:

1. Based on Project Site Plan dated 2/2/21.
2. Trip generation rates are referenced from "Trip Generation Manual," Institute of Transportation Engineers (ITE), 11th Edition, 2021.
3. sq. ft. = square feet



Note: TAZ - Traffic Analysis Zone

Keith Higgins
Traffic Engineer

Exhibit 6 Greenfield TAZ Map

VMT CALCULATOR

Version 1.3 Build Date 7_2_21

PROJECT INFORMATION

Project Name

Address

TAZ

Project Context/Setting

301 4th Street Greenfield

Low Density Suburb

TAZH 1706

ANALYSIS YEAR

Analysis Year

2015

LAND USE INFORMATION

VMT Land Use Type

ITE Trip Gen Land Use

Dwelling Unit(s)

Mixed-Use Adjustment

Residential

220 | Multifamily Housing (Low-Rise)

0%

PRESUMPTIONS OF LESS THAN SIGNIFICANT IMPACT

☐ Affordable Housing

☐ Within a 1/2 mile of Major Transit Stop

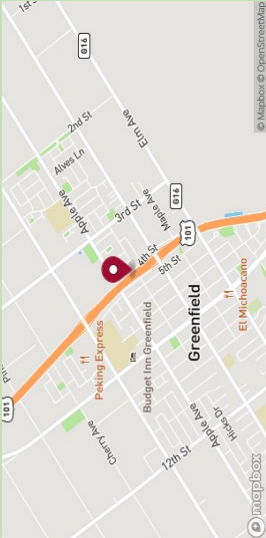
☐ Local Retail (<50,000 Sq Ft)

☐ Less than 110 Trips per Day

Trip Gen less than 110, consider checking the above box

SEARCH LOCATION

RESET



Kimley»Horn

VMT OUTPUT

This tool is only intended for projects of 2,000 trips or less.

PROJECT

REDUCTIONS

PROJ. WITH MITIGATION

VMTCapita

12.0

0.0

12.0

Daily Vehicle Trips

0

0

0

Average (VMTCapita)

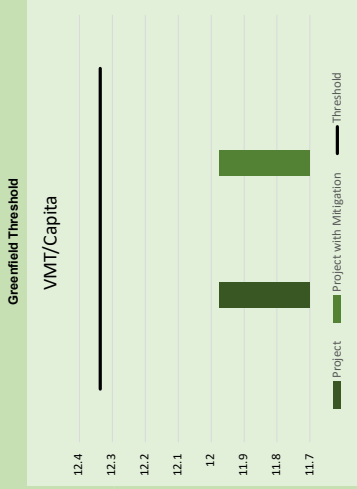
14.5

Threshold (15% below Average)

12.3

Significant Impact?

No



TRANSPORTATION DEMAND MANAGEMENT (TDM) STRATEGIES

PARKING STRATEGIES

TRANSIT STRATEGIES

COMMUNICATIONS & INFORMATION STRATEGIES

COMMUTING STRATEGIES

SHARED MOBILITY STRATEGIES

BICYCLE INFRASTRUCTURE STRATEGIES

NEIGHBORHOOD ENHANCEMENT STRATEGIES

MISCELLANEOUS STRATEGIES

Keith Higgins
Traffic Engineer

Exhibit 7
VMT Calculator

Appendix A
Greenfield Mixed-Use Project
Traffic Study, 2015



June 26, 2015

Mr. Eduardo Couttolenc
1054 University Avenue
Salinas, CA 93901

RE: Greenfield Mixed-Use Project, Greenfield, California

Dear Eduardo:

Hatch Mott MacDonald (HMM) is pleased to provide traffic engineering services to support the development of your mixed-use project located on Fourth Street, between Apple and Palm Avenues and north of Oak Avenue, in Greenfield, California. Note that this scope of work is based upon input from City of Greenfield staff.

Exhibit 1 depicts the location of the project within Greenfield. **Exhibit 2** contains the proposed project site plan.

A. Existing Conditions

The operations of the following three existing study intersections were reviewed in this study:

1. US 101 Southbound Ramps / Oak Avenue;
2. US 101 Northbound Ramps / Oak Avenue; and
3. Fourth Street / Oak Avenue.

Exhibit 3 shows the existing volumes during the AM and PM peak hours. The existing volumes were collected on Wednesday, May 27, 2015, and included cars, trucks, buses, pedestrians and bicyclists. From these counts, the peak one-hour AM and PM periods were identified at each intersection and are shown on **Exhibit 3**. Note that these counts were balanced to account for minor variations in the traffic counts between adjacent intersections. **Appendix A** contains the raw (i.e. unbalanced) intersection counts.

Exhibit 4A summarizes the levels of service at the study intersections under Existing conditions, and **Exhibit 4B** summarizes the necessary improvements at those intersections. **Appendix B** contains the level of service calculations. This analysis utilizes the Highway Capacity Manual 2010 methodologies.

Under Existing conditions, all of the study intersection operate at an overall level of service (LOS) of "A", with side-street operations of LOS B, LOS C, or LOS D. All of the study intersections operate within the City of Greenfield and Caltrans level of service standards (LOS C and the transition between LOS C and D, respectively).



B. Existing Plus Project Conditions

The project is a mixed-use project, i.e. it has both residential and commercial components. These components are:

- Apartments – 4 units
- Townhomes – 20 units
- Commercial/Retail – approximately 16,000 square feet

Exhibit 5 summarizes the project trip generation estimate. This trip generation estimate uses rates from *Trip Generation Manual*, 9th Edition, published by the Institute of Transportation Engineers (ITE) in 2012.

The “Specialty Retail Center” land use was used to estimate the trip generation for the commercial component of the project. The *Trip Generation Manual* does not provide trip rates for the “Specialty Retail Center” land use during the AM peak hour. Therefore, trip rates during the AM are cited from “San Diego Trip Generators,” published by the San Diego Association of Governments (SANDAG) in April 2002.

It is anticipated that some of the future residents of the residential portion of the site would frequent the commercial portion of the site (also called “Internal Capture,” as they are trips that do not leave the project site). The trip generation estimate therefore assumes a 5% reduction to account for these trips.

As shown in **Exhibit 5**, the project would generate an estimated 809 daily trips, with 30 trips during the AM peak hour (14 in, 16 out) and 52 trips during the PM peak hour (26 in, 26 out).

Project trip distribution represents the percentage of project traffic that would travel to and from the project site at a localized level. **Exhibit 6A** graphically depicts the estimated project trip distribution. This distribution was developed based upon the relative locations of compatible land uses and the relative magnitude of the existing traffic volumes within the study area.

Exhibit 6B contains the project trip assignment for the new project trips on the study network, using both the aforementioned trip generation and trip distribution to quantify the number of new project trips added to each direction of travel at each of the study intersections.

The trip assignment within **Exhibit 6B** was added to the Existing volumes to create the Existing Plus Project volumes shown on **Exhibit 7**.

Exhibit 4A summarizes the levels of service of the study intersections under Existing Plus Project conditions, and **Exhibit 4B** summarizes the necessary improvements at those intersections. Levels of service at all study intersections continue to operate within the City of Greenfield and Caltrans standards. The project would not represent an impact upon the area street network. **Appendix B** contains the level of service calculations under Existing Plus Project conditions.



C. Background Conditions

Approved development projects within Greenfield were obtained from the City of Greenfield. **Exhibit 8** identifies these projects and estimates their trip generation (again using trip rates within the *Trip Generation Manual*). These trips were assigned throughout the study intersections and added to the Existing Condition volumes to create Background Condition volumes depicted within **Exhibit 9**.

Exhibit 4A summarizes the levels of service of the study intersections under Background conditions, and **Exhibit 4B** summarizes the necessary improvements at those intersections. Levels of service at all study intersections continue to operate within the City of Greenfield and Caltrans standards. The project would not represent an impact upon the area street network. **Appendix B** contains the level of service calculations under Background conditions.

D. Background Plus Project Conditions

The project trip assignment depicted in **Exhibit 6B** was added to the Background volumes depicted in **Exhibit 9** to create the Background Plus Project volumes shown on **Exhibit 10**.

Exhibit 4A summarizes the levels of service of the study intersections under Background Plus Project conditions, and **Exhibit 4B** summarizes the necessary improvements at those intersections. Levels of service at all study intersections continue to operate within the City of Greenfield and Caltrans standards. The project would not represent an impact upon the area street network. **Appendix B** contains the level of service calculations under Background Plus Project conditions.

E. General Plan Buildout Conditions

General Plan Buildout conditions represent operations at the study intersections in the Year 2035. The traffic forecasts at the study intersections were taken from the *Walnut Avenue Commercial Area Specific Plan Traffic Impact Study*, prepared by Wood Rodgers in March 2013. **Exhibit 11** depicts these volumes at the study intersections.

Exhibit 4A summarizes the levels of service of the study intersections under General Plan Buildout conditions, and **Exhibit 4B** summarizes the necessary improvements at those intersections. **Appendix B** contains the level of service calculations under General Plan Buildout conditions. Levels of service at two of the three study intersections continue to operate within the City of Greenfield and Caltrans standards. However, operations at one intersection – Fourth Street / Oak Avenue – would operate at a deficient LOS F (both overall and side-street operations) during the AM and PM peak hours. The project would represent a significant cumulative impact upon the operations of this intersection.



The City of Greenfield has instituted a traffic impact fee to implement roadway improvements at various intersections and segments through the city. The proposed improvements at the intersection of Fourth Street / Oak Avenue are the following:

- Add an eastbound Oak Avenue left turn lane;
- Add northbound and southbound Fourth Street left turn lanes;
- Add a second westbound Oak Avenue through lane; and
- Convert the intersection to all-way stop control.

Implementation of these improvements would result in operations of LOS B (AM) and LOS C (PM) at the Fourth Street / Oak Avenue intersection, which are operations at or better than the City of Greenfield level of service standard. The project's payment of the city's traffic impact fee would constitute its proportional contribution towards these improvements. Therefore, the project applicant's payment of the city's traffic impact fee would reduce the project's impact to a less-than-significant level.

F. Project Access

The project would have a total of four separate driveways – two on Fourth Street and one each on Apple and Palm Avenue. They provide access to a parking lot directly in front of the building. The operations of these driveways are anticipated to operate within city level of service standards. The driveways located on Apple and Palm Avenues are only approximately 25 feet east of the Apple and Palm Avenue intersections with Fourth Street, and their operations may be influenced by operations at those intersections; however, this is expected to be a very minor issue that will only rarely cause significant delays for traffic exiting these driveways.

The project site is currently vacant, and there are no sidewalks along the project street frontages. The project applicant proposes to construct sidewalks along the site's frontages on Apple Avenue, Fourth Street, and Palm Avenue. This improvement, combined with the existing sidewalks along Fourth Street and Oak Avenue, will allow residents of the project to walk continuously on sidewalks to the downtown business district and to nearby Cesar Chavez Elementary School. It will also encourage more site residents and commercial patrons to walk to and from the site.

Bike racks are located at the northeastern and southeastern corners of the project site. This will facilitate bicyclists traveling to and from the commercial area.

G. Traffic Impact Fees

The project would be responsible for payment of both the City of Greenfield traffic impact fee and the Transportation Agency for Monterey County (TAMC) Regional Impact Fee. Payment of these two fees would constitute the project's proportional share towards traffic impacts within the City of Greenfield and Monterey County, respectively.



H. Conclusion

In summary, the project would have no traffic impacts under Existing Plus Project or Background Plus Project conditions. The project would have a significant cumulative impact under General Plan Buildout conditions at the Fourth / Oak intersection; however, the project's payment of the City of Greenfield traffic impact fee will constitute its proportional share towards the planned improvements at that intersection, and thus will result in the project having a less-than-significant impact upon that intersection.

The project driveways are anticipated to operate within acceptable limits. The project will construct sidewalk along its frontages of Apple Avenue, Fourth Street, and Palm Avenue. The project site will also have bike racks at its northeastern and southeastern corners.

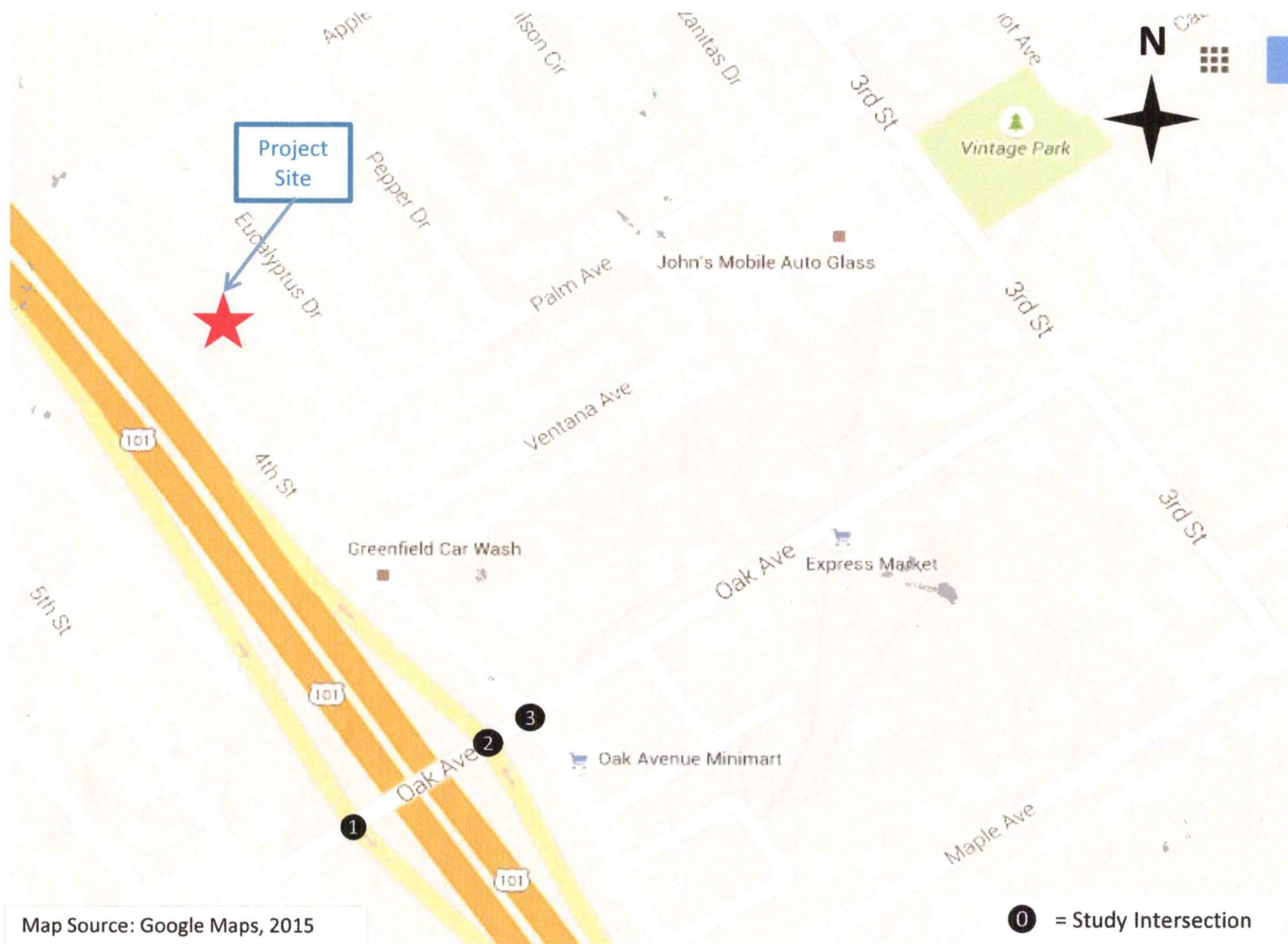
The project would be responsible for payment of the aforementioned City of Greenfield traffic impact fee and also the TAMC Regional Impact Fee. Payment of both fees constitute the project's proportional share towards traffic impacts within the City of Greenfield and Monterey County, respectively.

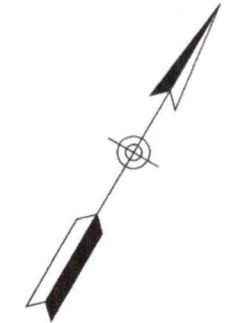
If you have any questions regarding the contents of this letter or need additional information, please do not hesitate to contact Jeff Waller at your convenience. Thank you for the opportunity to assist you with this project.

Respectfully submitted,

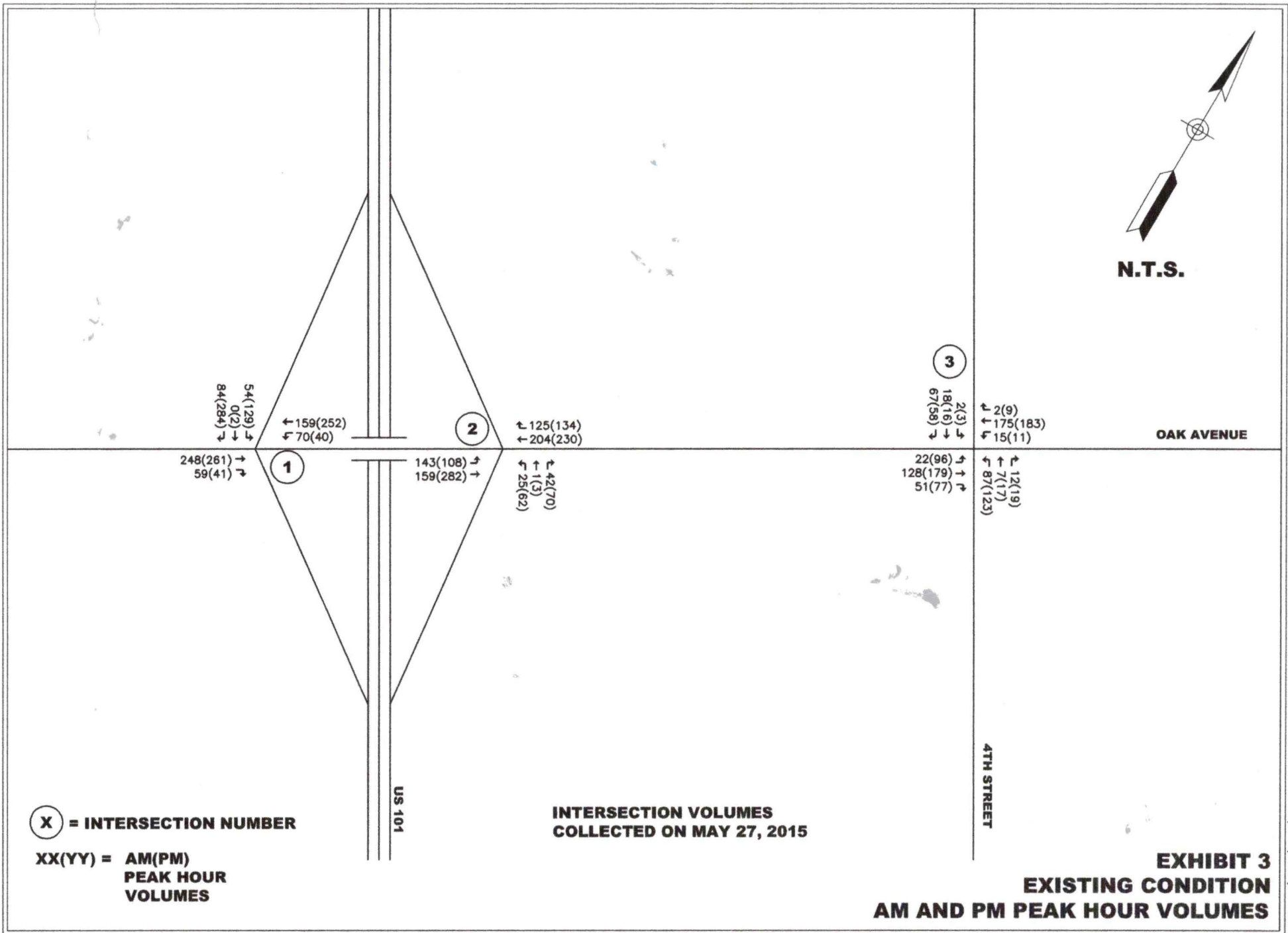
Keith B. Higgins, PE, TE
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kbh; jmw
enclosures





N.T.S.



(X) = INTERSECTION NUMBER

**XX(YY) = AM(PM)
PEAK HOUR
VOLUMES**

**INTERSECTION VOLUMES
COLLECTED ON MAY 27, 2015**

**EXHIBIT 3
EXISTING CONDITION
AM AND PM PEAK HOUR VOLUMES**

N-S Street E-W Street			Existing Lane Configuration	Existing Intersection Control	LOS Standard	Existing Conditions				Existing Plus Project Conditions				Background Conditions				Background Plus Project Conditions				General Plan Buildout Conditions			
						AM Peak Hr.		PM Peak Hr.		AM Peak Hr.		PM Peak Hr.		AM Peak Hr.		PM Peak Hr.		AM Peak Hr.		PM Peak Hr.		AM Peak Hr.		PM Peak Hr.	
						Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
1	Southbound US 101 Ramps	Oak Avenue	NB SB 1-L/T, 1-R* EB 1-T, 1-R* WB 1-L/T	One-Way Stop (NB/SB) Southbound Approach	C/D (E)	3.4 12.5	A B	6.8 15.8	A C	3.4 12.8	A B	7.0 16.5	A C	3.4 12.7	A B	6.8 15.3	A C	3.5 13.0	A B	7.2 16.9	A C	6.6 16.9	A C	16.8 44.1	C E
2	Northbound US 101 Ramps	Oak Avenue	NB 1-L/T, 1-R* SB EB 1-L/T WB 1-T, 1-R*	One-Way Stop (NB/SB) Northbound Approach	C/D (E)	2.9 12.7	A B	3.2 14.9	A B	2.9 12.9	A B	3.2 15.3	A C	3.0 13.1	A B	3.4 15.3	A C	3.0 13.2	A B	3.3 15.7	A C	4.7 20.6	A C	7.9 43.9	A E
3	Fourth Street	Oak Avenue	NB 1-L/T, 1-R* SB 1-L/T/R EB 1-L/T/R WB 1-L/T/R	Two-Way Stop (NB/SB) Northbound Approach Southbound Approach With Improvement	C (E) (E) (E)	5.5 18.4 11.4	A C B	8.0 28.6 12.1	A D B	6.0 20.0 11.7	9.6 36.0 12.6	A E B	5.5 18.6 11.5	A C B	8.0 29.2 12.2	A D B	6.0 20.3 11.8	A C B	9.8 36.9 12.7	A E B	13.2 57.6 15.3	B F C	129.5 568.1 27.1	F F D	
																					15.8	C	12.3	B	

Notes:

1. L, T, R = Left, Through, Right
2. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound
3. * = Lane configuration reflects actual operations at intersection.
4. Analysis performed using 2010 Highway Capacity Manual methodologies.
5. Level of service standard for Caltrans is the transition from LOS C to D. The level of service standard for the City of Greenfield is LOS C.
6. Worst approach level of service standard is generally LOS E. Level of service "F" is the level of service at which improvements would be required.
7. Items in **bold** indicate a significant impact.

EXHIBIT 4A Intersection Levels of Service

N-S Street	E-W Street	Existing Lane Configuration	Existing Intersection Control	Existing Plus Project Conditions	Background Plus Project Conditions	General Plan Buildout Conditions
1. Southbound US 101 Ramps	Oak Avenue	NB SB 1-L/T, 1-R* EB 1-T, 1-R* WB 1-L/T	One-Way Stop (NB/SB)	None Required	None Required	None Required
2. Northbound US 101 Ramps	Oak Avenue	NB 1-L/T, 1-R* SB EB 1-L/T WB 1-T, 1-R*	One-Way Stop (NB/SB)	None Required	None Required	None Required
3. Fourth Street	Oak Avenue	NB 1-L/T, 1-R* SB 1-L/T/R EB 1-L/T/R WB 1-L/T/R	Two-Way Stop (NB/SB)	None Required	None Required	a. Add EB Oak L b. Add NB Fourth L and a SB Fourth L c. Add a 2nd WB Oak T d. Convert Intersection to All- Way Stop Control

Notes:

1. L, T, R = Left, Through, Right
2. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound
3. * = Lane configuration reflects actual operations at intersection.

Project Trip Generation										
TRIP GENERATION RATES	ITE LAND USE CODE	DAILY TRIP RATE	AM PEAK HOUR				PM PEAK HOUR			
			PEAK HOUR RATE	% OF ADT	% IN	% OUT	PEAK HOUR RATE	% OF ADT	% IN	% OUT
Apartment (per dwelling unit)	220	6.65	0.51	8%	20%	80%	0.62	9%	65%	35%
Residential Condominium / Townhouse (per dwelling unit)	230	5.81	0.44	8%	17%	83%	0.52	9%	67%	33%
Specialty Retail Center (per 1,000 sq. ft.) ²	826	44.32	1.33	3%	60%	40%	2.71	6%	44%	56%
GENERATED TRIPS	PROJECT SIZE	DAILY TRIPS	AM PEAK HOUR				PM PEAK HOUR			
			PEAK HOUR TRIPS	% OF ADT	TRIPS IN	TRIPS OUT	PEAK HOUR TRIPS	% OF ADT	TRIPS IN	TRIPS OUT
<u>Proposed Uses</u>										
Apartments	4 units	27	2	7%	0	2	2	7%	1	1
Townhomes	20 units	116	9	8%	2	7	10	9%	7	3
Retail	16,000 sq. ft.	709	21	3%	13	8	43	6%	19	24
Subtotal (Proposed Uses):		852	32		15	17	55		27	28
Internal Capture: ³		-43	-2		-1	-1	-3		-1	-2
Total Net Project Trip Generation:		809	30		14	16	52		26	28

Notes:

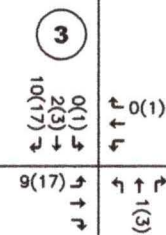
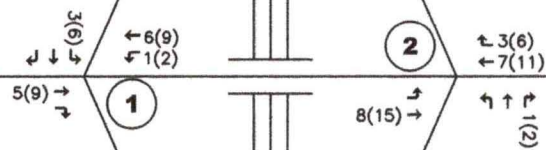
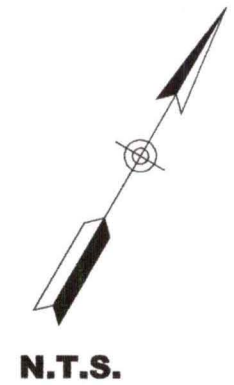
1. Trip generation rates from Institute of Transportation Engineers, "Trip Generation Manual," 9th Edition, 2012, unless otherwise noted.
2. "Trip Generation Manual" does not provide trip rates for Specialty Retail Center during AM. Cited trip rates are from San Diego Association of Governments, "San Diego Traffic Generators," April 2002.
3. Internal Capture rate of 5% represents trip reduction due to interactions between the on-site uses (e.g. a resident of a townhouse that also frequents the retail space).

EXHIBIT 5
Project
Trip Generation



Map Source: Google Maps, 2015

0 = Study Intersection



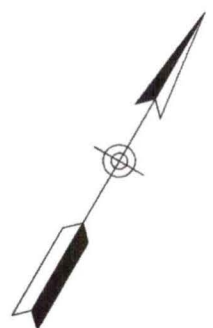
(X) = INTERSECTION NUMBER

**XX(YY) = AM(PM)
PEAK HOUR
VOLUMES**

EXHIBIT 6B

PROJECT TRIP ASSIGNMENT

AM AND PM PEAK HOUR VOLUMES



N.T.S.

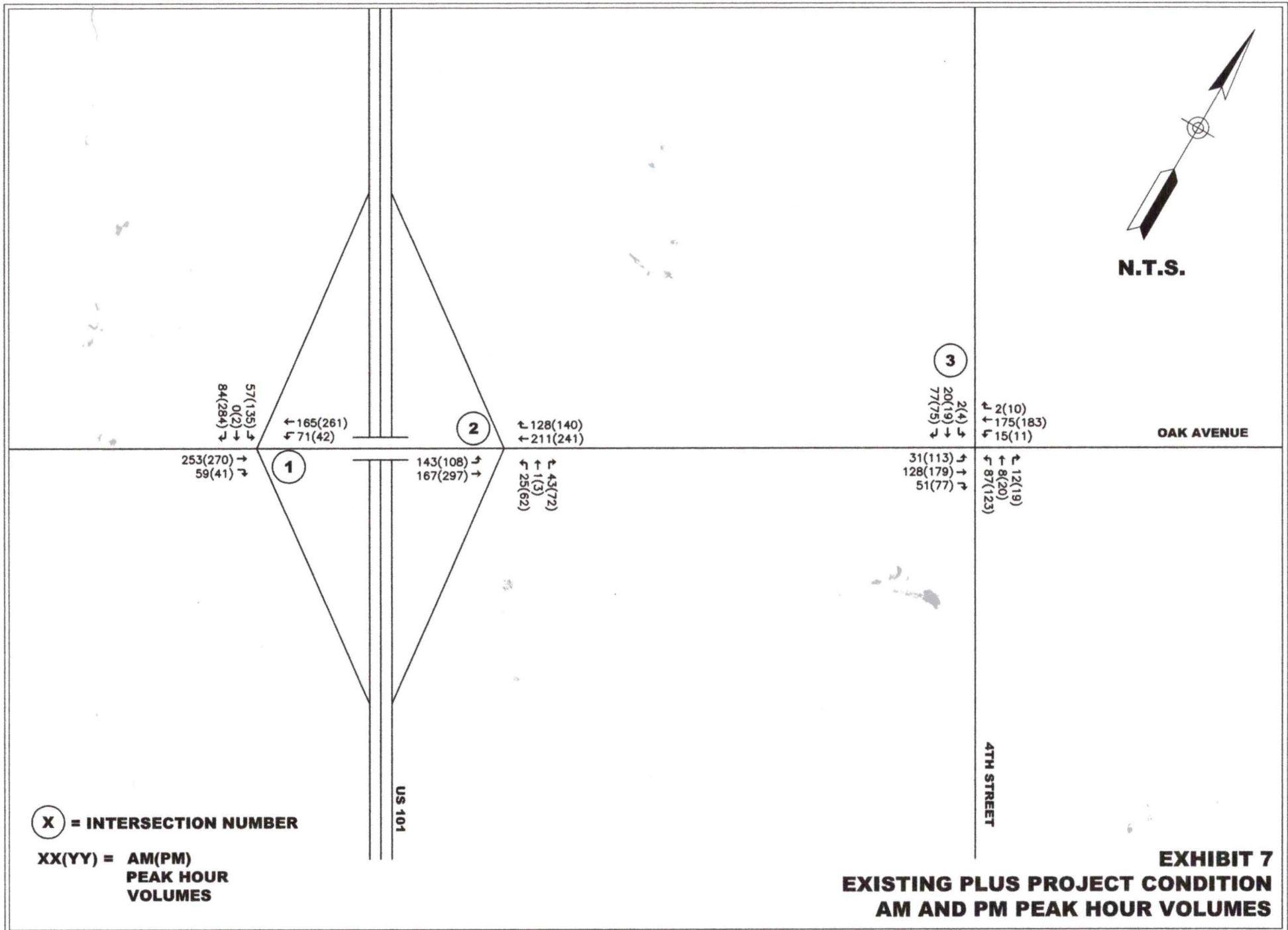


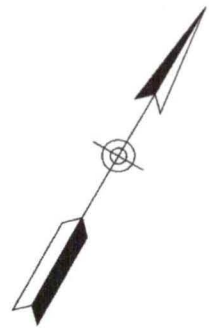
EXHIBIT 7
EXISTING PLUS PROJECT CONDITION
AM AND PM PEAK HOUR VOLUMES

Approved Projects - Trip Generation										
TRIP GENERATION RATES	ITE LAND USE CODE	DAILY TRIP RATE	AM PEAK HOUR				PM PEAK HOUR			
			PEAK HOUR RATE	% OF ADT	% IN	% OUT	PEAK HOUR RATE	% OF ADT	% IN	% OUT
	Single-Family Detached Housing (per dwelling unit)	210	9.52	0.75	8%	25%	75%	1.00	11%	63%
Apartment (per dwelling unit)	220	6.65	0.51	8%	20%	80%	0.62	9%	65%	35%
GENERATED TRIPS	PROJECT SIZE	DAILY TRIPS	AM PEAK HOUR				PM PEAK HOUR			
			PEAK HOUR TRIPS	% OF ADT	TRIPS IN	TRIPS OUT	PEAK HOUR TRIPS	% OF ADT	TRIPS IN	TRIPS OUT
	<u>Approved Projects</u>									
Sandoval Subdivision (Single-Family)	7 units	67	5	7%	1	4	7	10%	4	3
Magnolia Senior Apartments ³	32 units	213	16	8%	3	13	20	9%	13	7
Cambria Park Subdivision (Single-Family)	19 units	181	14	8%	4	10	19	10%	12	7
Terracina Oaks II (Apartments)	48 units	319	24	8%	5	19	30	9%	20	10
Total:		780	59		13	46	76		49	27

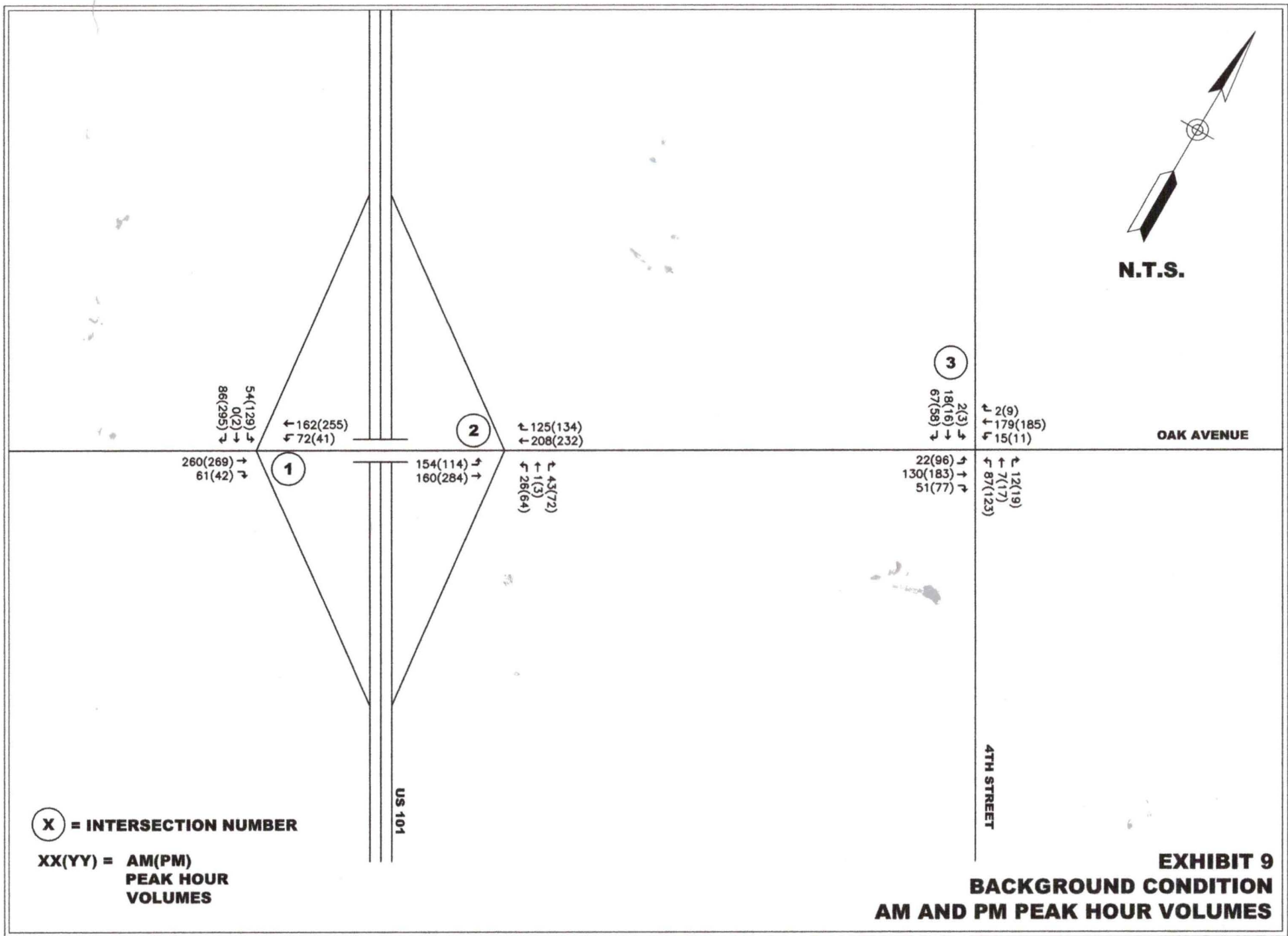
Notes:

1. Trip generation rates from Institute of Transportation Engineers, "Trip Generation Manual," 9th Edition, 2012, unless otherwise noted.
2. Approved project list provide by City of Greenfield.
3. Although these are senior apartments (i.e. occupancy restricted to seniors only), trip generation reflects standard apartments, to be conservative.

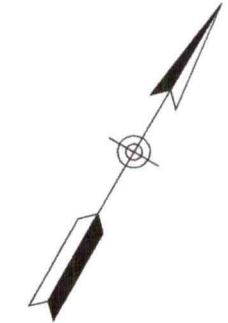
EXHIBIT 8
Approved Projects
Trip Generation



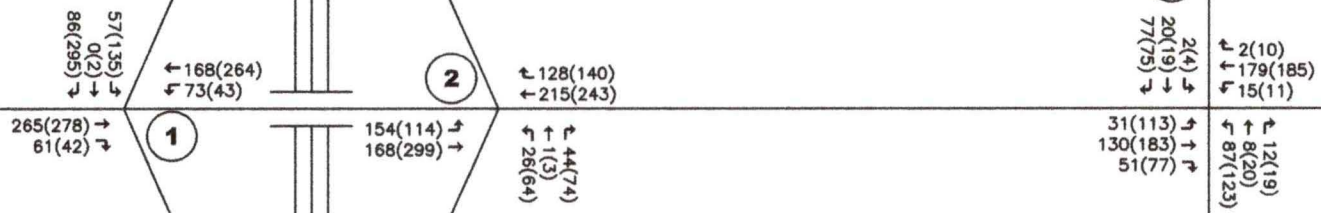
N.T.S.



**EXHIBIT 9
BACKGROUND CONDITION
AM AND PM PEAK HOUR VOLUMES**



N.T.S.



OAK AVENUE

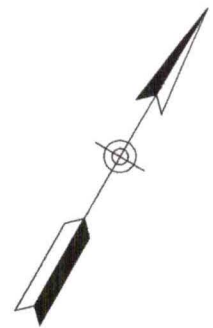
4TH STREET

US 101

(X) = INTERSECTION NUMBER

XX(YY) = AM(PM)
PEAK HOUR
VOLUMES

EXHIBIT 10
BACKGROUND PLUS PROJECT CONDITION
AM AND PM PEAK HOUR VOLUMES



N.T.S.

OAK AVENUE

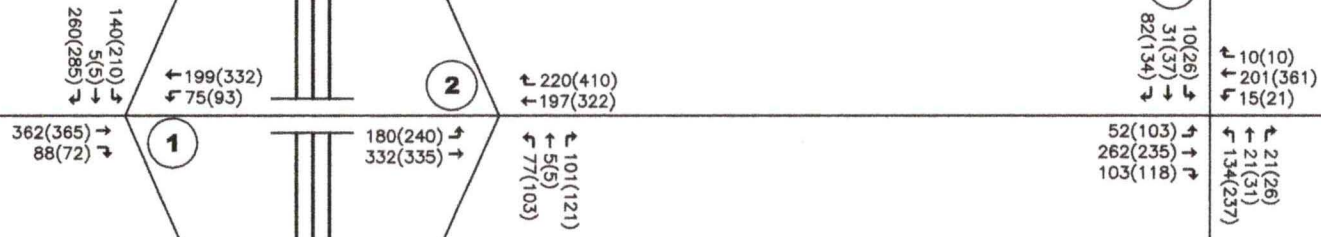
4TH STREET

US 101

EXHIBIT 11
GENERAL PLAN BUILDOUT CONDITION
AM AND PM PEAK HOUR VOLUMES

(X) = INTERSECTION NUMBER

XX(YY) = AM(PM)
PEAK HOUR
VOLUMES



APPENDIX A

INTERSECTION
TRAFFIC
COUNTS

Traffic Data Service

Campbell, CA

(408) 377-2988

idsbay@cs.com

File Name : 7AM FINAL

Site Code : 00000007

Start Date : 5/27/2015

Page No : 1

Groups Printed- Lights - Buses - Trucks

	US-101 SB OFF-RAMP Southbound					OAK AVE Westbound					US-101 SB ON-RAMP Northbound					OAK AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	7	2	4	2	15	0	17	6	0	23	0	0	0	0	0	5	52	0	0	57	95
07:15 AM	13	0	7	6	26	0	24	7	0	31	0	0	0	4	4	8	67	0	0	75	136
07:30 AM	12	0	14	8	34	0	35	19	0	54	0	0	0	5	5	22	71	0	0	93	186
07:45 AM	24	0	7	5	36	0	61	33	0	94	0	0	0	2	2	23	57	0	0	80	212
Total	56	2	32	21	111	0	137	65	0	202	0	0	0	11	11	58	247	0	0	305	629
08:00 AM	35	0	25	1	61	0	39	11	0	50	0	0	0	0	0	6	50	0	0	56	167
08:15 AM	18	0	8	1	27	0	20	6	0	26	0	0	0	1	1	5	41	0	0	46	100
08:30 AM	12	1	7	0	20	0	11	7	0	18	0	0	0	0	0	4	24	0	0	28	66
08:45 AM	17	0	11	5	33	0	9	9	0	18	0	0	0	0	0	4	26	0	0	30	81
Total	82	1	51	7	141	0	79	33	0	112	0	0	0	1	1	19	141	0	0	160	414
Grand Total	138	3	83	28	252	0	216	98	0	314	0	0	0	12	12	77	388	0	0	465	1043
Apprch %	54.8	1.2	32.9	11.1		0	68.8	31.2	0		0	0	0	100		16.6	83.4	0	0		
Total %	13.2	0.3	8	2.7	24.2	0	20.7	9.4	0	30.1	0	0	0	1.2	1.2	7.4	37.2	0	0	44.6	
Lights	130	3	70	28	231	0	207	89	0	296	0	0	0	12	12	77	383	0	0	460	999
% Lights	94.2	100	84.3	100	91.7	0	95.8	90.8	0	94.3	0	0	0	100	100	100	98.7	0	0	98.9	95.8
Buses	2	0	0	0	2	0	6	1	0	7	0	0	0	0	0	0	3	0	0	3	12
% Buses	1.4	0	0	0	0.8	0	2.8	1	0	2.2	0	0	0	0	0	0	0.8	0	0	0.6	1.2
Trucks	6	0	13	0	19	0	3	8	0	11	0	0	0	0	0	0	2	0	0	2	32
% Trucks	4.3	0	15.7	0	7.5	0	1.4	8.2	0	3.5	0	0	0	0	0	0	0.5	0	0	0.4	3.1

	US-101 SB OFF-RAMP Southbound				OAK AVE Westbound				US-101 SB ON-RAMP Northbound				OAK AVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	13	0	7	20	0	24	7	31	0	0	0	0	8	67	0	75	126
07:30 AM	12	0	14	26	0	35	19	54	0	0	0	0	22	71	0	93	173
07:45 AM	24	0	7	31	0	61	33	94	0	0	0	0	23	57	0	80	205
08:00 AM	35	0	25	60	0	39	11	50	0	0	0	0	6	50	0	56	166
Total Volume	84	0	53	137	0	159	70	229	0	0	0	0	59	245	0	304	670
% App. Total	61.3	0	38.7		0	69.4	30.6		0	0	0		19.4	80.6	0		
PHF	.600	.000	.530	.571	.000	.652	.530	.609	.000	.000	.000	.000	.641	.863	.000	.817	.817

Traffic Data Service

Campbell, CA

(408) 377-2988

tdsbay@cs.com

File Name : 7PM FINAL

Site Code : 00000007

Start Date : 5/27/2015

Page No : 1

Groups Printed- Lights - Buses - Trucks

	US-101 SB OFF-RAMP Southbound					OAK AVE Westbound					US-101 SB ON-RAMP Northbound					OAK AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	68	1	27	8	104	0	49	21	0	70	0	0	0	1	1	11	51	0	0	62	237
04:15 PM	55	0	22	8	85	0	46	10	0	56	0	0	0	1	1	8	54	0	0	62	204
04:30 PM	57	0	33	2	92	0	55	8	0	63	0	0	0	3	3	8	63	0	0	71	229
04:45 PM	86	2	21	0	109	0	73	14	0	87	0	0	0	2	2	11	87	0	0	98	296
Total	266	3	103	18	390	0	223	53	0	276	0	0	0	7	7	38	255	0	0	293	966
05:00 PM	71	0	47	6	124	0	66	9	0	75	0	0	0	1	1	13	59	0	0	72	272
05:15 PM	70	0	28	2	100	0	58	9	0	67	0	0	0	0	0	9	52	0	0	61	228
05:30 PM	51	0	28	4	83	0	59	9	0	68	0	0	0	2	2	6	68	0	0	74	227
05:45 PM	64	0	28	6	98	0	63	8	0	71	0	0	0	0	0	7	49	0	0	56	225
Total	256	0	131	18	405	0	246	35	0	281	0	0	0	3	3	35	228	0	0	263	952
Grand Total	522	3	234	36	795	0	469	88	0	557	0	0	0	10	10	73	483	0	0	556	1918
Apprch %	65.7	0.4	29.4	4.5		0	84.2	15.8	0		0	0	0	100		13.1	86.9	0	0		
Total %	27.2	0.2	12.2	1.9	41.4	0	24.5	4.6	0	29	0	0	0	0.5	0.5	3.8	25.2	0	0	29	
Lights	514	3	214	36	767	0	462	87	0	549	0	0	0	10	10	71	472	0	0	543	1869
% Lights	98.5	100	91.5	100	96.5	0	98.5	98.9	0	98.6	0	0	0	100	100	97.3	97.7	0	0	97.7	97.4
Buses	2	0	0	0	2	0	3	0	0	3	0	0	0	0	0	0	5	0	0	5	10
% Buses	0.4	0	0	0	0.3	0	0.6	0	0	0.5	0	0	0	0	0	0	1	0	0	0.9	0.5
Trucks	6	0	20	0	26	0	4	1	0	5	0	0	0	0	0	2	6	0	0	8	39
% Trucks	1.1	0	8.5	0	3.3	0	0.9	1.1	0	0.9	0	0	0	0	0	2.7	1.2	0	0	1.4	2

	US-101 SB OFF-RAMP Southbound				OAK AVE Westbound				US-101 SB ON-RAMP Northbound				OAK AVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	57	0	33	90	0	55	8	63	0	0	0	0	8	63	0	71	224
04:45 PM	86	2	21	109	0	73	14	87	0	0	0	0	11	87	0	98	294
05:00 PM	71	0	47	118	0	66	9	75	0	0	0	0	13	59	0	72	265
05:15 PM	70	0	28	98	0	58	9	67	0	0	0	0	9	52	0	61	226
Total Volume	284	2	129	415	0	252	40	292	0	0	0	0	41	261	0	302	1009
% App. Total	68.4	0.5	31.1		0	86.3	13.7		0	0	0		13.6	86.4	0		
PHF	.826	.250	.686	.879	.000	.863	.714	.839	.000	.000	.000	.000	.788	.750	.000	.770	.858

Traffic Data Service

Campbell, CA

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File Name : 8AM FINAL

Site Code : 00000008

Start Date : 5/27/2015

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Groups Printed- Lights - Buses - Trucks

	US-101 NB ON-RAMP Southbound					OAK AVE Westbound					US-101 NB OFF-RAMP Northbound					OAK AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	1	1	38	14	0	0	52	8	0	8	0	16	0	17	39	0	56	125
07:15 AM	0	0	0	6	6	36	22	0	0	58	1	0	7	4	12	0	24	52	0	76	152
07:30 AM	0	0	0	4	4	50	47	0	0	97	8	0	5	2	15	0	43	41	0	84	200
07:45 AM	0	0	0	9	9	21	85	0	0	106	22	0	8	0	30	0	39	23	0	62	207
Total	0	0	0	20	20	145	168	0	0	313	39	0	28	6	73	0	123	155	0	278	684
08:00 AM	0	0	0	1	1	18	45	0	0	63	9	1	4	0	14	0	47	27	0	74	152
08:15 AM	0	0	0	1	1	17	19	0	0	36	3	0	2	1	6	0	26	19	0	45	88
08:30 AM	0	0	0	0	0	13	18	0	0	31	2	0	5	0	7	0	17	19	0	36	74
08:45 AM	0	0	0	5	5	15	14	0	0	29	5	0	4	0	9	0	17	21	0	38	81
Total	0	0	0	7	7	63	96	0	0	159	19	1	15	1	36	0	107	86	0	193	395
Grand Total	0	0	0	27	27	208	264	0	0	472	58	1	43	7	109	0	230	241	0	471	1079
Apprch %	0	0	0	100		44.1	55.9	0	0		53.2	0.9	39.4	6.4		0	48.8	51.2	0		
Total %	0	0	0	2.5	2.5	19.3	24.5	0	0	43.7	5.4	0.1	4	0.6	10.1	0	21.3	22.3	0	43.7	
Lights	0	0	0	27	27	187	250	0	0	437	51	1	41	7	100	0	215	236	0	451	1015
% Lights	0	0	0	100	100	89.9	94.7	0	0	92.6	87.9	100	95.3	100	91.7	0	93.5	97.9	0	95.8	94.1
Buses	0	0	0	0	0	3	6	0	0	9	1	0	1	0	2	0	3	1	0	4	15
% Buses	0	0	0	0	0	1.4	2.3	0	0	1.9	1.7	0	2.3	0	1.8	0	1.3	0.4	0	0.8	1.4
Trucks	0	0	0	0	0	18	8	0	0	26	6	0	1	0	7	0	12	4	0	16	49
% Trucks	0	0	0	0	0	8.7	3	0	0	5.5	10.3	0	2.3	0	6.4	0	5.2	1.7	0	3.4	4.5

	US-101 NB ON-RAMP Southbound				OAK AVE Westbound				US-101 NB OFF-RAMP Northbound				OAK AVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	36	22	0	58	1	0	7	8	0	24	52	76	142
07:30 AM	0	0	0	0	50	47	0	97	8	0	5	13	0	43	41	84	194
07:45 AM	0	0	0	0	21	85	0	106	22	0	8	30	0	39	23	62	198
08:00 AM	0	0	0	0	18	45	0	63	9	1	4	14	0	47	27	74	151
Total Volume	0	0	0	0	125	199	0	324	40	1	24	65	0	153	143	296	685
% App. Total	0	0	0	0	38.6	61.4	0		61.5	1.5	36.9		0	51.7	48.3		
PHF	.000	.000	.000	.000	.625	.585	.000	.764	.455	.250	.750	.542	.000	.814	.688	.881	.865

Traffic Data Service

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Groups Printed- Lights - Buses - Trucks

	US-101 NB ON-RAMP Southbound					OAK AVE Westbound					US-101 NB OFF-RAMP Northbound					OAK AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	5	5	20	58	0	0	78	13	0	9	1	23	0	65	15	0	80	186
04:15 PM	0	0	0	2	2	20	49	0	2	71	8	0	5	0	13	0	56	18	0	74	160
04:30 PM	0	0	0	0	0	25	48	0	0	73	19	0	13	0	32	0	70	24	0	94	199
04:45 PM	0	0	0	1	1	36	60	0	0	96	12	1	22	5	40	0	71	37	0	108	245
Total	0	0	0	8	8	101	215	0	2	318	52	1	49	6	108	0	262	94	0	356	790
05:00 PM	0	0	0	4	4	34	53	0	0	87	24	1	15	1	41	0	79	22	0	101	233
05:15 PM	0	0	0	0	0	32	55	0	0	87	24	1	12	2	39	0	60	21	0	81	207
05:30 PM	0	0	0	2	2	32	56	0	0	88	10	0	11	0	21	0	72	28	1	101	212
05:45 PM	0	0	0	6	6	39	64	0	0	103	7	0	7	0	14	0	58	18	1	77	200
Total	0	0	0	12	12	137	228	0	0	365	65	2	45	3	115	0	269	89	2	360	852
Grand Total	0	0	0	20	20	238	443	0	2	683	117	3	94	9	223	0	531	183	2	716	1642
Apprch %	0	0	0	100		34.8	64.9	0	0.3		52.5	1.3	42.2	4		0	74.2	25.6	0.3		
Total %	0	0	0	1.2	1.2	14.5	27	0	0.1	41.6	7.1	0.2	5.7	0.5	13.6	0	32.3	11.1	0.1	43.6	
Lights	0	0	0	20	20	218	435	0	2	655	114	2	93	9	218	0	508	174	2	684	1577
% Lights	0	0	0	100	100	91.6	98.2	0	100	95.9	97.4	66.7	98.9	100	97.8	0	95.7	95.1	100	95.5	96
Buses	0	0	0	0	0	1	2	0	0	3	0	0	1	0	1	0	0	5	0	5	9
% Buses	0	0	0	0	0	0.4	0.5	0	0	0.4	0	0	1.1	0	0.4	0	0	2.7	0	0.7	0.5
Trucks	0	0	0	0	0	19	6	0	0	25	3	1	0	0	4	0	23	4	0	27	56
% Trucks	0	0	0	0	0	8	1.4	0	0	3.7	2.6	33.3	0	0	1.8	0	4.3	2.2	0	3.8	3.4

	US-101 NB ON-RAMP Southbound					OAK AVE Westbound					US-101 NB OFF-RAMP Northbound					OAK AVE Eastbound					
Start Time	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	0		36	60	0	96		12	1	22	35		0	71	37	108		239
05:00 PM	0	0	0	0		34	53	0	87		24	1	15	40		0	79	22	101		228
05:15 PM	0	0	0	0		32	55	0	87		24	1	12	37		0	60	21	81		205
05:30 PM	0	0	0	0		32	56	0	88		10	0	11	21		0	72	28	100		209
Total Volume	0	0	0	0		134	224	0	358		70	3	60	133		0	282	108	390		881
% App. Total	0	0	0			37.4	62.6	0			52.6	2.3	45.1			0	72.3	27.7			
PHF	.000	.000	.000	.000		.931	.933	.000	.932		.729	.750	.682	.831		.000	.892	.730	.903		.922

Traffic Data Service

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Groups Printed- Lights - Buses - Trucks

	4TH ST Southbound					OAK AVE Westbound					4TH ST Northbound					OAK AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	15	3	0	2	20	1	15	0	2	18	0	1	27	2	30	10	19	2	0	31	99
07:15 AM	12	0	2	3	17	1	24	1	0	26	1	0	16	2	19	6	14	2	0	22	84
07:30 AM	17	7	0	3	27	0	41	6	2	49	2	1	38	2	43	10	34	6	0	50	169
07:45 AM	21	8	0	7	36	0	63	6	0	69	2	1	13	0	16	11	45	8	1	65	186
Total	65	18	2	15	100	2	143	13	4	162	5	3	94	6	108	37	112	18	1	168	538
08:00 AM	15	3	0	3	21	1	40	2	0	43	7	5	17	0	29	24	35	6	0	65	158
08:15 AM	3	1	0	0	4	0	14	0	0	14	1	2	9	1	13	8	13	3	0	24	55
08:30 AM	8	0	0	0	8	0	18	2	0	20	1	1	7	0	9	6	9	4	0	19	56
08:45 AM	5	2	0	4	11	0	10	1	2	13	1	0	8	0	9	7	11	2	0	20	53
Total	31	6	0	7	44	1	82	5	2	90	10	8	41	1	60	45	68	15	0	128	322
Grand Total	96	24	2	22	144	3	225	18	6	252	15	11	135	7	168	82	180	33	1	296	860
Apprch %	66.7	16.7	1.4	15.3		1.2	89.3	7.1	2.4		8.9	6.5	80.4	4.2		27.7	60.8	11.1	0.3		
Total %	11.2	2.8	0.2	2.6	16.7	0.3	26.2	2.1	0.7	29.3	1.7	1.3	15.7	0.8	19.5	9.5	20.9	3.8	0.1	34.4	
Lights	92	24	2	22	140	3	216	18	6	243	15	11	115	7	148	70	174	33	1	278	809
% Lights	95.8	100	100	100	97.2	100	96	100	100	96.4	100	100	85.2	100	88.1	85.4	96.7	100	100	93.9	94.1
Buses	3	0	0	0	3	0	6	0	0	6	0	0	0	0	0	0	4	0	0	4	13
% Buses	3.1	0	0	0	2.1	0	2.7	0	0	2.4	0	0	0	0	0	0	2.2	0	0	1.4	1.5
Trucks	1	0	0	0	1	0	3	0	0	3	0	0	20	0	20	12	2	0	0	14	38
% Trucks	1	0	0	0	0.7	0	1.3	0	0	1.2	0	0	14.8	0	11.9	14.6	1.1	0	0	4.7	4.4

	4TH ST Southbound				OAK AVE Westbound				4TH ST Northbound				OAK AVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	12	0	2	14	1	24	1	26	1	0	16	17	6	14	2	22	79
07:30 AM	17	7	0	24	0	41	6	47	2	1	38	41	10	34	6	50	162
07:45 AM	21	8	0	29	0	63	6	69	2	1	13	16	11	45	8	64	178
08:00 AM	15	3	0	18	1	40	2	43	7	5	17	29	24	35	6	65	155
Total Volume	65	18	2	85	2	168	15	185	12	7	84	103	51	128	22	201	574
% App. Total	76.5	21.2	2.4		1.1	90.8	8.1		11.7	6.8	81.6		25.4	63.7	10.9		
PHF	.774	.563	.250	.733	.500	.667	.625	.670	.429	.350	.553	.628	.531	.711	.688	.773	.806

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Groups Printed- Lights - Buses - Trucks

	4TH ST Southbound					OAK AVE Westbound					4TH ST Northbound					OAK AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	17	2	0	1	20	1	35	0	0	36	1	3	21	0	25	19	42	20	0	81	162
04:15 PM	11	1	1	4	17	0	33	0	0	33	3	2	25	0	30	16	32	12	2	62	142
04:30 PM	16	1	0	0	17	3	36	2	0	41	3	3	21	0	27	24	46	19	0	89	174
04:45 PM	15	3	1	4	23	3	45	3	0	51	3	6	32	3	44	14	49	24	0	87	205
Total	59	7	2	9	77	7	149	5	0	161	10	14	99	3	126	73	169	75	2	319	683
05:00 PM	13	7	0	2	22	3	45	4	1	53	8	1	25	1	35	24	48	33	0	105	215
05:15 PM	11	4	2	0	17	0	45	2	1	48	6	6	31	2	45	19	44	18	0	81	191
05:30 PM	16	2	0	2	20	3	39	2	0	44	2	4	29	0	35	20	39	21	0	80	179
05:45 PM	16	5	1	5	27	0	55	1	0	56	4	3	28	0	35	17	44	7	0	68	186
Total	56	18	3	9	86	6	184	9	2	201	20	14	113	3	150	80	175	79	0	334	771
Grand Total	115	25	5	18	163	13	333	14	2	362	30	28	212	6	276	153	344	154	2	653	1454
Approch %	70.6	15.3	3.1	11		3.6	92	3.9	0.6		10.9	10.1	76.8	2.2		23.4	52.7	23.6	0.3		
Total %	7.9	1.7	0.3	1.2	11.2	0.9	22.9	1	0.1	24.9	2.1	1.9	14.6	0.4	19	10.5	23.7	10.6	0.1	44.9	
Lights	114	25	5	18	162	13	323	14	2	352	30	26	199	6	261	139	338	154	2	633	1408
% Lights	99.1	100	100	100	99.4	100	97	100	100	97.2	100	92.9	93.9	100	94.6	90.8	98.3	100	100	96.9	96.8
Buses	0	0	0	0	0	0	3	0	0	3	0	1	0	0	1	0	0	0	0	0	4
% Buses	0	0	0	0	0	0	0.9	0	0	0.8	0	3.6	0	0	0.4	0	0	0	0	0	0.3
Trucks	1	0	0	0	1	0	7	0	0	7	0	1	13	0	14	14	6	0	0	20	42
% Trucks	0.9	0	0	0	0.6	0	2.1	0	0	1.9	0	3.6	6.1	0	5.1	9.2	1.7	0	0	3.1	2.9

	4TH ST Southbound				OAK AVE Westbound				4TH ST Northbound				OAK AVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	15	3	1	19	3	45	3	51	3	6	32	41	14	49	24	87	198
05:00 PM	13	7	0	20	3	45	4	52	8	1	25	34	24	48	33	105	211
05:15 PM	11	4	2	17	0	45	2	47	6	6	31	43	19	44	18	81	188
05:30 PM	16	2	0	18	3	39	2	44	2	4	29	35	20	39	21	80	177
Total Volume	55	16	3	74	9	174	11	194	19	17	117	153	77	180	96	353	774
% App. Total	74.3	21.6	4.1		4.6	89.7	5.7		12.4	11.1	76.5		21.8	51	27.2		
PHF	.859	.571	.375	.925	.750	.967	.688	.933	.594	.708	.914	.890	.802	.918	.727	.840	.917

APPENDIX B

LEVEL OF SERVICE CALCULATIONS

Intersection

Int Delay, s/veh 3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	248	59	70	159	0	0	0	0	54	0	84
Conflicting Peds, #/hr	0	0	11	11	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	-	-	50	-	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	8	8	8
Mvmt Flow	0	302	72	85	194	0	0	0	0	66	0	102

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	194	0	0	302	0	0	667	667	205
Stage 1	-	-	-	-	-	-	365	365	-
Stage 2	-	-	-	-	-	-	302	302	-
Critical Hdwy	4.12	-	-	4.13	-	-	6.48	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	5.48	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.48	5.58	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.572	4.072	3.372
Pot Cap-1 Maneuver	1379	-	-	1253	-	-	415	372	821
Stage 1	-	-	-	-	-	-	689	613	-
Stage 2	-	-	-	-	-	-	737	654	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1366	-	-	1242	-	-	383	0	813
Mov Cap-2 Maneuver	-	-	-	-	-	-	383	0	-
Stage 1	-	-	-	-	-	-	636	0	-
Stage 2	-	-	-	-	-	-	737	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.5	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1366	-	-	1242	-	-	383	813
HCM Lane V/C Ratio	-	-	-	0.069	-	-	0.172	0.126
HCM Control Delay (s)	0	-	-	8.1	0	-	16.3	10.1
HCM Lane LOS	A	-	-	A	A	-	C	B
HCM 95th %tile Q(veh)	0	-	-	0.2	-	-	0.6	0.4

Intersection

Int Delay, s/veh 2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	143	159	0	0	204	125	25	1	42	0	0	0
Conflicting Peds, #/hr	20	0	0	0	0	20	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	-	-	-	-	-	0	-	-	90	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	4	4	4	3	3	3	6	6	6	2	2	2
Mvmt Flow	164	183	0	0	234	144	29	1	48	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	234	0	0	183	0	0	745	745	203
Stage 1	-	-	-	-	-	-	511	511	-
Stage 2	-	-	-	-	-	-	234	234	-
Critical Hdwy	4.14	-	-	4.13	-	-	6.46	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	5.46	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.46	5.56	-
Follow-up Hdwy	2.236	-	-	2.227	-	-	3.554	4.054	3.354
Pot Cap-1 Maneuver	1322	-	-	1386	-	-	376	338	828
Stage 1	-	-	-	-	-	-	594	530	-
Stage 2	-	-	-	-	-	-	796	704	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1300	-	-	1363	-	-	318	0	814
Mov Cap-2 Maneuver	-	-	-	-	-	-	318	0	-
Stage 1	-	-	-	-	-	-	511	0	-
Stage 2	-	-	-	-	-	-	783	0	-

Approach	EB	WB	NB
HCM Control Delay, s	3.9	0	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	318	814	1300	-	-	1363	-	-
HCM Lane V/C Ratio	0.094	0.059	0.126	-	-	-	-	-
HCM Control Delay (s)	17.5	9.7	8.2	0	-	0	-	-
HCM Lane LOS	C	A	A	A	-	A	-	-
HCM 95th %tile Q(veh)	0.3	0.2	0.4	-	-	0	-	-

Intersection

Int Delay, s/veh 5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	22	128	51	15	175	2	87	7	12	2	18	67
Conflicting Peds, #/hr	16	0	4	4	0	16	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	11	11	11	2	2	2	7	7	7	2	2	2
Mvmt Flow	27	158	63	19	216	2	107	9	15	2	22	83

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	221	0	0	223	0	0	555	504	208	506	533	235
Stage 1	-	-	-	-	-	-	246	246	-	256	256	-
Stage 2	-	-	-	-	-	-	309	258	-	250	277	-
Critical Hdwy	4.21	-	-	4.12	-	-	7.17	6.57	6.27	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.57	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.57	-	6.12	5.52	-
Follow-up Hdwy	2.299	-	-	2.218	-	-	3.563	4.063	3.363	3.518	4.018	3.318
Pot Cap-1 Maneuver	1297	-	-	1346	-	-	435	463	820	477	453	804
Stage 1	-	-	-	-	-	-	747	694	-	749	696	-
Stage 2	-	-	-	-	-	-	691	685	-	754	681	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1280	-	-	1328	-	-	358	443	808	441	434	792
Mov Cap-2 Maneuver	-	-	-	-	-	-	358	443	-	441	434	-
Stage 1	-	-	-	-	-	-	728	676	-	730	684	-
Stage 2	-	-	-	-	-	-	581	673	-	704	664	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.6	18.4	11.4
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	363	808	1280	-	-	1328	-	-	666
HCM Lane V/C Ratio	0.32	0.018	0.021	-	-	0.014	-	-	0.161
HCM Control Delay (s)	19.5	9.5	7.9	0	-	7.7	0	-	11.4
HCM Lane LOS	C	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.4	0.1	0.1	-	-	0	-	-	0.6

1: SB US 101 Ramps & Oak Ave.

Intersection

Int Delay, s/veh 6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	261	41	40	252	0	0	0	0	129	2	284
Conflicting Peds, #/hr	0	0	6	6	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	-	-	50	-	-	-	-	-	-	-	-	25
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	4	4	4
Mvmt Flow	0	303	48	47	293	0	0	0	0	150	2	330

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	293	0	0	303	0	0	689	689	299
Stage 1	-	-	-	-	-	-	386	386	-
Stage 2	-	-	-	-	-	-	303	303	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.44	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	5.44	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.44	5.54	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.536	4.036	3.336
Pot Cap-1 Maneuver	1269	-	-	1258	-	-	409	366	736
Stage 1	-	-	-	-	-	-	683	607	-
Stage 2	-	-	-	-	-	-	745	660	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1263	-	-	1252	-	-	391	0	732
Mov Cap-2 Maneuver	-	-	-	-	-	-	391	0	-
Stage 1	-	-	-	-	-	-	652	0	-
Stage 2	-	-	-	-	-	-	745	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.1	15.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1263	-	-	1252	-	-	391	732
HCM Lane V/C Ratio	-	-	-	0.037	-	-	0.39	0.451
HCM Control Delay (s)	0	-	-	8	0	-	20	13.9
HCM Lane LOS	A	-	-	A	A	-	C	B
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	1.8	2.4

Intersection

Int Delay, s/veh 3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	108	282	0	0	230	134	62	3	70	0	0	0
Conflicting Peds, #/hr	7	0	0	0	0	7	1	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	-	-	-	-	-	0	-	-	90	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	4	4	4	2	2	2	2	2	2
Mvmt Flow	117	307	0	0	250	146	67	3	76	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	250	0	0	308	0	0	792	792	315
Stage 1	-	-	-	-	-	-	542	542	-
Stage 2	-	-	-	-	-	-	250	250	-
Critical Hdwy	4.15	-	-	4.14	-	-	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	2.245	-	-	2.236	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1298	-	-	1241	-	-	358	322	725
Stage 1	-	-	-	-	-	-	583	520	-
Stage 2	-	-	-	-	-	-	792	700	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1290	-	-	1234	-	-	317	0	720
Mov Cap-2 Maneuver	-	-	-	-	-	-	317	0	-
Stage 1	-	-	-	-	-	-	519	0	-
Stage 2	-	-	-	-	-	-	787	0	-

Approach	EB	WB	NB
HCM Control Delay, s	2.2	0	14.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	317	720	1290	-	-	1234	-	-
HCM Lane V/C Ratio	0.223	0.106	0.091	-	-	-	-	-
HCM Control Delay (s)	19.6	10.6	8.1	0	-	0	-	-
HCM Lane LOS	C	B	A	A	-	A	-	-
HCM 95th %tile Q(veh)	0.8	0.4	0.3	-	-	0	-	-

Intersection

Int Delay, s/veh 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	96	179	77	11	183	9	123	17	19	3	16	58
Conflicting Peds, #/hr	8	0	6	6	0	8	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	104	195	84	12	199	10	134	18	21	3	17	63

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	211	0	0	280	0	0	717	682	246	686	719	214
Stage 1	-	-	-	-	-	-	447	447	-	230	230	-
Stage 2	-	-	-	-	-	-	270	235	-	456	489	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1360	-	-	1283	-	-	345	372	793	362	354	826
Stage 1	-	-	-	-	-	-	591	573	-	773	714	-
Stage 2	-	-	-	-	-	-	736	710	-	584	549	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1351	-	-	1274	-	-	279	333	786	309	317	819
Mov Cap-2 Maneuver	-	-	-	-	-	-	279	333	-	309	317	-
Stage 1	-	-	-	-	-	-	536	519	-	701	705	-
Stage 2	-	-	-	-	-	-	651	701	-	495	498	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0.4	28.6	12.1
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	285	786	1351	-	-	1274	-	-	588
HCM Lane V/C Ratio	0.534	0.026	0.077	-	-	0.009	-	-	0.142
HCM Control Delay (s)	31.2	9.7	7.9	0	-	7.9	0	-	12.1
HCM Lane LOS	D	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	2.9	0.1	0.3	-	-	0	-	-	0.5

Intersection

Int Delay, s/veh 3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	253	59	71	165	0	0	0	0	57	0	84
Conflicting Peds, #/hr	0	0	11	11	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	-	-	50	-	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	8	8	8
Mvmt Flow	0	309	72	87	201	0	0	0	0	70	0	102

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	201	0	0	309	0	0	683	683	212
Stage 1	-	-	-	-	-	-	374	374	-
Stage 2	-	-	-	-	-	-	309	309	-
Critical Hdwy	4.12	-	-	4.13	-	-	6.48	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	5.48	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.48	5.58	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.572	4.072	3.372
Pot Cap-1 Maneuver	1371	-	-	1246	-	-	406	364	813
Stage 1	-	-	-	-	-	-	683	607	-
Stage 2	-	-	-	-	-	-	731	649	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1358	-	-	1235	-	-	374	0	806
Mov Cap-2 Maneuver	-	-	-	-	-	-	374	0	-
Stage 1	-	-	-	-	-	-	629	0	-
Stage 2	-	-	-	-	-	-	731	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.4	12.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1358	-	-	1235	-	-	374	806
HCM Lane V/C Ratio	-	-	-	0.07	-	-	0.186	0.127
HCM Control Delay (s)	0	-	-	8.1	0	-	16.8	10.1
HCM Lane LOS	A	-	-	A	A	-	C	B
HCM 95th %tile Q(veh)	0	-	-	0.2	-	-	0.7	0.4

Intersection

Int Delay, s/veh 2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	143	167	0	0	211	128	25	1	43	0	0	0
Conflicting Peds, #/hr	20	0	0	0	0	20	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	-	-	-	-	-	0	-	-	90	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	4	4	4	3	3	3	6	6	6	2	2	2
Mvmt Flow	164	192	0	0	243	147	29	1	49	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	243	0	0	192	0	0	764	764	212
Stage 1	-	-	-	-	-	-	521	521	-
Stage 2	-	-	-	-	-	-	243	243	-
Critical Hdwy	4.14	-	-	4.13	-	-	6.46	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	5.46	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.46	5.56	-
Follow-up Hdwy	2.236	-	-	2.227	-	-	3.554	4.054	3.354
Pot Cap-1 Maneuver	1312	-	-	1375	-	-	366	329	818
Stage 1	-	-	-	-	-	-	588	525	-
Stage 2	-	-	-	-	-	-	788	697	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1290	-	-	1352	-	-	309	0	804
Mov Cap-2 Maneuver	-	-	-	-	-	-	309	0	-
Stage 1	-	-	-	-	-	-	505	0	-
Stage 2	-	-	-	-	-	-	775	0	-

Approach	EB	WB	NB
HCM Control Delay, s	3.8	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	309	804	1290	-	-	1352	-	-
HCM Lane V/C Ratio	0.097	0.061	0.127	-	-	-	-	-
HCM Control Delay (s)	17.9	9.8	8.2	0	-	0	-	-
HCM Lane LOS	C	A	A	A	-	A	-	-
HCM 95th %tile Q(veh)	0.3	0.2	0.4	-	-	0	-	-

Intersection

Int Delay, s/veh 6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	31	128	51	15	175	2	87	8	12	2	20	77
Conflicting Peds, #/hr	16	0	4	4	0	16	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	11	11	11	2	2	2	7	7	7	2	2	2
Mvmt Flow	38	158	63	19	216	2	107	10	15	2	25	95

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	221	0	0	223	0	0	584	526	208	529	556	235
Stage 1	-	-	-	-	-	-	268	268	-	256	256	-
Stage 2	-	-	-	-	-	-	316	258	-	273	300	-
Critical Hdwy	4.21	-	-	4.12	-	-	7.17	6.57	6.27	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.57	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.57	-	6.12	5.52	-
Follow-up Hdwy	2.299	-	-	2.218	-	-	3.563	4.063	3.363	3.518	4.018	3.318
Pot Cap-1 Maneuver	1297	-	-	1346	-	-	416	450	820	460	439	804
Stage 1	-	-	-	-	-	-	727	678	-	749	696	-
Stage 2	-	-	-	-	-	-	685	685	-	733	666	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1280	-	-	1328	-	-	331	426	808	420	416	792
Mov Cap-2 Maneuver	-	-	-	-	-	-	331	426	-	420	416	-
Stage 1	-	-	-	-	-	-	701	654	-	722	684	-
Stage 2	-	-	-	-	-	-	564	673	-	675	642	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.6	20	11.7
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	337	808	1280	-	-	1328	-	-	660
HCM Lane V/C Ratio	0.348	0.018	0.03	-	-	0.014	-	-	0.185
HCM Control Delay (s)	21.3	9.5	7.9	0	-	7.7	0	-	11.7
HCM Lane LOS	C	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.5	0.1	0.1	-	-	0	-	-	0.7

Intersection

Int Delay, s/veh 7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	270	41	42	261	0	0	0	0	135	2	284
Conflicting Peds, #/hr	0	0	6	6	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	-	-	50	-	-	-	-	-	-	-	-	25
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	4	4	4
Mvmt Flow	0	314	48	49	303	0	0	0	0	157	2	330

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	303	0	0	314	0	0	715	715	309
Stage 1	-	-	-	-	-	-	401	401	-
Stage 2	-	-	-	-	-	-	314	314	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.44	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	5.44	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.44	5.54	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.536	4.036	3.336
Pot Cap-1 Maneuver	1258	-	-	1246	-	-	394	354	726
Stage 1	-	-	-	-	-	-	672	597	-
Stage 2	-	-	-	-	-	-	736	653	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1252	-	-	1240	-	-	375	0	722
Mov Cap-2 Maneuver	-	-	-	-	-	-	375	0	-
Stage 1	-	-	-	-	-	-	640	0	-
Stage 2	-	-	-	-	-	-	736	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.1	16.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1252	-	-	1240	-	-	375	722
HCM Lane V/C Ratio	-	-	-	0.039	-	-	0.425	0.457
HCM Control Delay (s)	0	-	-	8	0	-	21.5	14.1
HCM Lane LOS	A	-	-	A	A	-	C	B
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	2.1	2.4

Intersection

Int Delay, s/veh 3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	108	297	0	0	241	140	62	3	72	0	0	0
Conflicting Peds, #/hr	7	0	0	0	0	7	1	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	-	-	-	-	-	0	-	-	90	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	4	4	4	2	2	2	2	2	2
Mvmt Flow	117	323	0	0	262	152	67	3	78	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	262	0	0	324	0	0	821	821	331
Stage 1	-	-	-	-	-	-	559	559	-
Stage 2	-	-	-	-	-	-	262	262	-
Critical Hdwy	4.15	-	-	4.14	-	-	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	2.245	-	-	2.236	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1285	-	-	1225	-	-	344	309	711
Stage 1	-	-	-	-	-	-	572	511	-
Stage 2	-	-	-	-	-	-	782	691	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1278	-	-	1218	-	-	303	0	706
Mov Cap-2 Maneuver	-	-	-	-	-	-	303	0	-
Stage 1	-	-	-	-	-	-	508	0	-
Stage 2	-	-	-	-	-	-	777	0	-

Approach	EB	WB	NB
HCM Control Delay, s	2.2	0	15.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	303	706	1278	-	-	1218	-	-
HCM Lane V/C Ratio	0.233	0.111	0.092	-	-	-	-	-
HCM Control Delay (s)	20.5	10.7	8.1	0	-	0	-	-
HCM Lane LOS	C	B	A	A	-	A	-	-
HCM 95th %tile Q(veh)	0.9	0.4	0.3	-	-	0	-	-

Intersection

Int Delay, s/veh 9.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	113	179	77	11	183	10	123	20	19	4	19	75
Conflicting Peds, #/hr	8	0	6	6	0	8	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	123	195	84	12	199	11	134	22	21	4	21	82

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	212	0	0	280	0	0	765	720	246	725	756	214
Stage 1	-	-	-	-	-	-	484	484	-	230	230	-
Stage 2	-	-	-	-	-	-	281	236	-	495	526	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1358	-	-	1283	-	-	320	354	793	340	337	826
Stage 1	-	-	-	-	-	-	564	552	-	773	714	-
Stage 2	-	-	-	-	-	-	726	710	-	556	529	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1349	-	-	1274	-	-	246	311	786	283	296	819
Mov Cap-2 Maneuver	-	-	-	-	-	-	246	311	-	283	296	-
Stage 1	-	-	-	-	-	-	502	491	-	688	705	-
Stage 2	-	-	-	-	-	-	623	701	-	458	471	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.4	0.4	36	12.6
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	253	786	1349	-	-	1274	-	-	577
HCM Lane V/C Ratio	0.614	0.026	0.091	-	-	0.009	-	-	0.185
HCM Control Delay (s)	39.5	9.7	7.9	0	-	7.9	0	-	12.6
HCM Lane LOS	E	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	3.7	0.1	0.3	-	-	0	-	-	0.7

Intersection

Int Delay, s/veh 3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	260	61	72	162	0	0	0	0	54	0	86
Conflicting Peds, #/hr	0	0	11	11	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	-	-	50	-	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	8	8	8
Mvmt Flow	0	317	74	88	198	0	0	0	0	66	0	105

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	198	0	0	317	0	0	690	690	209
Stage 1	-	-	-	-	-	-	373	373	-
Stage 2	-	-	-	-	-	-	317	317	-
Critical Hdwy	4.12	-	-	4.13	-	-	6.48	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	5.48	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.48	5.58	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.572	4.072	3.372
Pot Cap-1 Maneuver	1375	-	-	1237	-	-	402	361	816
Stage 1	-	-	-	-	-	-	683	608	-
Stage 2	-	-	-	-	-	-	725	644	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1362	-	-	1226	-	-	369	0	809
Mov Cap-2 Maneuver	-	-	-	-	-	-	369	0	-
Stage 1	-	-	-	-	-	-	628	0	-
Stage 2	-	-	-	-	-	-	725	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.5	12.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1362	-	-	1226	-	-	369	809
HCM Lane V/C Ratio	-	-	-	0.072	-	-	0.178	0.13
HCM Control Delay (s)	0	-	-	8.2	0	-	16.9	10.1
HCM Lane LOS	A	-	-	A	A	-	C	B
HCM 95th %tile Q(veh)	0	-	-	0.2	-	-	0.6	0.4

Intersection

Int Delay, s/veh 3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	154	160	0	0	208	125	26	1	43	0	0	0
Conflicting Peds, #/hr	20	0	0	0	0	20	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	-	-	-	-	-	0	-	-	90	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	4	4	4	3	3	3	6	6	6	2	2	2
Mvmt Flow	177	184	0	0	239	144	30	1	49	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	239	0	0	184	0	0	777	777	204
Stage 1	-	-	-	-	-	-	538	538	-
Stage 2	-	-	-	-	-	-	239	239	-
Critical Hdwy	4.14	-	-	4.13	-	-	6.46	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	5.46	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.46	5.56	-
Follow-up Hdwy	2.236	-	-	2.227	-	-	3.554	4.054	3.354
Pot Cap-1 Maneuver	1316	-	-	1385	-	-	360	323	827
Stage 1	-	-	-	-	-	-	577	516	-
Stage 2	-	-	-	-	-	-	791	700	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1294	-	-	1362	-	-	300	0	813
Mov Cap-2 Maneuver	-	-	-	-	-	-	300	0	-
Stage 1	-	-	-	-	-	-	489	0	-
Stage 2	-	-	-	-	-	-	778	0	-

Approach	EB	WB	NB
HCM Control Delay, s	4	0	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	300	813	1294	-	-	1362	-	-
HCM Lane V/C Ratio	0.103	0.061	0.137	-	-	-	-	-
HCM Control Delay (s)	18.4	9.7	8.2	0	-	0	-	-
HCM Lane LOS	C	A	A	A	-	A	-	-
HCM 95th %tile Q(veh)	0.3	0.2	0.5	-	-	0	-	-

Intersection

Int Delay, s/veh 5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	22	130	51	15	179	2	87	7	12	2	18	67
Conflicting Peds, #/hr	16	0	4	4	0	16	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	11	11	11	2	2	2	7	7	7	2	2	2
Mvmt Flow	27	160	63	19	221	2	107	9	15	2	22	83

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	225	0	0	225	0	0	562	510	210	514	541	240
Stage 1	-	-	-	-	-	-	248	248	-	261	261	-
Stage 2	-	-	-	-	-	-	314	262	-	253	280	-
Critical Hdwy	4.21	-	-	4.12	-	-	7.17	6.57	6.27	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.57	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.57	-	6.12	5.52	-
Follow-up Hdwy	2.299	-	-	2.218	-	-	3.563	4.063	3.363	3.518	4.018	3.318
Pot Cap-1 Maneuver	1292	-	-	1344	-	-	430	459	818	471	448	799
Stage 1	-	-	-	-	-	-	745	692	-	744	692	-
Stage 2	-	-	-	-	-	-	686	682	-	751	679	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1275	-	-	1326	-	-	353	439	806	435	429	787
Mov Cap-2 Maneuver	-	-	-	-	-	-	353	439	-	435	429	-
Stage 1	-	-	-	-	-	-	726	674	-	725	680	-
Stage 2	-	-	-	-	-	-	577	670	-	701	662	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.6	18.6	11.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	358	806	1275	-	-	1326	-	-	661
HCM Lane V/C Ratio	0.324	0.018	0.021	-	-	0.014	-	-	0.162
HCM Control Delay (s)	19.8	9.6	7.9	0	-	7.8	0	-	11.5
HCM Lane LOS	C	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.4	0.1	0.1	-	-	0	-	-	0.6

Intersection

Int Delay, s/veh 6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	269	42	41	225	0	0	0	0	129	2	295
Conflicting Peds, #/hr	0	0	6	6	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	-	-	50	-	-	-	-	-	-	-	-	25
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	4	4	4
Mvmt Flow	0	313	49	48	262	0	0	0	0	150	2	343

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	262	0	0	313	0	0	670	670	268
Stage 1	-	-	-	-	-	-	357	357	-
Stage 2	-	-	-	-	-	-	313	313	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.44	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	5.44	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.44	5.54	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.536	4.036	3.336
Pot Cap-1 Maneuver	1302	-	-	1247	-	-	419	376	766
Stage 1	-	-	-	-	-	-	704	625	-
Stage 2	-	-	-	-	-	-	737	653	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1295	-	-	1241	-	-	400	0	762
Mov Cap-2 Maneuver	-	-	-	-	-	-	400	0	-
Stage 1	-	-	-	-	-	-	672	0	-
Stage 2	-	-	-	-	-	-	737	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.2	15.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1295	-	-	1241	-	-	400	762
HCM Lane V/C Ratio	-	-	-	0.038	-	-	0.381	0.45
HCM Control Delay (s)	0	-	-	8	0	-	19.4	13.5
HCM Lane LOS	A	-	-	A	A	-	C	B
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	1.7	2.4

Intersection

Int Delay, s/veh 3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	114	284	0	0	232	134	64	3	72	0	0	0
Conflicting Peds, #/hr	7	0	0	0	0	7	1	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	-	-	-	-	-	0	-	-	90	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	4	4	4	2	2	2	2	2	2
Mvmt Flow	124	309	0	0	252	146	70	3	78	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	252	0	0	310	0	0	810	810	317
Stage 1	-	-	-	-	-	-	558	558	-
Stage 2	-	-	-	-	-	-	252	252	-
Critical Hdwy	4.15	-	-	4.14	-	-	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	2.245	-	-	2.236	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1296	-	-	1239	-	-	349	314	724
Stage 1	-	-	-	-	-	-	573	512	-
Stage 2	-	-	-	-	-	-	790	698	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1288	-	-	1232	-	-	306	0	719
Mov Cap-2 Maneuver	-	-	-	-	-	-	306	0	-
Stage 1	-	-	-	-	-	-	506	0	-
Stage 2	-	-	-	-	-	-	785	0	-

Approach	EB	WB	NB
HCM Control Delay, s	2.3	0	15.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	306	719	1288	-	-	1232	-	-
HCM Lane V/C Ratio	0.238	0.109	0.096	-	-	-	-	-
HCM Control Delay (s)	20.4	10.6	8.1	0	-	0	-	-
HCM Lane LOS	C	B	A	A	-	A	-	-
HCM 95th %tile Q(veh)	0.9	0.4	0.3	-	-	0	-	-

Intersection

Int Delay, s/veh 8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	96	183	77	11	185	9	123	17	19	3	16	58
Conflicting Peds, #/hr	8	0	6	6	0	8	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	104	199	84	12	201	10	134	18	21	3	17	63

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	213	0	0	285	0	0	723	688	251	693	725	216
Stage 1	-	-	-	-	-	-	451	451	-	232	232	-
Stage 2	-	-	-	-	-	-	272	237	-	461	493	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1357	-	-	1277	-	-	342	369	788	358	352	824
Stage 1	-	-	-	-	-	-	588	571	-	771	713	-
Stage 2	-	-	-	-	-	-	734	709	-	581	547	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1348	-	-	1268	-	-	276	330	781	305	315	817
Mov Cap-2 Maneuver	-	-	-	-	-	-	276	330	-	305	315	-
Stage 1	-	-	-	-	-	-	532	517	-	698	704	-
Stage 2	-	-	-	-	-	-	649	700	-	491	495	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	0.4	29.2	12.2
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	282	781	1348	-	-	1268	-	-	585
HCM Lane V/C Ratio	0.54	0.026	0.077	-	-	0.009	-	-	0.143
HCM Control Delay (s)	31.8	9.7	7.9	0	-	7.9	0	-	12.2
HCM Lane LOS	D	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	3	0.1	0.3	-	-	0	-	-	0.5

Background Plus Project AM

Intersection												
Int Delay, s/veh	6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	31	130	51	15	179	2	87	8	12	2	20	77
Conflicting Peds, #/hr	16	0	4	4	0	16	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	11	11	11	2	2	2	7	7	7	2	2	2
Mvmt Flow	38	160	63	19	221	2	107	10	15	2	25	95
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	225	0	0	225	0	0	592	533	210	536	563	240
Stage 1	-	-	-	-	-	-	271	271	-	261	261	-
Stage 2	-	-	-	-	-	-	321	262	-	275	302	-
Critical Hdwy	4.21	-	-	4.12	-	-	7.17	6.57	6.27	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.57	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.57	-	6.12	5.52	-
Follow-up Hdwy	2.299	-	-	2.218	-	-	3.563	4.063	3.363	3.518	4.018	3.318
Pot Cap-1 Maneuver	1292	-	-	1344	-	-	411	446	818	455	435	799
Stage 1	-	-	-	-	-	-	724	676	-	744	692	-
Stage 2	-	-	-	-	-	-	680	682	-	731	664	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1275	-	-	1326	-	-	327	423	806	416	412	787
Mov Cap-2 Maneuver	-	-	-	-	-	-	327	423	-	416	412	-
Stage 1	-	-	-	-	-	-	698	652	-	718	680	-
Stage 2	-	-	-	-	-	-	559	670	-	674	640	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.2			0.6			20.3			11.8		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	333	806	1275	-	-	1326	-	-	655			
HCM Lane V/C Ratio	0.352	0.018	0.03	-	-	0.014	-	-	0.187			
HCM Control Delay (s)	21.6	9.6	7.9	0	-	7.8	0	-	11.8			
HCM Lane LOS	C	A	A	A	-	A	A	-	B			
HCM 95th %tile Q(veh)	1.5	0.1	0.1	-	-	0	-	-	0.7			

Intersection

Int Delay, s/veh 3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	114	299	0	0	243	140	64	3	74	0	0	0
Conflicting Peds, #/hr	7	0	0	0	0	7	1	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	-	-	-	-	-	0	-	-	90	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	4	4	4	2	2	2	2	2	2
Mvmt Flow	124	325	0	0	264	152	70	3	80	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	264	0	0	326	0	0	838	838	333
Stage 1	-	-	-	-	-	-	574	574	-
Stage 2	-	-	-	-	-	-	264	264	-
Critical Hdwy	4.15	-	-	4.14	-	-	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	2.245	-	-	2.236	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1283	-	-	1222	-	-	336	302	709
Stage 1	-	-	-	-	-	-	563	503	-
Stage 2	-	-	-	-	-	-	780	690	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1276	-	-	1215	-	-	294	0	704
Mov Cap-2 Maneuver	-	-	-	-	-	-	294	0	-
Stage 1	-	-	-	-	-	-	496	0	-
Stage 2	-	-	-	-	-	-	775	0	-

Approach	EB	WB	NB
HCM Control Delay, s	2.2	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	294	704	1276	-	-	1215	-	-
HCM Lane V/C Ratio	0.248	0.114	0.097	-	-	-	-	-
HCM Control Delay (s)	21.2	10.8	8.1	0	-	0	-	-
HCM Lane LOS	C	B	A	A	-	A	-	-
HCM 95th %tile Q(veh)	1	0.4	0.3	-	-	0	-	-

Intersection

Int Delay, s/veh 9.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	113	183	77	11	185	10	123	20	19	4	19	75
Conflicting Peds, #/hr	8	0	6	6	0	8	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	123	199	84	12	201	11	134	22	21	4	21	82

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	214	0	0	285	0	0	772	726	251	731	762	217
Stage 1	-	-	-	-	-	-	488	488	-	232	232	-
Stage 2	-	-	-	-	-	-	284	238	-	499	530	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1356	-	-	1277	-	-	317	351	788	337	335	823
Stage 1	-	-	-	-	-	-	561	550	-	771	713	-
Stage 2	-	-	-	-	-	-	723	708	-	554	527	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1347	-	-	1268	-	-	243	308	781	280	294	816
Mov Cap-2 Maneuver	-	-	-	-	-	-	243	308	-	280	294	-
Stage 1	-	-	-	-	-	-	498	489	-	685	704	-
Stage 2	-	-	-	-	-	-	621	699	-	456	468	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.4	0.4	36.9	12.7
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	250	781	1347	-	-	1268	-	-	574
HCM Lane V/C Ratio	0.622	0.026	0.091	-	-	0.009	-	-	0.186
HCM Control Delay (s)	40.5	9.7	7.9	0	-	7.9	0	-	12.7
HCM Lane LOS	E	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	3.7	0.1	0.3	-	-	0	-	-	0.7

1: SB US 101 Ramps & Oak Ave.

Intersection

Int Delay, s/veh 6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	362	88	75	199	0	0	0	0	140	5	260
Conflicting Peds, #/hr	0	0	11	11	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	-	-	50	-	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	8	8	8
Mvmt Flow	0	393	96	82	216	0	0	0	0	152	5	283

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	216	0	0	393	0	0	772	772	227
Stage 1	-	-	-	-	-	-	379	379	-
Stage 2	-	-	-	-	-	-	393	393	-
Critical Hdwy	4.12	-	-	4.13	-	-	6.48	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	5.48	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.48	5.58	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.572	4.072	3.372
Pot Cap-1 Maneuver	1354	-	-	1160	-	-	359	323	798
Stage 1	-	-	-	-	-	-	679	604	-
Stage 2	-	-	-	-	-	-	669	596	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1342	-	-	1149	-	-	330	0	791
Mov Cap-2 Maneuver	-	-	-	-	-	-	330	0	-
Stage 1	-	-	-	-	-	-	624	0	-
Stage 2	-	-	-	-	-	-	669	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.3	16.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1342	-	-	1149	-	-	330	791
HCM Lane V/C Ratio	-	-	-	0.071	-	-	0.478	0.357
HCM Control Delay (s)	0	-	-	8.4	0	-	25.5	12.1
HCM Lane LOS	A	-	-	A	A	-	D	B
HCM 95th %tile Q(veh)	0	-	-	0.2	-	-	2.5	1.6

2: NB US 101 Ramps & Oak Ave.

Intersection

Int Delay, s/veh 4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	180	332	0	0	197	220	77	5	101	0	0	0
Conflicting Peds, #/hr	20	0	0	0	0	20	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	-	-	-	-	-	0	-	-	90	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	3	3	3	6	6	6	2	2	2
Mvmt Flow	196	361	0	0	214	239	84	5	110	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	214	0	0	361	0	0	966	966	381
Stage 1	-	-	-	-	-	-	752	752	-
Stage 2	-	-	-	-	-	-	214	214	-
Critical Hdwy	4.14	-	-	4.13	-	-	6.46	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	5.46	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.46	5.56	-
Follow-up Hdwy	2.236	-	-	2.227	-	-	3.554	4.054	3.354
Pot Cap-1 Maneuver	1344	-	-	1192	-	-	278	251	657
Stage 1	-	-	-	-	-	-	459	412	-
Stage 2	-	-	-	-	-	-	812	718	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1322	-	-	1172	-	-	223	0	646
Mov Cap-2 Maneuver	-	-	-	-	-	-	223	0	-
Stage 1	-	-	-	-	-	-	374	0	-
Stage 2	-	-	-	-	-	-	798	0	-

Approach	EB	WB	NB
HCM Control Delay, s	2.9	0	20.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	223	646	1322	-	-	1172	-	-
HCM Lane V/C Ratio	0.4	0.17	0.148	-	-	-	-	-
HCM Control Delay (s)	31.5	11.7	8.2	0	-	0	-	-
HCM Lane LOS	D	B	A	A	-	A	-	-
HCM 95th %tile Q(veh)	1.8	0.6	0.5	-	-	0	-	-

Intersection

Int Delay, s/veh 13.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	52	268	103	15	201	10	134	21	21	10	31	82
Conflicting Peds, #/hr	16	0	4	4	0	16	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	11	11	11	2	2	2	7	7	7	2	2	2
Mvmt Flow	59	305	117	17	228	11	152	24	24	11	35	93

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	242	0	0	424	0	0	817	759	381	765	812	252
Stage 1	-	-	-	-	-	-	483	483	-	270	270	-
Stage 2	-	-	-	-	-	-	334	276	-	495	542	-
Critical Hdwy	4.21	-	-	4.12	-	-	7.17	6.57	6.27	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.57	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.57	-	6.12	5.52	-
Follow-up Hdwy	2.299	-	-	2.218	-	-	3.563	4.063	3.363	3.518	4.018	3.318
Pot Cap-1 Maneuver	1273	-	-	1135	-	-	289	330	655	320	313	787
Stage 1	-	-	-	-	-	-	555	544	-	736	686	-
Stage 2	-	-	-	-	-	-	669	673	-	556	520	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1256	-	-	1120	-	-	213	303	645	268	287	775
Mov Cap-2 Maneuver	-	-	-	-	-	-	213	303	-	268	287	-
Stage 1	-	-	-	-	-	-	520	509	-	689	673	-
Stage 2	-	-	-	-	-	-	540	660	-	472	487	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.5	57.6	15.3
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	222	645	1256	-	-	1120	-	-	490
HCM Lane V/C Ratio	0.793	0.037	0.047	-	-	0.015	-	-	0.285
HCM Control Delay (s)	63.9	10.8	8	0	-	8.3	0	-	15.3
HCM Lane LOS	F	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	5.8	0.1	0.1	-	-	0	-	-	1.2

Intersection

Int Delay, s/veh 16.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	365	72	93	332	0	0	0	0	210	5	285
Conflicting Peds, #/hr	0	0	6	6	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	-	-	50	-	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	4	4	4
Mvmt Flow	0	397	78	101	361	0	0	0	0	228	5	310

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	361	0	0	397	0	0	960	960	367
Stage 1	-	-	-	-	-	-	563	563	-
Stage 2	-	-	-	-	-	-	397	397	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.44	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	5.44	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.44	5.54	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.536	4.036	3.336
Pot Cap-1 Maneuver	1198	-	-	1162	-	-	282	255	674
Stage 1	-	-	-	-	-	-	566	506	-
Stage 2	-	-	-	-	-	-	675	600	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1192	-	-	1156	-	-	251	0	671
Mov Cap-2 Maneuver	-	-	-	-	-	-	251	0	-
Stage 1	-	-	-	-	-	-	504	0	-
Stage 2	-	-	-	-	-	-	675	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.8	44.1
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1192	-	-	1156	-	-	251	671
HCM Lane V/C Ratio	-	-	-	0.087	-	-	0.931	0.462
HCM Control Delay (s)	0	-	-	8.4	0	-	82.9	14.9
HCM Lane LOS	A	-	-	A	A	-	F	B
HCM 95th %tile Q(veh)	0	-	-	0.3	-	-	8.3	2.4

HCM 2010 TWSC
2: NB US 101 Ramps & Oak Ave.

General Plan Buildout PM

Intersection

Int Delay, s/veh 7.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	240	335	0	0	322	410	103	5	121	0	0	0
Conflicting Peds, #/hr	7	0	0	0	0	7	1	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	-	-	-	-	-	0	-	-	90	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	4	4	4	2	2	2	2	2	2
Mvmt Flow	253	353	0	0	339	432	108	5	127	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	339	0	0	354	0	0	1198	1198	361
Stage 1	-	-	-	-	-	-	859	859	-
Stage 2	-	-	-	-	-	-	339	339	-
Critical Hdwy	4.15	-	-	4.14	-	-	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	2.245	-	-	2.236	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1204	-	-	1194	-	-	205	186	684
Stage 1	-	-	-	-	-	-	415	373	-
Stage 2	-	-	-	-	-	-	722	640	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1197	-	-	1187	-	-	150	0	679
Mov Cap-2 Maneuver	-	-	-	-	-	-	150	0	-
Stage 1	-	-	-	-	-	-	306	0	-
Stage 2	-	-	-	-	-	-	718	0	-

Approach	EB	WB	NB
HCM Control Delay, s	3.7	0	43.9
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	150	679	1197	-	-	1187	-	-
HCM Lane V/C Ratio	0.758	0.188	0.211	-	-	-	-	-
HCM Control Delay (s)	80.1	11.5	8.8	0	-	0	-	-
HCM Lane LOS	F	B	A	A	-	A	-	-
HCM 95th %tile Q(veh)	4.6	0.7	0.8	-	-	0	-	-

Intersection

Int Delay, s/veh 129.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	103	235	118	21	361	10	237	31	26	26	37	134
Conflicting Peds, #/hr	8	0	6	6	0	8	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	108	247	124	22	380	11	249	33	27	27	39	141

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	393	0	0	374	0	0	1049	965	319	976	1021	395
Stage 1	-	-	-	-	-	-	528	528	-	431	431	-
Stage 2	-	-	-	-	-	-	521	437	-	545	590	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1166	-	-	1184	-	-	~ 205	255	722	230	236	654
Stage 1	-	-	-	-	-	-	534	528	-	603	583	-
Stage 2	-	-	-	-	-	-	539	579	-	523	495	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1158	-	-	1176	-	-	~ 121	218	716	174	202	649
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 121	218	-	174	202	-
Stage 1	-	-	-	-	-	-	469	464	-	530	568	-
Stage 2	-	-	-	-	-	-	381	564	-	409	435	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0.4	\$ 568.1	27.1
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	128	716	1158	-	-	1176	-	-	365
HCM Lane V/C Ratio	2.204	0.038	0.094	-	-	0.019	-	-	0.568
HCM Control Delay (s)	\$ 622.2	10.2	8.4	0	-	8.1	0	-	27.1
HCM Lane LOS	F	B	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	23.7	0.1	0.3	-	-	0.1	-	-	3.4

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Intersection Delay, s/veh 15.8
Intersection LOS C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	52	268	103	0	15	201	10	0	134	21	21
Peak Hour Factor	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	11	11	11	2	2	2	2	2	7	7	7
Mvmt Flow	0	59	305	117	0	17	228	11	0	152	24	24
Number of Lanes	0	1	1	0	0	0	2	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	20.8	11.2	12.9
HCM LOS	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	13%	0%	100%	0%
Vol Thru, %	0%	50%	0%	72%	87%	91%	0%	27%
Vol Right, %	0%	50%	0%	28%	0%	9%	0%	73%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	134	42	52	371	116	111	10	113
LT Vol	134	0	52	0	15	0	10	0
Through Vol	0	21	0	268	101	101	0	31
RT Vol	0	21	0	103	0	10	0	82
Lane Flow Rate	152	48	59	422	131	126	11	128
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.317	0.088	0.111	0.708	0.237	0.222	0.024	0.234
Departure Headway (Hd)	7.49	6.624	6.75	6.047	6.494	6.363	7.581	6.551
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	478	537	529	594	550	560	469	544
Service Time	5.275	4.407	4.516	3.812	4.274	4.143	5.372	4.341
HCM Lane V/C Ratio	0.318	0.089	0.112	0.71	0.238	0.225	0.023	0.235
HCM Control Delay	13.8	10.1	10.4	22.3	11.3	11	10.6	11.4
HCM Lane LOS	B	B	B	C	B	B	B	B
HCM 95th-tile Q	1.3	0.3	0.4	5.7	0.9	0.8	0.1	0.9

Intersection

Intersection Delay, s/veh
Intersection LOS

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	10	31	82
Peak Hour Factor	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	11	35	93
Number of Lanes	0	1	1	0

Approach

	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	11.3
HCM LOS	B

Lane

Intersection

Intersection Delay, s/veh 19.4
Intersection LOS C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	103	235	118	0	21	361	10	0	237	31	26
Peak Hour Factor	0.92	0.95	0.95	0.95	0.92	0.95	0.95	0.95	0.92	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	108	247	124	0	22	380	11	0	249	33	27
Number of Lanes	0	1	1	0	0	0	2	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	24.1	15.9	19.8
HCM LOS	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	10%	0%	100%	0%
Vol Thru, %	0%	54%	0%	67%	90%	95%	0%	22%
Vol Right, %	0%	46%	0%	33%	0%	5%	0%	78%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	237	57	103	353	202	191	26	171
LT Vol	237	0	103	0	21	0	26	0
Through Vol	0	31	0	235	181	181	0	37
RT Vol	0	26	0	118	0	10	0	134
Lane Flow Rate	249	60	108	372	212	201	27	180
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.577	0.125	0.237	0.735	0.446	0.416	0.066	0.38
Departure Headway (Hd)	8.328	7.484	7.872	7.119	7.564	7.472	8.677	7.593
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	432	478	455	505	475	479	412	472
Service Time	6.099	5.255	5.64	4.886	5.337	5.246	6.455	5.37
HCM Lane V/C Ratio	0.576	0.126	0.237	0.737	0.446	0.42	0.066	0.381
HCM Control Delay	21.9	11.3	13.1	27.3	16.3	15.5	12.1	15
HCM Lane LOS	C	B	B	D	C	C	B	B
HCM 95th-tile Q	3.5	0.4	0.9	6.1	2.3	2	0.2	1.8

Intersection

Intersection Delay, s/veh
Intersection LOS

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	26	37	134
Peak Hour Factor	0.92	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	27	39	141
Number of Lanes	0	1	1	0

Approach SB

Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	14.6
HCM LOS	B

Lane

City of Greenfield
Building and Construction, Planning/Land Use Fees

Resolution 2014-81

Effective: 2-7-2015

TYPE OF PERMIT	Admin Fee	Application/Permit Fee	Deposit	Staff T&M + Consultant
PLANNING/LAND USE				
ADMINISTRATIVE				
Preliminary Review		\$244.00		Cost Recovery
DEVELOPMENT AGREEMENT				
Development Agreement		\$5,968.00	\$3,000.00	Cost Recovery
Development Agreement Recording		\$270.00		
Amendment/Cancellation		\$2,436.00	\$1,000.00	Cost Recovery
Annual Review		\$1,066.00		Cost Recovery
PLANNED DEVELOPMENT/SPECIFIC PLAN				
Planned Development		\$5,968.00	\$10,000.00	Cost Recovery
Revocation		\$1,233.00		Cost Recovery
Extension		\$685.00		Cost Recovery
Minor Modification		\$685.00	\$500.00	Cost Recovery
STANDARD SUBDIVISION				
Filing Fee		\$270.00		
Tentative Map		\$5,968.00	\$10,000.00	Cost Recovery
Extension of Tentative Map		\$929.00		Cost Recovery
Final Map		\$2,023.00	\$5,000.00	Cost Recovery
MINOR SUBDIVISION				
Parcel Map		\$2,265.00	\$2,000.00	Cost Recovery
Extension of Parcel Map		\$929.00		Cost Recovery
Parcel Map Recording		\$270.00		
LOT ADJUSTMENT				
Lot Line Adjustment		\$927.00	\$3,000.00	Cost Recovery
Lot Merger		\$1,340.00	\$1,500.00	Cost Recovery
USE PERMIT				
Minor Use Permit		\$655.00		Cost Recovery
Conditional Use Permit		\$1,066.00		Cost Recovery
Temporary Use Permit		\$1,066.00		Cost Recovery
DESIGN REVIEW				
Single Family Residence (<500 sf)		\$244.00		Cost Recovery
Single Family Residence		\$929.00		Cost Recovery
Multi-Family		\$1,340.00		Cost Recovery
Non-Residential/Commercial/Industrial Projects		\$1,340.00		Cost Recovery
Planned Development/Specific Plan		\$1,614.00		Cost Recovery
FENCE				
Under 6' (Planning Director)		\$175.50		N/A
Over 6' (Planning Commission)		\$792.00		Cost Recovery
SIGN				
Sign Permit		\$244.00		Cost Recovery
ZONING				
Zoning Clearance/Plan Check		\$244.00		
Rezoning		\$2,299.00		Cost Recovery
Zoning Amendment		\$2,847.00		Cost Recovery
Variance		\$1,203.00		Cost Recovery
General Plan Amendment		\$3,806.00		Cost Recovery
ANNEXATION/SPHERE OF INFLUENCE				
Annexation/Sphere of Influence		\$5,694.00	\$5,000.00	Cost Recovery
LAFCO Application		\$2,984.00		Cost Recovery
ENVIRONMENTAL				
Initial Study		\$3,395.00	\$20,000.00	Cost Recovery
Environmental Impact Report		\$7,779.00	\$40,000.00	Cost Recovery
Negative Declaration/Mitigated Negative Declaration		\$5,039.00	\$10,000.00	Cost Recovery
CERTIFICATE OF COMPLIANCE/PARCEL LEGAL STATUS				
Certificate of Compliance		\$2,299.00	\$1,000.00	Cost Recovery
Certificate of Compliance Recording		\$270.00		
APPEAL				
To Planning Commission (from Planning Director)		\$683.00		
To City Council (from Planning Commission)		\$683.00		
OTHER APPLICATION				
Document Recording/Filing		\$270.00		
Other Application		\$381.00		Cost Recovery

March 2022 Study

June 2015 Study



June 26, 2015

Mr. Eduardo Couttolenc
1054 University Avenue
Salinas, CA 93901

RE: Greenfield Mixed-Use Project, Greenfield, California

Dear Eduardo:

Hatch Mott MacDonald (HMM) is pleased to provide traffic engineering services to support the development of your mixed-use project located on Fourth Street, between Apple and Palm Avenues and north of Oak Avenue, in Greenfield, California. Note that this scope of work is based upon input from City of Greenfield staff.

Exhibit 1 depicts the location of the project within Greenfield. **Exhibit 2** contains the proposed project site plan.

A. Existing Conditions

The operations of the following three existing study intersections were reviewed in this study:

1. US 101 Southbound Ramps / Oak Avenue;
2. US 101 Northbound Ramps / Oak Avenue; and
3. Fourth Street / Oak Avenue.

Exhibit 3 shows the existing volumes during the AM and PM peak hours. The existing volumes were collected on Wednesday, May 27, 2015, and included cars, trucks, buses, pedestrians and bicyclists. From these counts, the peak one-hour AM and PM periods were identified at each intersection and are shown on **Exhibit 3**. Note that these counts were balanced to account for minor variations in the traffic counts between adjacent intersections. **Appendix A** contains the raw (i.e. unbalanced) intersection counts.

Exhibit 4A summarizes the levels of service at the study intersections under Existing conditions, and **Exhibit 4B** summarizes the necessary improvements at those intersections. **Appendix B** contains the level of service calculations. This analysis utilizes the Highway Capacity Manual 2010 methodologies.

Under Existing conditions, all of the study intersection operate at an overall level of service (LOS) of "A", with side-street operations of LOS B, LOS C, or LOS D. All of the study intersections operate within the City of Greenfield and Caltrans level of service standards (LOS C and the transition between LOS C and D, respectively).



B. Existing Plus Project Conditions

The project is a mixed-use project, i.e. it has both residential and commercial components. These components are:

- Apartments – 4 units
- Townhomes – 20 units
- Commercial/Retail – approximately 16,000 square feet

Exhibit 5 summarizes the project trip generation estimate. This trip generation estimate uses rates from *Trip Generation Manual*, 9th Edition, published by the Institute of Transportation Engineers (ITE) in 2012.

The “Specialty Retail Center” land use was used to estimate the trip generation for the commercial component of the project. The *Trip Generation Manual* does not provide trip rates for the “Specialty Retail Center” land use during the AM peak hour. Therefore, trip rates during the AM are cited from “San Diego Trip Generators,” published by the San Diego Association of Governments (SANDAG) in April 2002.

It is anticipated that some of the future residents of the residential portion of the site would frequent the commercial portion of the site (also called “Internal Capture,” as they are trips that do not leave the project site). The trip generation estimate therefore assumes a 5% reduction to account for these trips.

As shown in **Exhibit 5**, the project would generate an estimated 809 daily trips, with 30 trips during the AM peak hour (14 in, 16 out) and 52 trips during the PM peak hour (26 in, 26 out).

Project trip distribution represents the percentage of project traffic that would travel to and from the project site at a localized level. **Exhibit 6A** graphically depicts the estimated project trip distribution. This distribution was developed based upon the relative locations of compatible land uses and the relative magnitude of the existing traffic volumes within the study area.

Exhibit 6B contains the project trip assignment for the new project trips on the study network, using both the aforementioned trip generation and trip distribution to quantify the number of new project trips added to each direction of travel at each of the study intersections.

The trip assignment within **Exhibit 6B** was added to the Existing volumes to create the Existing Plus Project volumes shown on **Exhibit 7**.

Exhibit 4A summarizes the levels of service of the study intersections under Existing Plus Project conditions, and **Exhibit 4B** summarizes the necessary improvements at those intersections. Levels of service at all study intersections continue to operate within the City of Greenfield and Caltrans standards. The project would not represent an impact upon the area street network. **Appendix B** contains the level of service calculations under Existing Plus Project conditions.



C. Background Conditions

Approved development projects within Greenfield were obtained from the City of Greenfield. **Exhibit 8** identifies these projects and estimates their trip generation (again using trip rates within the *Trip Generation Manual*). These trips were assigned throughout the study intersections and added to the Existing Condition volumes to create Background Condition volumes depicted within **Exhibit 9**.

Exhibit 4A summarizes the levels of service of the study intersections under Background conditions, and **Exhibit 4B** summarizes the necessary improvements at those intersections. Levels of service at all study intersections continue to operate within the City of Greenfield and Caltrans standards. The project would not represent an impact upon the area street network. **Appendix B** contains the level of service calculations under Background conditions.

D. Background Plus Project Conditions

The project trip assignment depicted in **Exhibit 6B** was added to the Background volumes depicted in **Exhibit 9** to create the Background Plus Project volumes shown on **Exhibit 10**.

Exhibit 4A summarizes the levels of service of the study intersections under Background Plus Project conditions, and **Exhibit 4B** summarizes the necessary improvements at those intersections. Levels of service at all study intersections continue to operate within the City of Greenfield and Caltrans standards. The project would not represent an impact upon the area street network. **Appendix B** contains the level of service calculations under Background Plus Project conditions.

E. General Plan Buildout Conditions

General Plan Buildout conditions represent operations at the study intersections in the Year 2035. The traffic forecasts at the study intersections were taken from the *Walnut Avenue Commercial Area Specific Plan Traffic Impact Study*, prepared by Wood Rodgers in March 2013. **Exhibit 11** depicts these volumes at the study intersections.

Exhibit 4A summarizes the levels of service of the study intersections under General Plan Buildout conditions, and **Exhibit 4B** summarizes the necessary improvements at those intersections. **Appendix B** contains the level of service calculations under General Plan Buildout conditions. Levels of service at two of the three study intersections continue to operate within the City of Greenfield and Caltrans standards. However, operations at one intersection – Fourth Street / Oak Avenue – would operate at a deficient LOS F (both overall and side-street operations) during the AM and PM peak hours. The project would represent a significant cumulative impact upon the operations of this intersection.

The City of Greenfield has instituted a traffic impact fee to implement roadway improvements at various intersections and segments through the city. The proposed improvements at the intersection of Fourth Street / Oak Avenue are the following:

- Add an eastbound Oak Avenue left turn lane;
- Add northbound and southbound Fourth Street left turn lanes;
- Add a second westbound Oak Avenue through lane; and
- Convert the intersection to all-way stop control.

Implementation of these improvements would result in operations of LOS B (AM) and LOS C (PM) at the Fourth Street / Oak Avenue intersection, which are operations at or better than the City of Greenfield level of service standard. The project's payment of the city's traffic impact fee would constitute its proportional contribution towards these improvements. Therefore, the project applicant's payment of the city's traffic impact fee would reduce the project's impact to a less-than-significant level.

F. Project Access

The project would have a total of four separate driveways – two on Fourth Street and one each on Apple and Palm Avenue. They provide access to a parking lot directly in front of the building. The operations of these driveways are anticipated to operate within city level of service standards. The driveways located on Apple and Palm Avenues are only approximately 25 feet east of the Apple and Palm Avenue intersections with Fourth Street, and their operations may be influenced by operations at those intersections; however, this is expected to be a very minor issue that will only rarely cause significant delays for traffic exiting these driveways.

The project site is currently vacant, and there are no sidewalks along the project street frontages. The project applicant proposes to construct sidewalks along the site's frontages on Apple Avenue, Fourth Street, and Palm Avenue. This improvement, combined with the existing sidewalks along Fourth Street and Oak Avenue, will allow residents of the project to walk continuously on sidewalks to the downtown business district and to nearby Cesar Chavez Elementary School. It will also encourage more site residents and commercial patrons to walk to and from the site.

Bike racks are located at the northeastern and southeastern corners of the project site. This will facilitate bicyclists traveling to and from the commercial area.

G. Traffic Impact Fees

The project would be responsible for payment of both the City of Greenfield traffic impact fee and the Transportation Agency for Monterey County (TAMC) Regional Impact Fee. Payment of these two fees would constitute the project's proportional share towards traffic impacts within the City of Greenfield and Monterey County, respectively.



H. Conclusion

In summary, the project would have no traffic impacts under Existing Plus Project or Background Plus Project conditions. The project would have a significant cumulative impact under General Plan Buildout conditions at the Fourth / Oak intersection; however, the project's payment of the City of Greenfield traffic impact fee will constitute its proportional share towards the planned improvements at that intersection, and thus will result in the project having a less-than-significant impact upon that intersection.

The project driveways are anticipated to operate within acceptable limits. The project will construct sidewalk along its frontages of Apple Avenue, Fourth Street, and Palm Avenue. The project site will also have bike racks at its northeastern and southeastern corners.

The project would be responsible for payment of the aforementioned City of Greenfield traffic impact fee and also the TAMC Regional Impact Fee. Payment of both fees constitute the project's proportional share towards traffic impacts within the City of Greenfield and Monterey County, respectively.

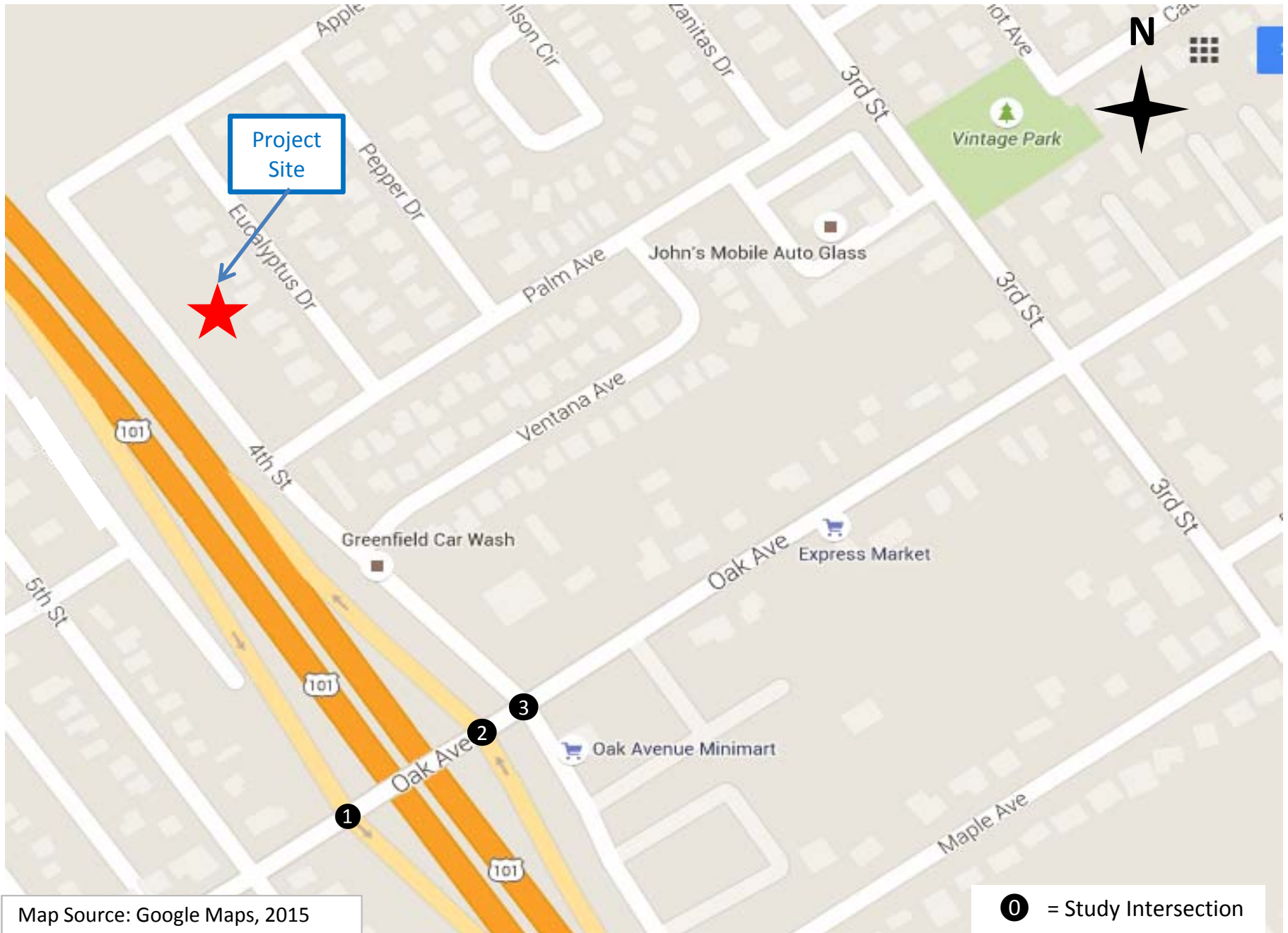
If you have any questions regarding the contents of this letter or need additional information, please do not hesitate to contact Jeff Waller at your convenience. Thank you for the opportunity to assist you with this project.

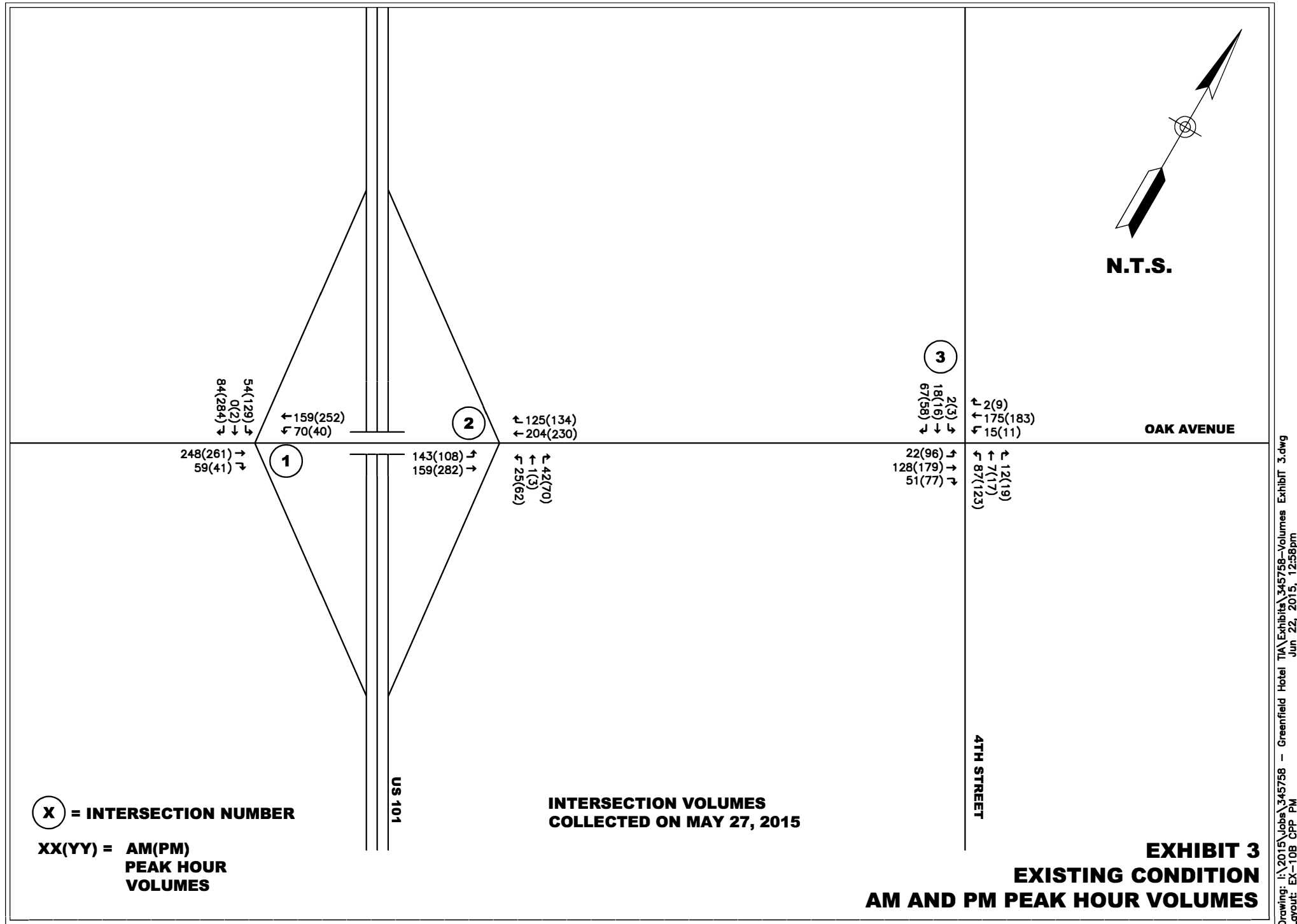
Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Keith B. Higgins', with a long horizontal flourish extending to the right.

Keith B. Higgins, PE, TE
Vice President
T 408.848.3122 F 408.848.2202
keith.higgins@hatchmott.com

kbh; jmw
enclosures





N-S Street	E-W Street	Existing Lane Configuration	Existing Intersection Control	LOS Standard	Existing Conditions				Existing Plus Project Conditions				Background Conditions				Background Plus Project Conditions				General Plan Buildout Conditions			
					AM Peak Hr.		PM Peak Hr.		AM Peak Hr.		PM Peak Hr.		AM Peak Hr.		PM Peak Hr.		AM Peak Hr.		PM Peak Hr.		AM Peak Hr.		PM Peak Hr.	
					Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
1	Southbound US 101 Ramps	Oak Avenue NB SB 1-L/T, 1-R* EB 1-T, 1-R* WB 1-L/T	One-Way Stop (NB/SB) Southbound Approach	C/D (E)	3.4 12.5	A B	6.8 15.8	A C	3.4 12.8	A B	7.0 16.5	A C	3.4 12.7	A B	6.8 15.3	A C	3.5 13.0	A B	7.2 16.9	A C	6.6 16.9	A C	16.8 44.1	C E
2	Northbound US 101 Ramps	Oak Avenue NB 1-L/T, 1-R* SB EB 1-L/T WB 1-T, 1-R*	One-Way Stop (NB/SB) Northbound Approach	C/D (E)	2.9 12.7	A B	3.2 14.9	A B	2.9 12.9	A B	3.2 15.3	A C	3.0 13.1	A B	3.4 15.3	A C	3.0 13.2	A B	3.3 15.7	A C	4.7 20.6	A C	7.9 43.9	A E
3	Fourth Street	Oak Avenue NB 1-L/T, 1-R* SB 1-L/T/R EB 1-L/T/R WB 1-L/T/R	Two-Way Stop (NB/SB) Northbound Approach Southbound Approach <i>With Improvement</i>	C (E) (E)	5.5 18.4 11.4	A C B	8.0 28.6 12.1	A D B	6.0 20.0 11.7	A C B	9.6 36.0 12.6	A E B	5.5 18.6 11.5	A C B	8.0 29.2 12.2	A D B	6.0 20.3 11.8	A C B	9.8 36.9 12.7	A E B	13.2 57.6 15.3	B F C	129.5 568.1 27.1	F F D
																					15.8	C	12.3	B

Notes:

1. L, T, R = Left, Through, Right
2. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound
3. * = Lane configuration reflects actual operations at intersection.
4. Analysis performed using 2010 Highway Capacity Manual methodologies.
5. Level of service standard for Caltrans is the transition from LOS C to D. The level of service standard for the City of Greenfield is LOS C.
6. Worst approach level of service standard is generally LOS E. Level of service "F" is the level of service at which improvements would be required.
7. Items in **bold** indicate a significant impact.

N-S Street	E-W Street	Existing Lane Configuration	Existing Intersection Control	Existing Plus Project Conditions	Background Plus Project Conditions	General Plan Buildout Conditions
1 Southbound US 101 Ramps	Oak Avenue	NB SB 1-L/T, 1-R* EB 1-T, 1-R* WB 1-L/T	One-Way Stop (NB/SB)	None Required	None Required	None Required
2 Northbound US 101 Ramps	Oak Avenue	NB 1-L/T, 1-R* SB EB 1-L/T WB 1-T, 1-R*	One-Way Stop (NB/SB)	None Required	None Required	None Required
3 Fourth Street	Oak Avenue	NB 1-L/T, 1-R* SB 1-L/T/R EB 1-L/T/R WB 1-L/T/R	Two-Way Stop (NB/SB)	None Required	None Required	a. Add EB Oak L b. Add NB Fourth L and a SB Fourth L c. Add a 2nd WB Oak T d. Convert Intersection to All- Way Stop Control

Notes:

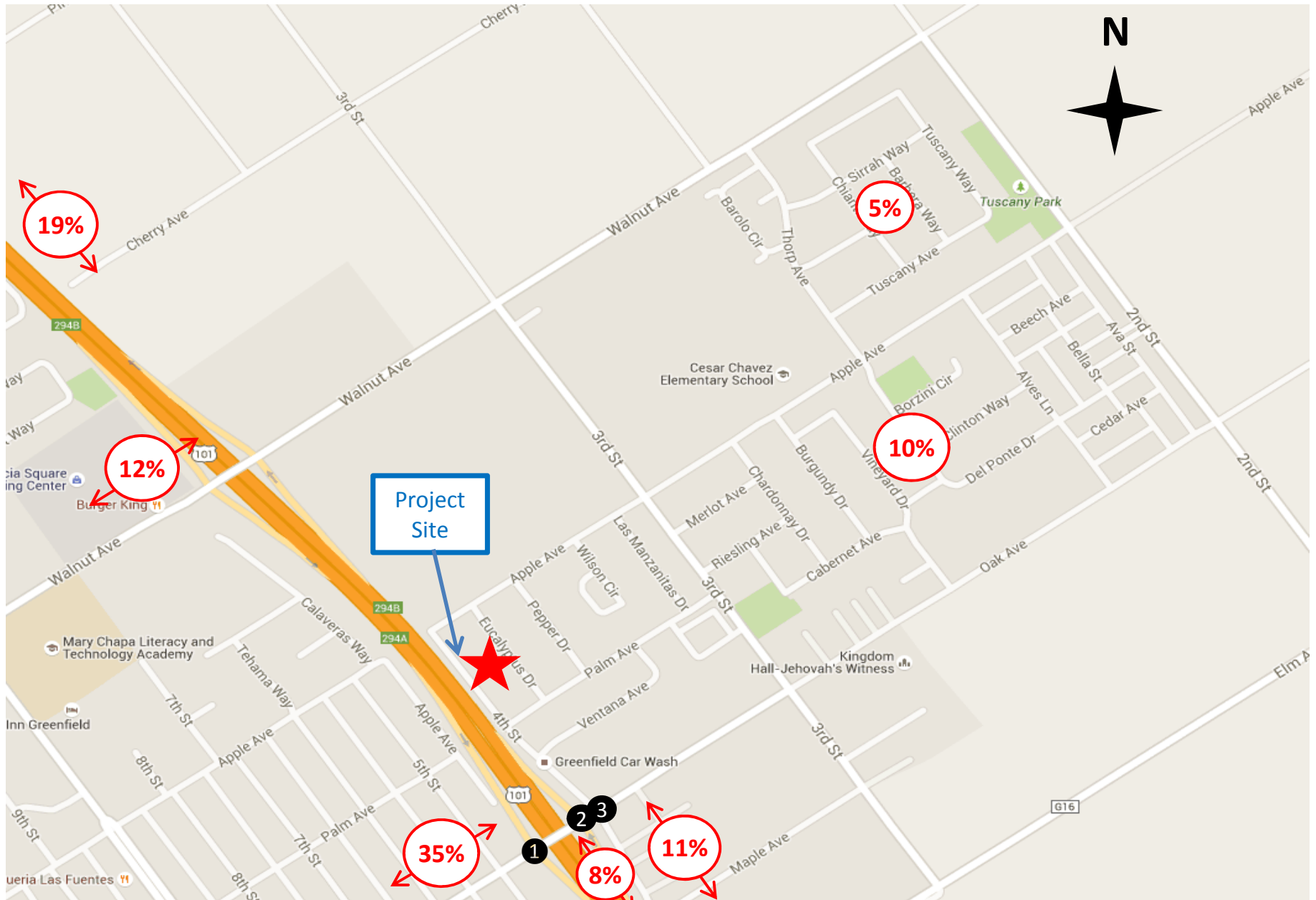
1. L, T, R = Left, Through, Right
2. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound
3. * = Lane configuration reflects actual operations at intersection.

Project Trip Generation

<u>TRIP GENERATION RATES</u>	ITE LAND USE CODE	DAILY TRIP RATE	AM PEAK HOUR				PM PEAK HOUR			
			PEAK HOUR RATE	% OF ADT	% IN	% OUT	PEAK HOUR RATE	% OF ADT	% IN	% OUT
Apartment (per dwelling unit)	220	6.65	0.51	8%	20%	80%	0.62	9%	65%	35%
Residential Condominium / Townhouse (per dwelling unit)	230	5.81	0.44	8%	17%	83%	0.52	9%	67%	33%
Specialty Retail Center (per 1,000 sq. ft.) ²	826	44.32	1.33	3%	60%	40%	2.71	6%	44%	56%
<u>GENERATED TRIPS</u>	PROJECT SIZE	DAILY TRIPS	AM PEAK HOUR				PM PEAK HOUR			
			PEAK HOUR TRIPS	% OF ADT	TRIPS IN	TRIPS OUT	PEAK HOUR TRIPS	% OF ADT	TRIPS IN	TRIPS OUT
<u>Proposed Uses</u>										
Apartments	4 units	27	2	7%	0	2	2	7%	1	1
Townhomes	20 units	116	9	8%	2	7	10	9%	7	3
Retail	16,000 sq. ft.	<u>709</u>	<u>21</u>	3%	<u>13</u>	<u>8</u>	<u>43</u>	6%	<u>19</u>	<u>24</u>
Subtotal (Proposed Uses):		852	32		15	17	55		27	28
Internal Capture: ³		<u>-43</u>	<u>-2</u>		<u>-1</u>	<u>-1</u>	<u>-3</u>		<u>-1</u>	<u>-2</u>
Total Net Project Trip Generation:		809	30		14	16	52		26	26

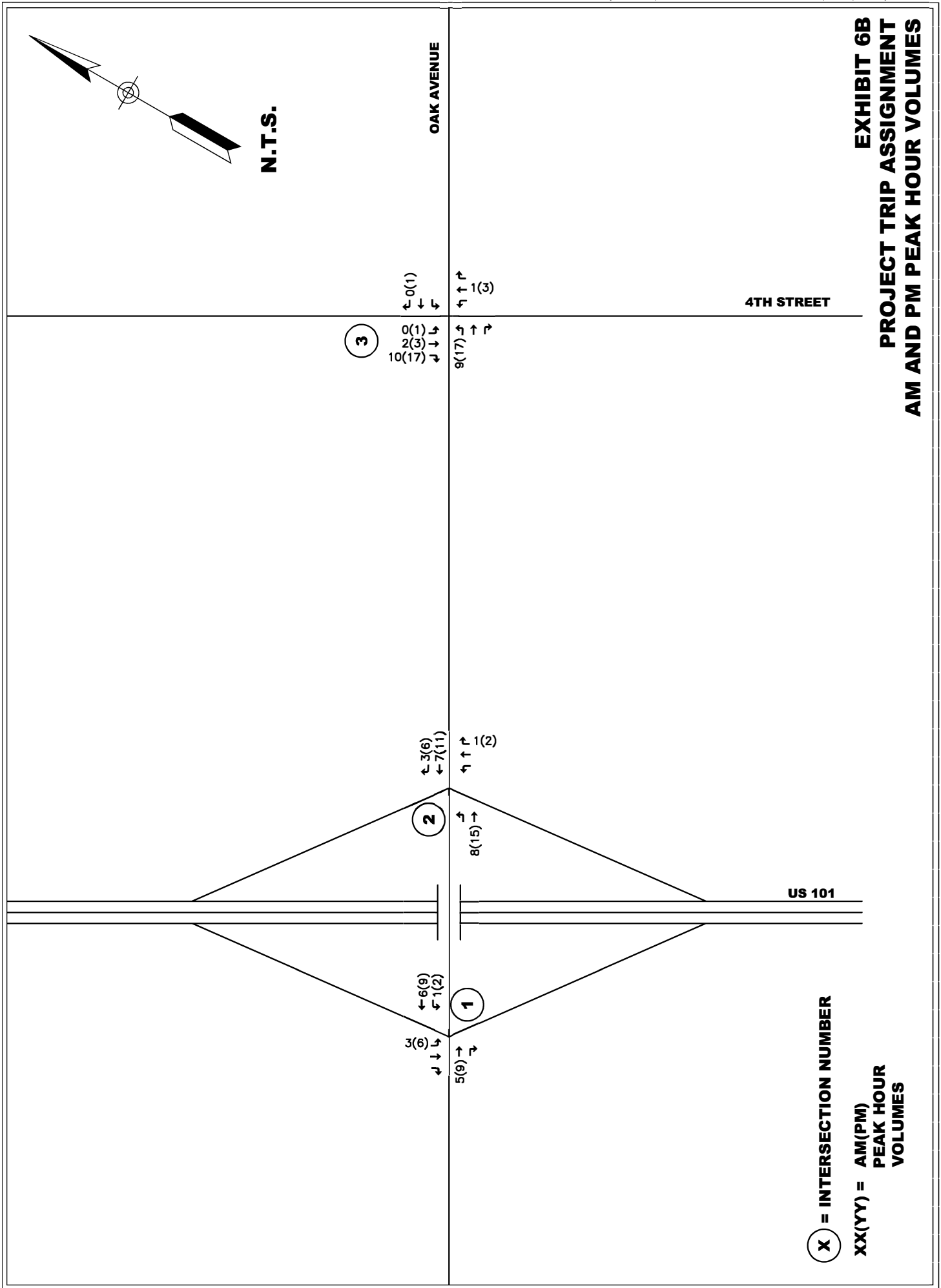
Notes:

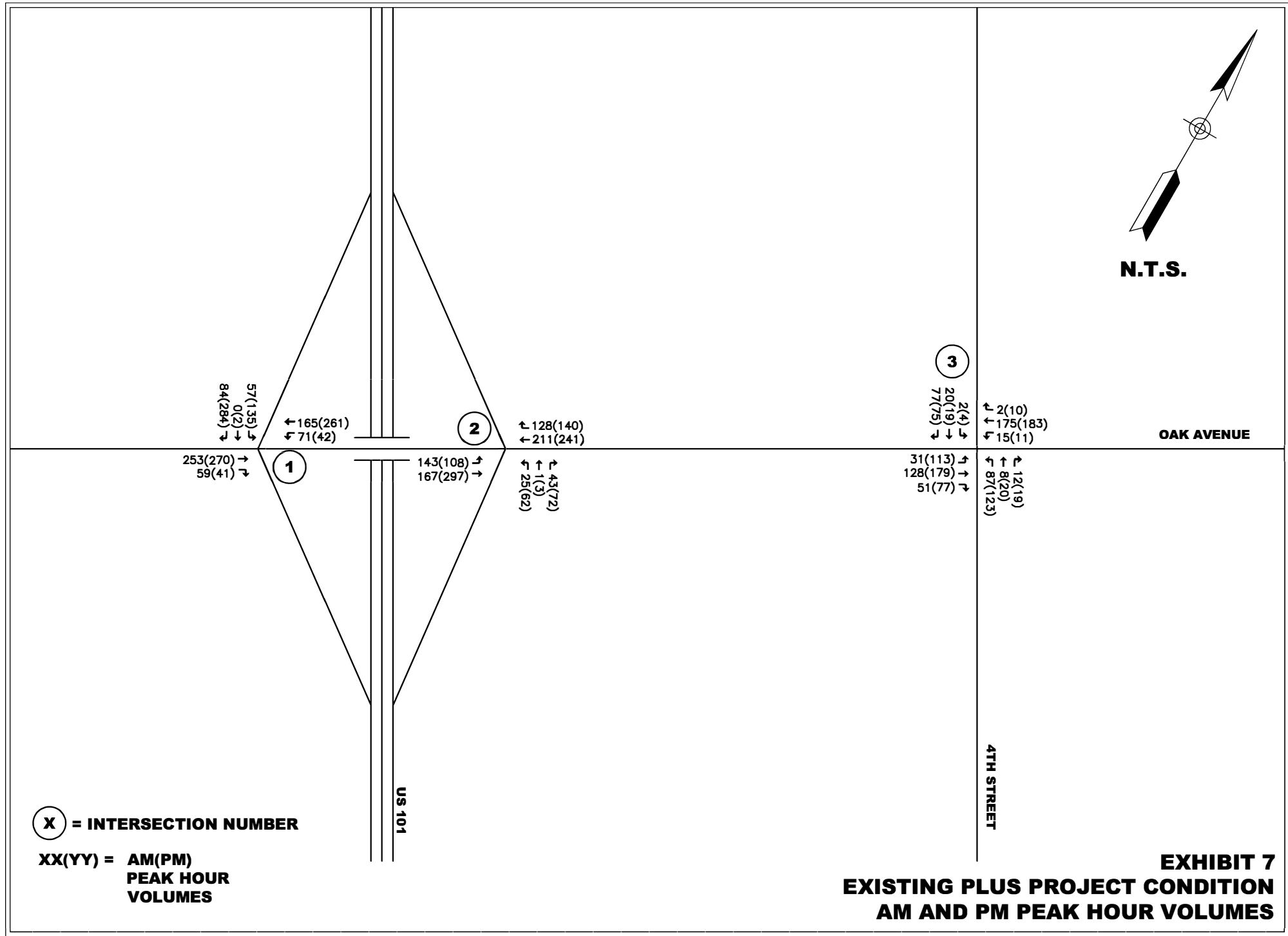
1. Trip generation rates from Institute of Transportation Engineers, "Trip Generation Manual," 9th Edition, 2012, unless otherwise noted.
2. "Trip Generation Manual" does not provide trip rates for Specialty Retail Center during AM. Cited trip rates are from San Diego Association of Governments, "San Diego Traffic Generators," April 2002.
3. Internal Capture rate of 5% represents trip reduction due to interactions between the on-site uses (e.g. a resident of a townhouse that also frequents the retail space).



Map Source: Google Maps, 2015

① = Study Intersection





Approved Projects - Trip Generation										
TRIP GENERATION RATES	ITE LAND USE CODE	DAILY TRIP RATE	AM PEAK HOUR				PM PEAK HOUR			
			PEAK HOUR RATE	% OF ADT	% IN	% OUT	PEAK HOUR RATE	% OF ADT	% IN	% OUT
Single-Family Detatched Housing (per dwelling unit)	210	9.52	0.75	8%	25%	75%	1.00	11%	63%	37%
Apartment (per dwelling unit)	220	6.65	0.51	8%	20%	80%	0.62	9%	65%	35%
GENERATED TRIPS	PROJECT SIZE	DAILY TRIPS	AM PEAK HOUR				PM PEAK HOUR			
			PEAK HOUR TRIPS	% OF ADT	TRIPS IN	TRIPS OUT	PEAK HOUR TRIPS	% OF ADT	TRIPS IN	TRIPS OUT
<u>Approved Projects</u>										
Sandoval Subdivision (Single-Family)	7 units	67	5	7%	1	4	7	10%	4	3
Magnolia Senior Apartments ³	32 units	213	16	8%	3	13	20	9%	13	7
Cambria Park Subdivision (Single-Family)	19 units	181	14	8%	4	10	19	10%	12	7
Terracina Oaks II (Apartments)	48 units	<u>319</u>	<u>24</u>	8%	<u>5</u>	<u>19</u>	<u>30</u>	9%	<u>20</u>	<u>10</u>
Total:		780	59		13	46	76		49	27

Notes:

1. Trip generation rates from Institute of Transportation Engineers, "Trip Generation Manual," 9th Edition, 2012, unless otherwise noted.
2. Approved project list provide by City of Greenfield.
3. Although these are senior apartments (i.e. occupancy restricted to seniors only), trip generation reflects standard apartments, to be conservative.

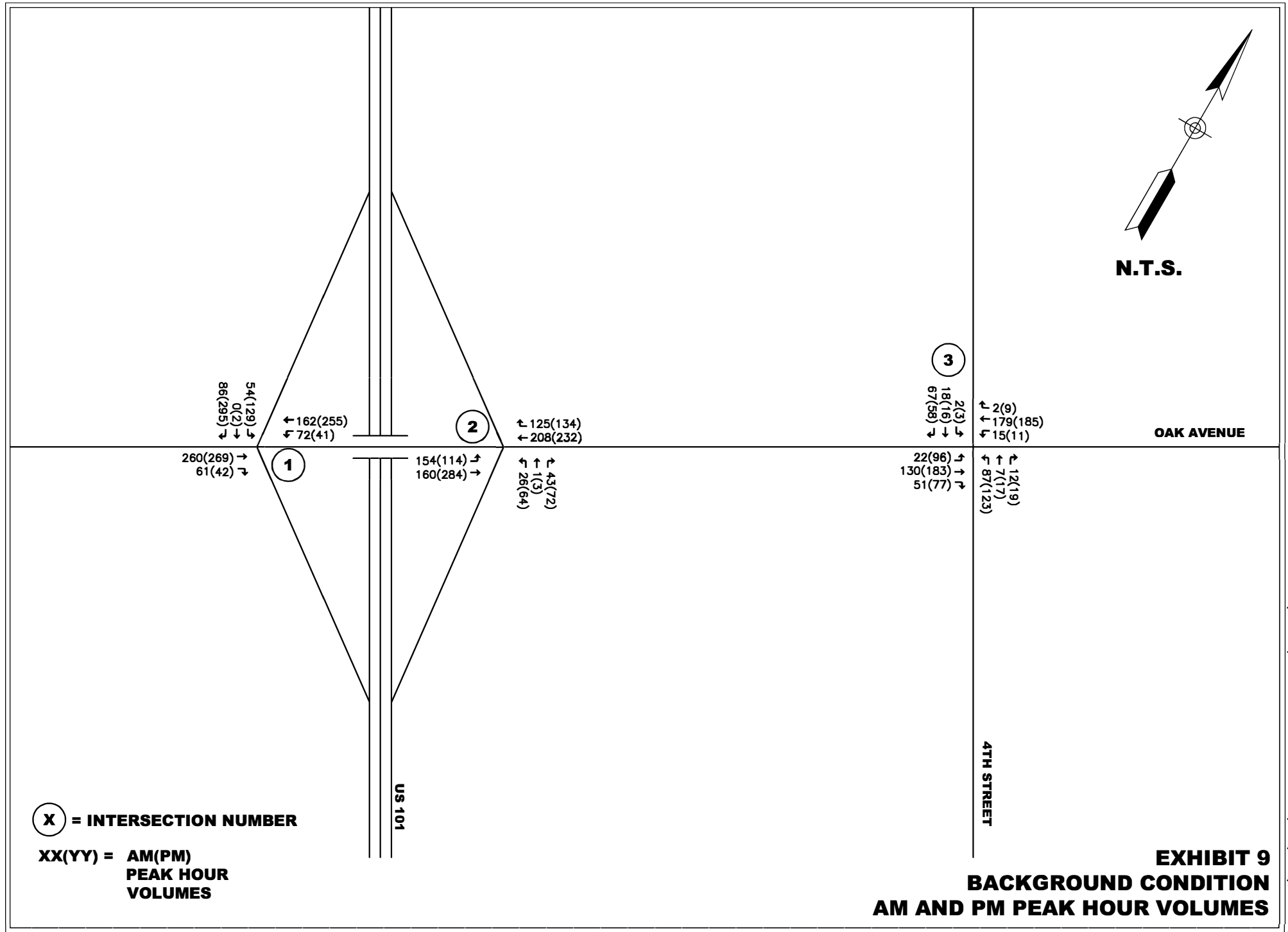
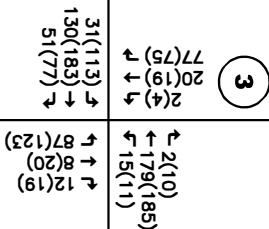
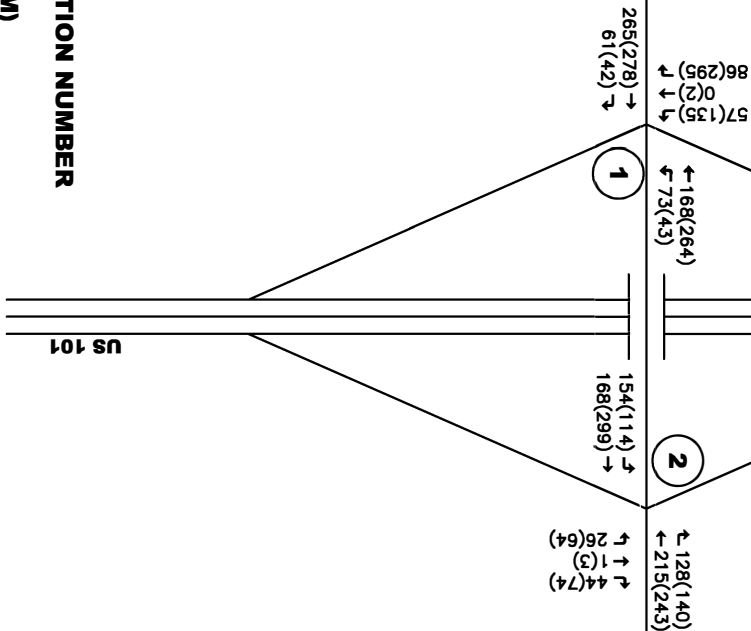


EXHIBIT 9 **BACKGROUND CONDITION** **AM AND PM PEAK HOUR VOLUMES**



Hatch Mott
MacDonald

(X) = INTERSECTION NUMBER
XX(YY) = AM(PM)
PEAK HOUR
VOLUMES



N.T.S.

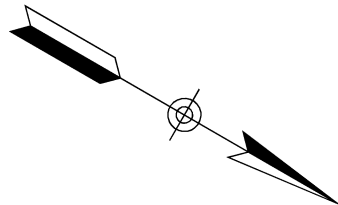


EXHIBIT 10
BACKGROUND PLUS PROJECT CONDITION
AM AND PM PEAK HOUR VOLUMES

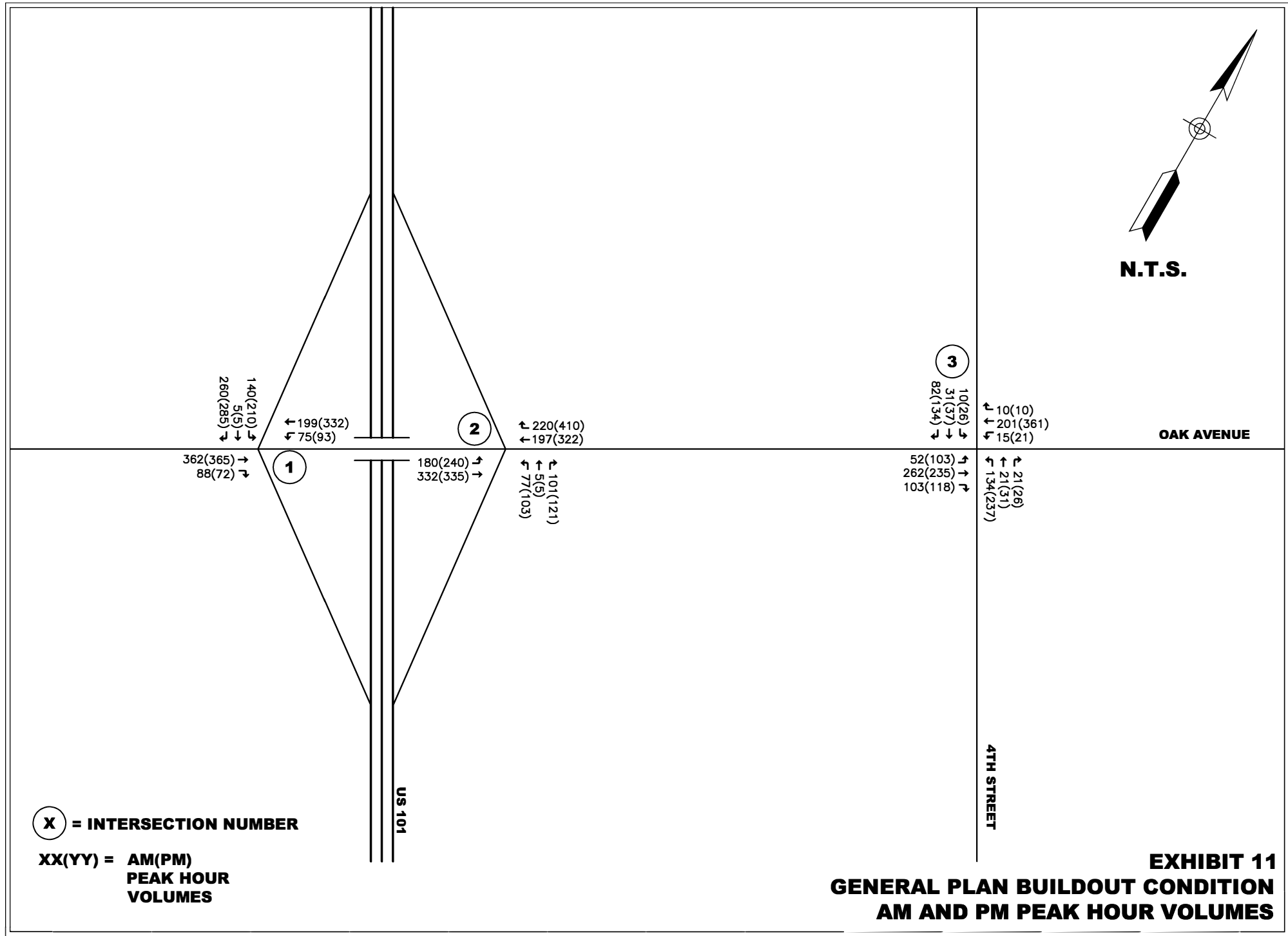


EXHIBIT 11 **GENERAL PLAN BUILDOUT CONDITION** **AM AND PM PEAK HOUR VOLUMES**

APPENDIX A

INTERSECTION TRAFFIC COUNTS

Traffic Data Service

Campbell, CA

(408) 377-2988

tdsbay@cs.com

File Name : 7AM FINAL

Site Code : 00000007

Start Date : 5/27/2015

Page No : 1

Groups Printed- Lights - Buses - Trucks

	US-101 SB OFF-RAMP Southbound					OAK AVE Westbound					US-101 SB ON-RAMP Northbound					OAK AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	7	2	4	2	15	0	17	6	0	23	0	0	0	0	0	5	52	0	0	57	95
07:15 AM	13	0	7	6	26	0	24	7	0	31	0	0	0	4	4	8	67	0	0	75	136
07:30 AM	12	0	14	8	34	0	35	19	0	54	0	0	0	5	5	22	71	0	0	93	186
07:45 AM	24	0	7	5	36	0	61	33	0	94	0	0	0	2	2	23	57	0	0	80	212
Total	56	2	32	21	111	0	137	65	0	202	0	0	0	11	11	58	247	0	0	305	629
08:00 AM	35	0	25	1	61	0	39	11	0	50	0	0	0	0	0	6	50	0	0	56	167
08:15 AM	18	0	8	1	27	0	20	6	0	26	0	0	0	1	1	5	41	0	0	46	100
08:30 AM	12	1	7	0	20	0	11	7	0	18	0	0	0	0	0	4	24	0	0	28	66
08:45 AM	17	0	11	5	33	0	9	9	0	18	0	0	0	0	0	4	26	0	0	30	81
Total	82	1	51	7	141	0	79	33	0	112	0	0	0	1	1	19	141	0	0	160	414
Grand Total	138	3	83	28	252	0	216	98	0	314	0	0	0	12	12	77	388	0	0	465	1043
Apprch %	54.8	1.2	32.9	11.1		0	68.8	31.2	0		0	0	0	100		16.6	83.4	0	0		
Total %	13.2	0.3	8	2.7	24.2	0	20.7	9.4	0	30.1	0	0	0	1.2	1.2	7.4	37.2	0	0	44.6	
Lights	130	3	70	28	231	0	207	89	0	296	0	0	0	12	12	77	383	0	0	460	999
% Lights	94.2	100	84.3	100	91.7	0	95.8	90.8	0	94.3	0	0	0	100	100	100	98.7	0	0	98.9	95.8
Buses	2	0	0	0	2	0	6	1	0	7	0	0	0	0	0	0	3	0	0	3	12
% Buses	1.4	0	0	0	0.8	0	2.8	1	0	2.2	0	0	0	0	0	0	0.8	0	0	0.6	1.2
Trucks	6	0	13	0	19	0	3	8	0	11	0	0	0	0	0	0	2	0	0	2	32
% Trucks	4.3	0	15.7	0	7.5	0	1.4	8.2	0	3.5	0	0	0	0	0	0	0.5	0	0	0.4	3.1

	US-101 SB OFF-RAMP Southbound				OAK AVE Westbound				US-101 SB ON-RAMP Northbound				OAK AVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	13	0	7	20	0	24	7	31	0	0	0	0	8	67	0	75	126
07:30 AM	12	0	14	26	0	35	19	54	0	0	0	0	22	71	0	93	173
07:45 AM	24	0	7	31	0	61	33	94	0	0	0	0	23	57	0	80	205
08:00 AM	35	0	25	60	0	39	11	50	0	0	0	0	6	50	0	56	166
Total Volume	84	0	53	137	0	159	70	229	0	0	0	0	59	245	0	304	670
% App. Total	61.3	0	38.7		0	69.4	30.6		0	0	0		19.4	80.6	0		
PHF	.600	.000	.530	.571	.000	.652	.530	.609	.000	.000	.000	.000	.641	.863	.000	.817	.817

Traffic Data Service

Campbell, CA

(408) 377-2988

tdsbay@cs.com

File Name : 7PM FINAL

Site Code : 00000007

Start Date : 5/27/2015

Page No : 1

Groups Printed- Lights - Buses - Trucks

	US-101 SB OFF-RAMP Southbound					OAK AVE Westbound					US-101 SB ON-RAMP Northbound					OAK AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	68	1	27	8	104	0	49	21	0	70	0	0	0	1	1	11	51	0	0	62	237
04:15 PM	55	0	22	8	85	0	46	10	0	56	0	0	0	1	1	8	54	0	0	62	204
04:30 PM	57	0	33	2	92	0	55	8	0	63	0	0	0	3	3	8	63	0	0	71	229
04:45 PM	86	2	21	0	109	0	73	14	0	87	0	0	0	2	2	11	87	0	0	98	296
Total	266	3	103	18	390	0	223	53	0	276	0	0	0	7	7	38	255	0	0	293	966
05:00 PM	71	0	47	6	124	0	66	9	0	75	0	0	0	1	1	13	59	0	0	72	272
05:15 PM	70	0	28	2	100	0	58	9	0	67	0	0	0	0	0	9	52	0	0	61	228
05:30 PM	51	0	28	4	83	0	59	9	0	68	0	0	0	2	2	6	68	0	0	74	227
05:45 PM	64	0	28	6	98	0	63	8	0	71	0	0	0	0	0	7	49	0	0	56	225
Total	256	0	131	18	405	0	246	35	0	281	0	0	0	3	3	35	228	0	0	263	952
Grand Total	522	3	234	36	795	0	469	88	0	557	0	0	0	10	10	73	483	0	0	556	1918
Apprch %	65.7	0.4	29.4	4.5		0	84.2	15.8	0		0	0	0	100		13.1	86.9	0	0		
Total %	27.2	0.2	12.2	1.9	41.4	0	24.5	4.6	0	29	0	0	0	0.5	0.5	3.8	25.2	0	0	29	
Lights	514	3	214	36	767	0	462	87	0	549	0	0	0	10	10	71	472	0	0	543	1869
% Lights	98.5	100	91.5	100	96.5	0	98.5	98.9	0	98.6	0	0	0	100	100	97.3	97.7	0	0	97.7	97.4
Buses	2	0	0	0	2	0	3	0	0	3	0	0	0	0	0	0	5	0	0	5	10
% Buses	0.4	0	0	0	0.3	0	0.6	0	0	0.5	0	0	0	0	0	0	1	0	0	0.9	0.5
Trucks	6	0	20	0	26	0	4	1	0	5	0	0	0	0	0	2	6	0	0	8	39
% Trucks	1.1	0	8.5	0	3.3	0	0.9	1.1	0	0.9	0	0	0	0	0	2.7	1.2	0	0	1.4	2

	US-101 SB OFF-RAMP Southbound				OAK AVE Westbound				US-101 SB ON-RAMP Northbound				OAK AVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	57	0	33	90	0	55	8	63	0	0	0	0	8	63	0	71	224
04:45 PM	86	2	21	109	0	73	14	87	0	0	0	0	11	87	0	98	294
05:00 PM	71	0	47	118	0	66	9	75	0	0	0	0	13	59	0	72	265
05:15 PM	70	0	28	98	0	58	9	67	0	0	0	0	9	52	0	61	226
Total Volume	284	2	129	415	0	252	40	292	0	0	0	0	41	261	0	302	1009
% App. Total	68.4	0.5	31.1		0	86.3	13.7		0	0	0		13.6	86.4	0		
PHF	.826	.250	.686	.879	.000	.863	.714	.839	.000	.000	.000	.000	.788	.750	.000	.770	.858

Traffic Data Service

Campbell, CA

(408) 377-2988

tdsbay@cs.com

File Name : 8AM FINAL

Site Code : 00000008

Start Date : 5/27/2015

Page No : 1

Groups Printed- Lights - Buses - Trucks

	US-101 NB ON-RAMP Southbound					OAK AVE Westbound					US-101 NB OFF-RAMP Northbound					OAK AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	1	1	38	14	0	0	52	8	0	8	0	16	0	17	39	0	56	125
07:15 AM	0	0	0	6	6	36	22	0	0	58	1	0	7	4	12	0	24	52	0	76	152
07:30 AM	0	0	0	4	4	50	47	0	0	97	8	0	5	2	15	0	43	41	0	84	200
07:45 AM	0	0	0	9	9	21	85	0	0	106	22	0	8	0	30	0	39	23	0	62	207
Total	0	0	0	20	20	145	168	0	0	313	39	0	28	6	73	0	123	155	0	278	684
08:00 AM	0	0	0	1	1	18	45	0	0	63	9	1	4	0	14	0	47	27	0	74	152
08:15 AM	0	0	0	1	1	17	19	0	0	36	3	0	2	1	6	0	26	19	0	45	88
08:30 AM	0	0	0	0	0	13	18	0	0	31	2	0	5	0	7	0	17	19	0	36	74
08:45 AM	0	0	0	5	5	15	14	0	0	29	5	0	4	0	9	0	17	21	0	38	81
Total	0	0	0	7	7	63	96	0	0	159	19	1	15	1	36	0	107	86	0	193	395
Grand Total	0	0	0	27	27	208	264	0	0	472	58	1	43	7	109	0	230	241	0	471	1079
Apprch %	0	0	0	100		44.1	55.9	0	0		53.2	0.9	39.4	6.4		0	48.8	51.2	0		
Total %	0	0	0	2.5	2.5	19.3	24.5	0	0	43.7	5.4	0.1	4	0.6	10.1	0	21.3	22.3	0	43.7	
Lights	0	0	0	27	27	187	250	0	0	437	51	1	41	7	100	0	215	236	0	451	1015
% Lights	0	0	0	100	100	89.9	94.7	0	0	92.6	87.9	100	95.3	100	91.7	0	93.5	97.9	0	95.8	94.1
Buses	0	0	0	0	0	3	6	0	0	9	1	0	1	0	2	0	3	1	0	4	15
% Buses	0	0	0	0	0	1.4	2.3	0	0	1.9	1.7	0	2.3	0	1.8	0	1.3	0.4	0	0.8	1.4
Trucks	0	0	0	0	0	18	8	0	0	26	6	0	1	0	7	0	12	4	0	16	49
% Trucks	0	0	0	0	0	8.7	3	0	0	5.5	10.3	0	2.3	0	6.4	0	5.2	1.7	0	3.4	4.5

	US-101 NB ON-RAMP Southbound					OAK AVE Westbound				US-101 NB OFF-RAMP Northbound				OAK AVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 07:15 AM																		
07:15 AM	0	0	0	0	36	22	0	58	1	0	7	8	0	24	52	76	142	
07:30 AM	0	0	0	0	50	47	0	97	8	0	5	13	0	43	41	84	194	
07:45 AM	0	0	0	0	21	85	0	106	22	0	8	30	0	39	23	62	198	
08:00 AM	0	0	0	0	18	45	0	63	9	1	4	14	0	47	27	74	151	
Total Volume	0	0	0	0	125	199	0	324	40	1	24	65	0	153	143	296	685	
% App. Total	0	0	0		38.6	61.4	0		61.5	1.5	36.9		0	51.7	48.3			
PHF	.000	.000	.000	.000	.625	.585	.000	.764	.455	.250	.750	.542	.000	.814	.688	.881	.865	

Traffic Data Service

Campbell, CA

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File Name : 8PM FINAL

Site Code : 00000008

Start Date : 5/27/2015

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Groups Printed- Lights - Buses - Trucks

	US-101 NB ON-RAMP Southbound					OAK AVE Westbound					US-101 NB OFF-RAMP Northbound					OAK AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	5	5	20	58	0	0	78	13	0	9	1	23	0	65	15	0	80	186
04:15 PM	0	0	0	2	2	20	49	0	2	71	8	0	5	0	13	0	56	18	0	74	160
04:30 PM	0	0	0	0	0	25	48	0	0	73	19	0	13	0	32	0	70	24	0	94	199
04:45 PM	0	0	0	1	1	36	60	0	0	96	12	1	22	5	40	0	71	37	0	108	245
Total	0	0	0	8	8	101	215	0	2	318	52	1	49	6	108	0	262	94	0	356	790
05:00 PM	0	0	0	4	4	34	53	0	0	87	24	1	15	1	41	0	79	22	0	101	233
05:15 PM	0	0	0	0	0	32	55	0	0	87	24	1	12	2	39	0	60	21	0	81	207
05:30 PM	0	0	0	2	2	32	56	0	0	88	10	0	11	0	21	0	72	28	1	101	212
05:45 PM	0	0	0	6	6	39	64	0	0	103	7	0	7	0	14	0	58	18	1	77	200
Total	0	0	0	12	12	137	228	0	0	365	65	2	45	3	115	0	269	89	2	360	852
Grand Total	0	0	0	20	20	238	443	0	2	683	117	3	94	9	223	0	531	183	2	716	1642
Apprch %	0	0	0	100		34.8	64.9	0	0.3		52.5	1.3	42.2	4		0	74.2	25.6	0.3		
Total %	0	0	0	1.2	1.2	14.5	27	0	0.1	41.6	7.1	0.2	5.7	0.5	13.6	0	32.3	11.1	0.1	43.6	
Lights	0	0	0	20	20	218	435	0	2	655	114	2	93	9	218	0	508	174	2	684	1577
% Lights	0	0	0	100	100	91.6	98.2	0	100	95.9	97.4	66.7	98.9	100	97.8	0	95.7	95.1	100	95.5	96
Buses	0	0	0	0	0	1	2	0	0	3	0	0	1	0	1	0	0	5	0	5	9
% Buses	0	0	0	0	0	0.4	0.5	0	0	0.4	0	0	1.1	0	0.4	0	0	2.7	0	0.7	0.5
Trucks	0	0	0	0	0	19	6	0	0	25	3	1	0	0	4	0	23	4	0	27	56
% Trucks	0	0	0	0	0	8	1.4	0	0	3.7	2.6	33.3	0	0	1.8	0	4.3	2.2	0	3.8	3.4

	US-101 NB ON-RAMP Southbound					OAK AVE Westbound					US-101 NB OFF-RAMP Northbound					OAK AVE Eastbound					
Start Time	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	0		36	60	0	96		12	1	22	35		0	71	37	108		239
05:00 PM	0	0	0	0		34	53	0	87		24	1	15	40		0	79	22	101		228
05:15 PM	0	0	0	0		32	55	0	87		24	1	12	37		0	60	21	81		205
05:30 PM	0	0	0	0		32	56	0	88		10	0	11	21		0	72	28	100		209
Total Volume	0	0	0	0		134	224	0	358		70	3	60	133		0	282	108	390		881
% App. Total	0	0	0			37.4	62.6	0			52.6	2.3	45.1			0	72.3	27.7			
PHF	.000	.000	.000	.000		.931	.933	.000	.932		.729	.750	.682	.831		.000	.892	.730	.903		.922

Traffic Data Service

Campbell, CA

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File Name : 9AM FINAL

Site Code : 00000009

Start Date : 5/27/2015

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Groups Printed- Lights - Buses - Trucks

	4TH ST Southbound					OAK AVE Westbound					4TH ST Northbound					OAK AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	15	3	0	2	20	1	15	0	2	18	0	1	27	2	30	10	19	2	0	31	99
07:15 AM	12	0	2	3	17	1	24	1	0	26	1	0	16	2	19	6	14	2	0	22	84
07:30 AM	17	7	0	3	27	0	41	6	2	49	2	1	38	2	43	10	34	6	0	50	169
07:45 AM	21	8	0	7	36	0	63	6	0	69	2	1	13	0	16	11	45	8	1	65	186
Total	65	18	2	15	100	2	143	13	4	162	5	3	94	6	108	37	112	18	1	168	538
08:00 AM	15	3	0	3	21	1	40	2	0	43	7	5	17	0	29	24	35	6	0	65	158
08:15 AM	3	1	0	0	4	0	14	0	0	14	1	2	9	1	13	8	13	3	0	24	55
08:30 AM	8	0	0	0	8	0	18	2	0	20	1	1	7	0	9	6	9	4	0	19	56
08:45 AM	5	2	0	4	11	0	10	1	2	13	1	0	8	0	9	7	11	2	0	20	53
Total	31	6	0	7	44	1	82	5	2	90	10	8	41	1	60	45	68	15	0	128	322
Grand Total	96	24	2	22	144	3	225	18	6	252	15	11	135	7	168	82	180	33	1	296	860
Apprch %	66.7	16.7	1.4	15.3		1.2	89.3	7.1	2.4		8.9	6.5	80.4	4.2		27.7	60.8	11.1	0.3		
Total %	11.2	2.8	0.2	2.6	16.7	0.3	26.2	2.1	0.7	29.3	1.7	1.3	15.7	0.8	19.5	9.5	20.9	3.8	0.1	34.4	
Lights	92	24	2	22	140	3	216	18	6	243	15	11	115	7	148	70	174	33	1	278	809
% Lights	95.8	100	100	100	97.2	100	96	100	100	96.4	100	100	85.2	100	88.1	85.4	96.7	100	100	93.9	94.1
Buses	3	0	0	0	3	0	6	0	0	6	0	0	0	0	0	0	4	0	0	4	13
% Buses	3.1	0	0	0	2.1	0	2.7	0	0	2.4	0	0	0	0	0	0	2.2	0	0	1.4	1.5
Trucks	1	0	0	0	1	0	3	0	0	3	0	0	20	0	20	12	2	0	0	14	38
% Trucks	1	0	0	0	0.7	0	1.3	0	0	1.2	0	0	14.8	0	11.9	14.6	1.1	0	0	4.7	4.4

	4TH ST Southbound				OAK AVE Westbound				4TH ST Northbound				OAK AVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	12	0	2	14	1	24	1	26	1	0	16	17	6	14	2	22	79
07:30 AM	17	7	0	24	0	41	6	47	2	1	38	41	10	34	6	50	162
07:45 AM	21	8	0	29	0	63	6	69	2	1	13	16	11	45	8	64	178
08:00 AM	15	3	0	18	1	40	2	43	7	5	17	29	24	35	6	65	155
Total Volume	65	18	2	85	2	168	15	185	12	7	84	103	51	128	22	201	574
% App. Total	76.5	21.2	2.4		1.1	90.8	8.1		11.7	6.8	81.6		25.4	63.7	10.9		
PHF	.774	.563	.250	.733	.500	.667	.625	.670	.429	.350	.553	.628	.531	.711	.688	.773	.806

Traffic Data Service

Campbell, CA

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File Name : 9PM FINAL

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Groups Printed- Lights - Buses - Trucks

	4TH ST Southbound					OAK AVE Westbound					4TH ST Northbound					OAK AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	17	2	0	1	20	1	35	0	0	36	1	3	21	0	25	19	42	20	0	81	162
04:15 PM	11	1	1	4	17	0	33	0	0	33	3	2	25	0	30	16	32	12	2	62	142
04:30 PM	16	1	0	0	17	3	36	2	0	41	3	3	21	0	27	24	46	19	0	89	174
04:45 PM	15	3	1	4	23	3	45	3	0	51	3	6	32	3	44	14	49	24	0	87	205
Total	59	7	2	9	77	7	149	5	0	161	10	14	99	3	126	73	169	75	2	319	683
05:00 PM	13	7	0	2	22	3	45	4	1	53	8	1	25	1	35	24	48	33	0	105	215
05:15 PM	11	4	2	0	17	0	45	2	1	48	6	6	31	2	45	19	44	18	0	81	191
05:30 PM	16	2	0	2	20	3	39	2	0	44	2	4	29	0	35	20	39	21	0	80	179
05:45 PM	16	5	1	5	27	0	55	1	0	56	4	3	28	0	35	17	44	7	0	68	186
Total	56	18	3	9	86	6	184	9	2	201	20	14	113	3	150	80	175	79	0	334	771
Grand Total	115	25	5	18	163	13	333	14	2	362	30	28	212	6	276	153	344	154	2	653	1454
Apprch %	70.6	15.3	3.1	11		3.6	92	3.9	0.6		10.9	10.1	76.8	2.2		23.4	52.7	23.6	0.3		
Total %	7.9	1.7	0.3	1.2	11.2	0.9	22.9	1	0.1	24.9	2.1	1.9	14.6	0.4	19	10.5	23.7	10.6	0.1	44.9	
Lights	114	25	5	18	162	13	323	14	2	352	30	26	199	6	261	139	338	154	2	633	1408
% Lights	99.1	100	100	100	99.4	100	97	100	100	97.2	100	92.9	93.9	100	94.6	90.8	98.3	100	100	96.9	96.8
Buses	0	0	0	0	0	0	3	0	0	3	0	1	0	0	1	0	0	0	0	0	4
% Buses	0	0	0	0	0	0	0.9	0	0	0.8	0	3.6	0	0	0.4	0	0	0	0	0	0.3
Trucks	1	0	0	0	1	0	7	0	0	7	0	1	13	0	14	14	6	0	0	20	42
% Trucks	0.9	0	0	0	0.6	0	2.1	0	0	1.9	0	3.6	6.1	0	5.1	9.2	1.7	0	0	3.1	2.9

	4TH ST Southbound				OAK AVE Westbound				4TH ST Northbound				OAK AVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	15	3	1	19	3	45	3	51	3	6	32	41	14	49	24	87	198
05:00 PM	13	7	0	20	3	45	4	52	8	1	25	34	24	48	33	105	211
05:15 PM	11	4	2	17	0	45	2	47	6	6	31	43	19	44	18	81	188
05:30 PM	16	2	0	18	3	39	2	44	2	4	29	35	20	39	21	80	177
Total Volume	55	16	3	74	9	174	11	194	19	17	117	153	77	180	96	353	774
% App. Total	74.3	21.6	4.1		4.6	89.7	5.7		12.4	11.1	76.5		21.8	51	27.2		
PHF	.859	.571	.375	.925	.750	.967	.688	.933	.594	.708	.914	.890	.802	.918	.727	.840	.917

APPENDIX B

LEVEL OF SERVICE CALCULATIONS

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	248	59	70	159	0	0	0	0	54	0	84
Conflicting Peds, #/hr	0	0	11	11	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	-	-	50	-	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	8	8	8
Mvmt Flow	0	302	72	85	194	0	0	0	0	66	0	102
Major/Minor	Major1			Major2			Minor2					
Conflicting Flow All	194	0	0	302	0	0	667	667	205			
Stage 1	-	-	-	-	-	-	365	365	-			
Stage 2	-	-	-	-	-	-	302	302	-			
Critical Hdwy	4.12	-	-	4.13	-	-	6.48	6.58	6.28			
Critical Hdwy Stg 1	-	-	-	-	-	-	5.48	5.58	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	5.48	5.58	-			
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.572	4.072	3.372			
Pot Cap-1 Maneuver	1379	-	-	1253	-	-	415	372	821			
Stage 1	-	-	-	-	-	-	689	613	-			
Stage 2	-	-	-	-	-	-	737	654	-			
Platoon blocked, %	-	-	-	-	-	-						
Mov Cap-1 Maneuver	1366	-	-	1242	-	-	383	0	813			
Mov Cap-2 Maneuver	-	-	-	-	-	-	383	0	-			
Stage 1	-	-	-	-	-	-	636	0	-			
Stage 2	-	-	-	-	-	-	737	0	-			
Approach	EB			WB			SB					
HCM Control Delay, s	0			2.5			12.5					
HCM LOS							B					
Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2				
Capacity (veh/h)	1366	-	-	1242	-	-	383	813				
HCM Lane V/C Ratio	-	-	-	0.069	-	-	0.172	0.126				
HCM Control Delay (s)	0	-	-	8.1	0	-	16.3	10.1				
HCM Lane LOS	A	-	-	A	A	-	C	B				
HCM 95th %tile Q(veh)	0	-	-	0.2	-	-	0.6	0.4				

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	143	159	0	0	204	125	25	1	42	0	0	0
Conflicting Peds, #/hr	20	0	0	0	0	20	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	-	-	-	-	-	0	-	-	90	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	4	4	4	3	3	3	6	6	6	2	2	2
Mvmt Flow	164	183	0	0	234	144	29	1	48	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	234	0	0	183	0	0	745	745	203			
Stage 1	-	-	-	-	-	-	511	511	-			
Stage 2	-	-	-	-	-	-	234	234	-			
Critical Hdwy	4.14	-	-	4.13	-	-	6.46	6.56	6.26			
Critical Hdwy Stg 1	-	-	-	-	-	-	5.46	5.56	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	5.46	5.56	-			
Follow-up Hdwy	2.236	-	-	2.227	-	-	3.554	4.054	3.354			
Pot Cap-1 Maneuver	1322	-	-	1386	-	-	376	338	828			
Stage 1	-	-	-	-	-	-	594	530	-			
Stage 2	-	-	-	-	-	-	796	704	-			
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1300	-	-	1363	-	-	318	0	814			
Mov Cap-2 Maneuver	-	-	-	-	-	-	318	0	-			
Stage 1	-	-	-	-	-	-	511	0	-			
Stage 2	-	-	-	-	-	-	783	0	-			
Approach	EB			WB			NB					
HCM Control Delay, s	3.9			0			12.7					
HCM LOS							B					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR				
Capacity (veh/h)	318	814	1300	-	-	1363	-	-				
HCM Lane V/C Ratio	0.094	0.059	0.126	-	-	-	-	-				
HCM Control Delay (s)	17.5	9.7	8.2	0	-	0	-	-				
HCM Lane LOS	C	A	A	A	-	A	-	-				
HCM 95th %tile Q(veh)	0.3	0.2	0.4	-	-	0	-	-				

Intersection												
Int Delay, s/veh	5.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	22	128	51	15	175	2	87	7	12	2	18	67
Conflicting Peds, #/hr	16	0	4	4	0	16	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	11	11	11	2	2	2	7	7	7	2	2	2
Mvmt Flow	27	158	63	19	216	2	107	9	15	2	22	83
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	221	0	0	223	0	0	555	504	208	506	533	235
Stage 1	-	-	-	-	-	-	246	246	-	256	256	-
Stage 2	-	-	-	-	-	-	309	258	-	250	277	-
Critical Hdwy	4.21	-	-	4.12	-	-	7.17	6.57	6.27	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.57	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.57	-	6.12	5.52	-
Follow-up Hdwy	2.299	-	-	2.218	-	-	3.563	4.063	3.363	3.518	4.018	3.318
Pot Cap-1 Maneuver	1297	-	-	1346	-	-	435	463	820	477	453	804
Stage 1	-	-	-	-	-	-	747	694	-	749	696	-
Stage 2	-	-	-	-	-	-	691	685	-	754	681	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1280	-	-	1328	-	-	358	443	808	441	434	792
Mov Cap-2 Maneuver	-	-	-	-	-	-	358	443	-	441	434	-
Stage 1	-	-	-	-	-	-	728	676	-	730	684	-
Stage 2	-	-	-	-	-	-	581	673	-	704	664	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			0.6			18.4			11.4		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	363	808	1280	-	-	1328	-	-	666			
HCM Lane V/C Ratio	0.32	0.018	0.021	-	-	0.014	-	-	0.161			
HCM Control Delay (s)	19.5	9.5	7.9	0	-	7.7	0	-	11.4			
HCM Lane LOS	C	A	A	A	-	A	A	-	B			
HCM 95th %tile Q(veh)	1.4	0.1	0.1	-	-	0	-	-	0.6			

Intersection												
Int Delay, s/veh	6.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	261	41	40	252	0	0	0	0	129	2	284
Conflicting Peds, #/hr	0	0	6	6	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	-	-	50	-	-	-	-	-	-	-	-	25
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	4	4	4
Mvmt Flow	0	303	48	47	293	0	0	0	0	150	2	330
Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	293	0	0	303	0	0				689	689	299
Stage 1	-	-	-	-	-	-				386	386	-
Stage 2	-	-	-	-	-	-				303	303	-
Critical Hdwy	4.12	-	-	4.12	-	-				6.44	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-				5.44	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.44	5.54	-
Follow-up Hdwy	2.218	-	-	2.218	-	-				3.536	4.036	3.336
Pot Cap-1 Maneuver	1269	-	-	1258	-	-				409	366	736
Stage 1	-	-	-	-	-	-				683	607	-
Stage 2	-	-	-	-	-	-				745	660	-
Platoon blocked, %												
Mov Cap-1 Maneuver	1263	-	-	1252	-	-				391	0	732
Mov Cap-2 Maneuver	-	-	-	-	-	-				391	0	-
Stage 1	-	-	-	-	-	-				652	0	-
Stage 2	-	-	-	-	-	-				745	0	-
Approach	EB			WB						SB		
HCM Control Delay, s	0			1.1						15.8		
HCM LOS										C		
Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2				
Capacity (veh/h)	1263	-	-	1252	-	-	391	732				
HCM Lane V/C Ratio	-	-	-	0.037	-	-	0.39	0.451				
HCM Control Delay (s)	0	-	-	8	0	-	20	13.9				
HCM Lane LOS	A	-	-	A	A	-	C	B				
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	1.8	2.4				

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	108	282	0	0	230	134	62	3	70	0	0	0
Conflicting Peds, #/hr	7	0	0	0	0	7	1	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	-	-	-	-	-	0	-	-	90	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	4	4	4	2	2	2	2	2	2
Mvmt Flow	117	307	0	0	250	146	67	3	76	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	250	0	0	308	0	0	792	792	315			
Stage 1	-	-	-	-	-	-	542	542	-			
Stage 2	-	-	-	-	-	-	250	250	-			
Critical Hdwy	4.15	-	-	4.14	-	-	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	2.245	-	-	2.236	-	-	3.518	4.018	3.318			
Pot Cap-1 Maneuver	1298	-	-	1241	-	-	358	322	725			
Stage 1	-	-	-	-	-	-	583	520	-			
Stage 2	-	-	-	-	-	-	792	700	-			
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1290	-	-	1234	-	-	317	0	720			
Mov Cap-2 Maneuver	-	-	-	-	-	-	317	0	-			
Stage 1	-	-	-	-	-	-	519	0	-			
Stage 2	-	-	-	-	-	-	787	0	-			
Approach	EB			WB			NB					
HCM Control Delay, s	2.2			0			14.9					
HCM LOS	B											
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR				
Capacity (veh/h)	317	720	1290	-	-	1234	-	-				
HCM Lane V/C Ratio	0.223	0.106	0.091	-	-	-	-	-				
HCM Control Delay (s)	19.6	10.6	8.1	0	-	0	-	-				
HCM Lane LOS	C	B	A	A	-	A	-	-				
HCM 95th %tile Q(veh)	0.8	0.4	0.3	-	-	0	-	-				

Intersection												
Int Delay, s/veh	8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	96	179	77	11	183	9	123	17	19	3	16	58
Conflicting Peds, #/hr	8	0	6	6	0	8	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	104	195	84	12	199	10	134	18	21	3	17	63
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	211	0	0	280	0	0	717	682	246	686	719	214
Stage 1	-	-	-	-	-	-	447	447	-	230	230	-
Stage 2	-	-	-	-	-	-	270	235	-	456	489	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1360	-	-	1283	-	-	345	372	793	362	354	826
Stage 1	-	-	-	-	-	-	591	573	-	773	714	-
Stage 2	-	-	-	-	-	-	736	710	-	584	549	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1351	-	-	1274	-	-	279	333	786	309	317	819
Mov Cap-2 Maneuver	-	-	-	-	-	-	279	333	-	309	317	-
Stage 1	-	-	-	-	-	-	536	519	-	701	705	-
Stage 2	-	-	-	-	-	-	651	701	-	495	498	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.2			0.4			28.6			12.1		
HCM LOS							D			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	285	786	1351	-	-	1274	-	-	588			
HCM Lane V/C Ratio	0.534	0.026	0.077	-	-	0.009	-	-	0.142			
HCM Control Delay (s)	31.2	9.7	7.9	0	-	7.9	0	-	12.1			
HCM Lane LOS	D	A	A	A	-	A	A	-	B			
HCM 95th %tile Q(veh)	2.9	0.1	0.3	-	-	0	-	-	0.5			

Intersection												
Int Delay, s/veh	3.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	253	59	71	165	0	0	0	0	57	0	84
Conflicting Peds, #/hr	0	0	11	11	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	-	-	50	-	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	8	8	8
Mvmt Flow	0	309	72	87	201	0	0	0	0	70	0	102

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	201	0	0	309	0	0	683	683	212
Stage 1	-	-	-	-	-	-	374	374	-
Stage 2	-	-	-	-	-	-	309	309	-
Critical Hdwy	4.12	-	-	4.13	-	-	6.48	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	5.48	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.48	5.58	-
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.572	4.072	3.372
Pot Cap-1 Maneuver	1371	-	-	1246	-	-	406	364	813
Stage 1	-	-	-	-	-	-	683	607	-
Stage 2	-	-	-	-	-	-	731	649	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1358	-	-	1235	-	-	374	0	806
Mov Cap-2 Maneuver	-	-	-	-	-	-	374	0	-
Stage 1	-	-	-	-	-	-	629	0	-
Stage 2	-	-	-	-	-	-	731	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.4	12.8
HCM LOS	B		

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1358	-	-	1235	-	-	374	806
HCM Lane V/C Ratio	-	-	-	0.07	-	-	0.186	0.127
HCM Control Delay (s)	0	-	-	8.1	0	-	16.8	10.1
HCM Lane LOS	A	-	-	A	A	-	C	B
HCM 95th %tile Q(veh)	0	-	-	0.2	-	-	0.7	0.4

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	143	167	0	0	211	128	25	1	43	0	0	0
Conflicting Peds, #/hr	20	0	0	0	0	20	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	-	-	-	-	-	0	-	-	90	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	4	4	4	3	3	3	6	6	6	2	2	2
Mvmt Flow	164	192	0	0	243	147	29	1	49	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	243	0	0	192	0	0	764	764	212			
Stage 1	-	-	-	-	-	-	521	521	-			
Stage 2	-	-	-	-	-	-	243	243	-			
Critical Hdwy	4.14	-	-	4.13	-	-	6.46	6.56	6.26			
Critical Hdwy Stg 1	-	-	-	-	-	-	5.46	5.56	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	5.46	5.56	-			
Follow-up Hdwy	2.236	-	-	2.227	-	-	3.554	4.054	3.354			
Pot Cap-1 Maneuver	1312	-	-	1375	-	-	366	329	818			
Stage 1	-	-	-	-	-	-	588	525	-			
Stage 2	-	-	-	-	-	-	788	697	-			
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1290	-	-	1352	-	-	309	0	804			
Mov Cap-2 Maneuver	-	-	-	-	-	-	309	0	-			
Stage 1	-	-	-	-	-	-	505	0	-			
Stage 2	-	-	-	-	-	-	775	0	-			
Approach	EB			WB			NB					
HCM Control Delay, s	3.8			0			12.9					
HCM LOS	B											
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR				
Capacity (veh/h)	309	804	1290	-	-	1352	-	-				
HCM Lane V/C Ratio	0.097	0.061	0.127	-	-	-	-	-				
HCM Control Delay (s)	17.9	9.8	8.2	0	-	0	-	-				
HCM Lane LOS	C	A	A	A	-	A	-	-				
HCM 95th %tile Q(veh)	0.3	0.2	0.4	-	-	0	-	-				

Intersection												
Int Delay, s/veh	6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	31	128	51	15	175	2	87	8	12	2	20	77
Conflicting Peds, #/hr	16	0	4	4	0	16	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	11	11	11	2	2	2	7	7	7	2	2	2
Mvmt Flow	38	158	63	19	216	2	107	10	15	2	25	95
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	221	0	0	223	0	0	584	526	208	529	556	235
Stage 1	-	-	-	-	-	-	268	268	-	256	256	-
Stage 2	-	-	-	-	-	-	316	258	-	273	300	-
Critical Hdwy	4.21	-	-	4.12	-	-	7.17	6.57	6.27	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.57	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.57	-	6.12	5.52	-
Follow-up Hdwy	2.299	-	-	2.218	-	-	3.563	4.063	3.363	3.518	4.018	3.318
Pot Cap-1 Maneuver	1297	-	-	1346	-	-	416	450	820	460	439	804
Stage 1	-	-	-	-	-	-	727	678	-	749	696	-
Stage 2	-	-	-	-	-	-	685	685	-	733	666	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1280	-	-	1328	-	-	331	426	808	420	416	792
Mov Cap-2 Maneuver	-	-	-	-	-	-	331	426	-	420	416	-
Stage 1	-	-	-	-	-	-	701	654	-	722	684	-
Stage 2	-	-	-	-	-	-	564	673	-	675	642	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.2			0.6			20			11.7		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	337	808	1280	-	-	1328	-	-	660			
HCM Lane V/C Ratio	0.348	0.018	0.03	-	-	0.014	-	-	0.185			
HCM Control Delay (s)	21.3	9.5	7.9	0	-	7.7	0	-	11.7			
HCM Lane LOS	C	A	A	A	-	A	A	-	B			
HCM 95th %tile Q(veh)	1.5	0.1	0.1	-	-	0	-	-	0.7			

Intersection												
Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	270	41	42	261	0	0	0	0	135	2	284
Conflicting Peds, #/hr	0	0	6	6	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	-	-	50	-	-	-	-	-	-	-	-	25
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	4	4	4
Mvmt Flow	0	314	48	49	303	0	0	0	0	157	2	330
Major/Minor	Major1			Major2			Minor2					
Conflicting Flow All	303	0	0	314	0	0	715	715	309			
Stage 1	-	-	-	-	-	-	401	401	-			
Stage 2	-	-	-	-	-	-	314	314	-			
Critical Hdwy	4.12	-	-	4.12	-	-	6.44	6.54	6.24			
Critical Hdwy Stg 1	-	-	-	-	-	-	5.44	5.54	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	5.44	5.54	-			
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.536	4.036	3.336			
Pot Cap-1 Maneuver	1258	-	-	1246	-	-	394	354	726			
Stage 1	-	-	-	-	-	-	672	597	-			
Stage 2	-	-	-	-	-	-	736	653	-			
Platoon blocked, %	-	-	-	-	-	-						
Mov Cap-1 Maneuver	1252	-	-	1240	-	-	375	0	722			
Mov Cap-2 Maneuver	-	-	-	-	-	-	375	0	-			
Stage 1	-	-	-	-	-	-	640	0	-			
Stage 2	-	-	-	-	-	-	736	0	-			
Approach	EB			WB			SB					
HCM Control Delay, s	0			1.1			16.5					
HCM LOS							C					
Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2				
Capacity (veh/h)	1252	-	-	1240	-	-	375	722				
HCM Lane V/C Ratio	-	-	-	0.039	-	-	0.425	0.457				
HCM Control Delay (s)	0	-	-	8	0	-	21.5	14.1				
HCM Lane LOS	A	-	-	A	A	-	C	B				
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	2.1	2.4				

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	108	297	0	0	241	140	62	3	72	0	0	0
Conflicting Peds, #/hr	7	0	0	0	0	7	1	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	-	-	-	-	-	0	-	-	90	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	4	4	4	2	2	2	2	2	2
Mvmt Flow	117	323	0	0	262	152	67	3	78	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	262	0	0	324	0	0	821	821	331			
Stage 1	-	-	-	-	-	-	559	559	-			
Stage 2	-	-	-	-	-	-	262	262	-			
Critical Hdwy	4.15	-	-	4.14	-	-	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	2.245	-	-	2.236	-	-	3.518	4.018	3.318			
Pot Cap-1 Maneuver	1285	-	-	1225	-	-	344	309	711			
Stage 1	-	-	-	-	-	-	572	511	-			
Stage 2	-	-	-	-	-	-	782	691	-			
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1278	-	-	1218	-	-	303	0	706			
Mov Cap-2 Maneuver	-	-	-	-	-	-	303	0	-			
Stage 1	-	-	-	-	-	-	508	0	-			
Stage 2	-	-	-	-	-	-	777	0	-			
Approach	EB			WB			NB					
HCM Control Delay, s	2.2			0			15.3					
HCM LOS	C											
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR				
Capacity (veh/h)	303	706	1278	-	-	1218	-	-				
HCM Lane V/C Ratio	0.233	0.111	0.092	-	-	-	-	-				
HCM Control Delay (s)	20.5	10.7	8.1	0	-	0	-	-				
HCM Lane LOS	C	B	A	A	-	A	-	-				
HCM 95th %tile Q(veh)	0.9	0.4	0.3	-	-	0	-	-				

Intersection												
Int Delay, s/veh	9.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	113	179	77	11	183	10	123	20	19	4	19	75
Conflicting Peds, #/hr	8	0	6	6	0	8	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	123	195	84	12	199	11	134	22	21	4	21	82
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	212	0	0	280	0	0	765	720	246	725	756	214
Stage 1	-	-	-	-	-	-	484	484	-	230	230	-
Stage 2	-	-	-	-	-	-	281	236	-	495	526	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1358	-	-	1283	-	-	320	354	793	340	337	826
Stage 1	-	-	-	-	-	-	564	552	-	773	714	-
Stage 2	-	-	-	-	-	-	726	710	-	556	529	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1349	-	-	1274	-	-	246	311	786	283	296	819
Mov Cap-2 Maneuver	-	-	-	-	-	-	246	311	-	283	296	-
Stage 1	-	-	-	-	-	-	502	491	-	688	705	-
Stage 2	-	-	-	-	-	-	623	701	-	458	471	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.4			0.4			36			12.6		
HCM LOS							E			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	253	786	1349	-	-	1274	-	-	577			
HCM Lane V/C Ratio	0.614	0.026	0.091	-	-	0.009	-	-	0.185			
HCM Control Delay (s)	39.5	9.7	7.9	0	-	7.9	0	-	12.6			
HCM Lane LOS	E	A	A	A	-	A	A	-	B			
HCM 95th %tile Q(veh)	3.7	0.1	0.3	-	-	0	-	-	0.7			

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	260	61	72	162	0	0	0	0	54	0	86
Conflicting Peds, #/hr	0	0	11	11	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	-	-	50	-	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	8	8	8
Mvmt Flow	0	317	74	88	198	0	0	0	0	66	0	105
Major/Minor	Major1			Major2			Minor2					
Conflicting Flow All	198	0	0	317	0	0	690	690	209			
Stage 1	-	-	-	-	-	-	373	373	-			
Stage 2	-	-	-	-	-	-	317	317	-			
Critical Hdwy	4.12	-	-	4.13	-	-	6.48	6.58	6.28			
Critical Hdwy Stg 1	-	-	-	-	-	-	5.48	5.58	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	5.48	5.58	-			
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.572	4.072	3.372			
Pot Cap-1 Maneuver	1375	-	-	1237	-	-	402	361	816			
Stage 1	-	-	-	-	-	-	683	608	-			
Stage 2	-	-	-	-	-	-	725	644	-			
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1362	-	-	1226	-	-	369	0	809			
Mov Cap-2 Maneuver	-	-	-	-	-	-	369	0	-			
Stage 1	-	-	-	-	-	-	628	0	-			
Stage 2	-	-	-	-	-	-	725	0	-			
Approach	EB			WB			SB					
HCM Control Delay, s	0			2.5			12.7					
HCM LOS							B					
Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2				
Capacity (veh/h)	1362	-	-	1226	-	-	369	809				
HCM Lane V/C Ratio	-	-	-	0.072	-	-	0.178	0.13				
HCM Control Delay (s)	0	-	-	8.2	0	-	16.9	10.1				
HCM Lane LOS	A	-	-	A	A	-	C	B				
HCM 95th %tile Q(veh)	0	-	-	0.2	-	-	0.6	0.4				

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	154	160	0	0	208	125	26	1	43	0	0	0
Conflicting Peds, #/hr	20	0	0	0	0	20	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	-	-	-	-	-	0	-	-	90	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	4	4	4	3	3	3	6	6	6	2	2	2
Mvmt Flow	177	184	0	0	239	144	30	1	49	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	239	0	0	184	0	0	777	777	204			
Stage 1	-	-	-	-	-	-	538	538	-			
Stage 2	-	-	-	-	-	-	239	239	-			
Critical Hdwy	4.14	-	-	4.13	-	-	6.46	6.56	6.26			
Critical Hdwy Stg 1	-	-	-	-	-	-	5.46	5.56	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	5.46	5.56	-			
Follow-up Hdwy	2.236	-	-	2.227	-	-	3.554	4.054	3.354			
Pot Cap-1 Maneuver	1316	-	-	1385	-	-	360	323	827			
Stage 1	-	-	-	-	-	-	577	516	-			
Stage 2	-	-	-	-	-	-	791	700	-			
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1294	-	-	1362	-	-	300	0	813			
Mov Cap-2 Maneuver	-	-	-	-	-	-	300	0	-			
Stage 1	-	-	-	-	-	-	489	0	-			
Stage 2	-	-	-	-	-	-	778	0	-			
Approach	EB			WB			NB					
HCM Control Delay, s	4			0			13.1					
HCM LOS	B											
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR				
Capacity (veh/h)	300	813	1294	-	-	1362	-	-				
HCM Lane V/C Ratio	0.103	0.061	0.137	-	-	-	-	-				
HCM Control Delay (s)	18.4	9.7	8.2	0	-	0	-	-				
HCM Lane LOS	C	A	A	A	-	A	-	-				
HCM 95th %tile Q(veh)	0.3	0.2	0.5	-	-	0	-	-				

Intersection												
Int Delay, s/veh	5.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	22	130	51	15	179	2	87	7	12	2	18	67
Conflicting Peds, #/hr	16	0	4	4	0	16	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	11	11	11	2	2	2	7	7	7	2	2	2
Mvmt Flow	27	160	63	19	221	2	107	9	15	2	22	83
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	225	0	0	225	0	0	562	510	210	514	541	240
Stage 1	-	-	-	-	-	-	248	248	-	261	261	-
Stage 2	-	-	-	-	-	-	314	262	-	253	280	-
Critical Hdwy	4.21	-	-	4.12	-	-	7.17	6.57	6.27	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.57	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.57	-	6.12	5.52	-
Follow-up Hdwy	2.299	-	-	2.218	-	-	3.563	4.063	3.363	3.518	4.018	3.318
Pot Cap-1 Maneuver	1292	-	-	1344	-	-	430	459	818	471	448	799
Stage 1	-	-	-	-	-	-	745	692	-	744	692	-
Stage 2	-	-	-	-	-	-	686	682	-	751	679	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1275	-	-	1326	-	-	353	439	806	435	429	787
Mov Cap-2 Maneuver	-	-	-	-	-	-	353	439	-	435	429	-
Stage 1	-	-	-	-	-	-	726	674	-	725	680	-
Stage 2	-	-	-	-	-	-	577	670	-	701	662	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			0.6			18.6			11.5		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	358	806	1275	-	-	1326	-	-	661			
HCM Lane V/C Ratio	0.324	0.018	0.021	-	-	0.014	-	-	0.162			
HCM Control Delay (s)	19.8	9.6	7.9	0	-	7.8	0	-	11.5			
HCM Lane LOS	C	A	A	A	-	A	A	-	B			
HCM 95th %tile Q(veh)	1.4	0.1	0.1	-	-	0	-	-	0.6			

Intersection												
Int Delay, s/veh	6.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	269	42	41	225	0	0	0	0	129	2	295
Conflicting Peds, #/hr	0	0	6	6	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	-	-	50	-	-	-	-	-	-	-	-	25
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	4	4	4
Mvmt Flow	0	313	49	48	262	0	0	0	0	150	2	343
Major/Minor	Major1			Major2			Minor2					
Conflicting Flow All	262	0	0	313	0	0	670	670	268			
Stage 1	-	-	-	-	-	-	357	357	-			
Stage 2	-	-	-	-	-	-	313	313	-			
Critical Hdwy	4.12	-	-	4.12	-	-	6.44	6.54	6.24			
Critical Hdwy Stg 1	-	-	-	-	-	-	5.44	5.54	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	5.44	5.54	-			
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.536	4.036	3.336			
Pot Cap-1 Maneuver	1302	-	-	1247	-	-	419	376	766			
Stage 1	-	-	-	-	-	-	704	625	-			
Stage 2	-	-	-	-	-	-	737	653	-			
Platoon blocked, %	-	-	-	-	-	-						
Mov Cap-1 Maneuver	1295	-	-	1241	-	-	400	0	762			
Mov Cap-2 Maneuver	-	-	-	-	-	-	400	0	-			
Stage 1	-	-	-	-	-	-	672	0	-			
Stage 2	-	-	-	-	-	-	737	0	-			
Approach	EB			WB			SB					
HCM Control Delay, s	0			1.2			15.3					
HCM LOS							C					
Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2				
Capacity (veh/h)	1295	-	-	1241	-	-	400	762				
HCM Lane V/C Ratio	-	-	-	0.038	-	-	0.381	0.45				
HCM Control Delay (s)	0	-	-	8	0	-	19.4	13.5				
HCM Lane LOS	A	-	-	A	A	-	C	B				
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	1.7	2.4				

Intersection													
Int Delay, s/veh	3.4												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	114	284	0	0	232	134	64	3	72	0	0	0
Conflicting Peds, #/hr	7	0	0	0	0	7	1	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	-	-	-	-	-	0	-	-	90	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	4	4	4	2	2	2	2	2	2
Mvmt Flow	124	309	0	0	252	146	70	3	78	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	252	0	0	310	0	0	810	810	317
Stage 1	-	-	-	-	-	-	558	558	-
Stage 2	-	-	-	-	-	-	252	252	-
Critical Hdwy	4.15	-	-	4.14	-	-	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	2.245	-	-	2.236	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1296	-	-	1239	-	-	349	314	724
Stage 1	-	-	-	-	-	-	573	512	-
Stage 2	-	-	-	-	-	-	790	698	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1288	-	-	1232	-	-	306	0	719
Mov Cap-2 Maneuver	-	-	-	-	-	-	306	0	-
Stage 1	-	-	-	-	-	-	506	0	-
Stage 2	-	-	-	-	-	-	785	0	-

Approach	EB	WB	NB
HCM Control Delay, s	2.3	0	15.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	306	719	1288	-	-	1232	-	-
HCM Lane V/C Ratio	0.238	0.109	0.096	-	-	-	-	-
HCM Control Delay (s)	20.4	10.6	8.1	0	-	0	-	-
HCM Lane LOS	C	B	A	A	-	A	-	-
HCM 95th %tile Q(veh)	0.9	0.4	0.3	-	-	0	-	-

Intersection												
Int Delay, s/veh	8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	96	183	77	11	185	9	123	17	19	3	16	58
Conflicting Peds, #/hr	8	0	6	6	0	8	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	104	199	84	12	201	10	134	18	21	3	17	63
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	213	0	0	285	0	0	723	688	251	693	725	216
Stage 1	-	-	-	-	-	-	451	451	-	232	232	-
Stage 2	-	-	-	-	-	-	272	237	-	461	493	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1357	-	-	1277	-	-	342	369	788	358	352	824
Stage 1	-	-	-	-	-	-	588	571	-	771	713	-
Stage 2	-	-	-	-	-	-	734	709	-	581	547	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1348	-	-	1268	-	-	276	330	781	305	315	817
Mov Cap-2 Maneuver	-	-	-	-	-	-	276	330	-	305	315	-
Stage 1	-	-	-	-	-	-	532	517	-	698	704	-
Stage 2	-	-	-	-	-	-	649	700	-	491	495	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.1			0.4			29.2			12.2		
HCM LOS							D			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	282	781	1348	-	-	1268	-	-	585			
HCM Lane V/C Ratio	0.54	0.026	0.077	-	-	0.009	-	-	0.143			
HCM Control Delay (s)	31.8	9.7	7.9	0	-	7.9	0	-	12.2			
HCM Lane LOS	D	A	A	A	-	A	A	-	B			
HCM 95th %tile Q(veh)	3	0.1	0.3	-	-	0	-	-	0.5			

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	265	61	73	168	0	0	0	0	57	0	86
Conflicting Peds, #/hr	0	0	11	11	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	-	-	50	-	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	8	8	8
Mvmt Flow	0	323	74	89	205	0	0	0	0	70	0	105
Major/Minor	Major1			Major2			Minor2					
Conflicting Flow All	205	0	0	323	0	0	706	706	216			
Stage 1	-	-	-	-	-	-	383	383	-			
Stage 2	-	-	-	-	-	-	323	323	-			
Critical Hdwy	4.12	-	-	4.13	-	-	6.48	6.58	6.28			
Critical Hdwy Stg 1	-	-	-	-	-	-	5.48	5.58	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	5.48	5.58	-			
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.572	4.072	3.372			
Pot Cap-1 Maneuver	1366	-	-	1231	-	-	393	353	809			
Stage 1	-	-	-	-	-	-	676	602	-			
Stage 2	-	-	-	-	-	-	720	640	-			
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1353	-	-	1220	-	-	361	0	802			
Mov Cap-2 Maneuver	-	-	-	-	-	-	361	0	-			
Stage 1	-	-	-	-	-	-	621	0	-			
Stage 2	-	-	-	-	-	-	720	0	-			
Approach	EB			WB			SB					
HCM Control Delay, s	0			2.5			13					
HCM LOS							B					
Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2				
Capacity (veh/h)	1353	-	-	1220	-	-	361	802				
HCM Lane V/C Ratio	-	-	-	0.073	-	-	0.193	0.131				
HCM Control Delay (s)	0	-	-	8.2	0	-	17.3	10.2				
HCM Lane LOS	A	-	-	A	A	-	C	B				
HCM 95th %tile Q(veh)	0	-	-	0.2	-	-	0.7	0.4				

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	154	168	0	0	215	128	26	1	44	0	0	0
Conflicting Peds, #/hr	20	0	0	0	0	20	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	-	-	-	-	-	0	-	-	90	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	4	4	4	3	3	3	6	6	6	2	2	2
Mvmt Flow	177	193	0	0	247	147	30	1	51	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	247	0	0	193	0	0	794	794	213			
Stage 1	-	-	-	-	-	-	547	547	-			
Stage 2	-	-	-	-	-	-	247	247	-			
Critical Hdwy	4.14	-	-	4.13	-	-	6.46	6.56	6.26			
Critical Hdwy Stg 1	-	-	-	-	-	-	5.46	5.56	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	5.46	5.56	-			
Follow-up Hdwy	2.236	-	-	2.227	-	-	3.554	4.054	3.354			
Pot Cap-1 Maneuver	1307	-	-	1374	-	-	352	316	817			
Stage 1	-	-	-	-	-	-	572	511	-			
Stage 2	-	-	-	-	-	-	785	695	-			
Platoon blocked, %												
Mov Cap-1 Maneuver	1285	-	-	1351	-	-	293	0	803			
Mov Cap-2 Maneuver	-	-	-	-	-	-	293	0	-			
Stage 1	-	-	-	-	-	-	484	0	-			
Stage 2	-	-	-	-	-	-	772	0	-			
Approach	EB			WB			NB					
HCM Control Delay, s	3.9			0			13.2					
HCM LOS							B					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR				
Capacity (veh/h)	293	803	1285	-	-	1351	-	-				
HCM Lane V/C Ratio	0.106	0.063	0.138	-	-	-	-	-				
HCM Control Delay (s)	18.7	9.8	8.2	0	-	0	-	-				
HCM Lane LOS	C	A	A	A	-	A	-	-				
HCM 95th %tile Q(veh)	0.4	0.2	0.5	-	-	0	-	-				

Intersection												
Int Delay, s/veh	6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	31	130	51	15	179	2	87	8	12	2	20	77
Conflicting Peds, #/hr	16	0	4	4	0	16	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	11	11	11	2	2	2	7	7	7	2	2	2
Mvmt Flow	38	160	63	19	221	2	107	10	15	2	25	95
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	225	0	0	225	0	0	592	533	210	536	563	240
Stage 1	-	-	-	-	-	-	271	271	-	261	261	-
Stage 2	-	-	-	-	-	-	321	262	-	275	302	-
Critical Hdwy	4.21	-	-	4.12	-	-	7.17	6.57	6.27	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.57	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.57	-	6.12	5.52	-
Follow-up Hdwy	2.299	-	-	2.218	-	-	3.563	4.063	3.363	3.518	4.018	3.318
Pot Cap-1 Maneuver	1292	-	-	1344	-	-	411	446	818	455	435	799
Stage 1	-	-	-	-	-	-	724	676	-	744	692	-
Stage 2	-	-	-	-	-	-	680	682	-	731	664	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1275	-	-	1326	-	-	327	423	806	416	412	787
Mov Cap-2 Maneuver	-	-	-	-	-	-	327	423	-	416	412	-
Stage 1	-	-	-	-	-	-	698	652	-	718	680	-
Stage 2	-	-	-	-	-	-	559	670	-	674	640	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.2			0.6			20.3			11.8		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	333	806	1275	-	-	1326	-	-	655			
HCM Lane V/C Ratio	0.352	0.018	0.03	-	-	0.014	-	-	0.187			
HCM Control Delay (s)	21.6	9.6	7.9	0	-	7.8	0	-	11.8			
HCM Lane LOS	C	A	A	A	-	A	A	-	B			
HCM 95th %tile Q(veh)	1.5	0.1	0.1	-	-	0	-	-	0.7			

Intersection												
Int Delay, s/veh	7.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	278	42	43	264	0	0	0	0	135	2	295
Conflicting Peds, #/hr	0	0	6	6	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	-	-	50	-	-	-	-	-	-	-	-	25
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	4	4	4
Mvmt Flow	0	323	49	50	307	0	0	0	0	157	2	343
Major/Minor	Major1			Major2			Minor2					
Conflicting Flow All	307	0	0	323	0	0	730	730	313			
Stage 1	-	-	-	-	-	-	407	407	-			
Stage 2	-	-	-	-	-	-	323	323	-			
Critical Hdwy	4.12	-	-	4.12	-	-	6.44	6.54	6.24			
Critical Hdwy Stg 1	-	-	-	-	-	-	5.44	5.54	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	5.44	5.54	-			
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.536	4.036	3.336			
Pot Cap-1 Maneuver	1254	-	-	1237	-	-	386	347	723			
Stage 1	-	-	-	-	-	-	668	594	-			
Stage 2	-	-	-	-	-	-	729	647	-			
Platoon blocked, %	-	-	-	-	-	-						
Mov Cap-1 Maneuver	1248	-	-	1231	-	-	367	0	719			
Mov Cap-2 Maneuver	-	-	-	-	-	-	367	0	-			
Stage 1	-	-	-	-	-	-	635	0	-			
Stage 2	-	-	-	-	-	-	729	0	-			
Approach	EB			WB			SB					
HCM Control Delay, s	0			1.1			16.9					
HCM LOS							C					
Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2				
Capacity (veh/h)	1248	-	-	1231	-	-	367	719				
HCM Lane V/C Ratio	-	-	-	0.041	-	-	0.434	0.477				
HCM Control Delay (s)	0	-	-	8	0	-	22.1	14.5				
HCM Lane LOS	A	-	-	A	A	-	C	B				
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	2.1	2.6				

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	114	299	0	0	243	140	64	3	74	0	0	0
Conflicting Peds, #/hr	7	0	0	0	0	7	1	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	-	-	-	-	-	0	-	-	90	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	4	4	4	2	2	2	2	2	2
Mvmt Flow	124	325	0	0	264	152	70	3	80	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	264	0	0	326	0	0	838	838	333			
Stage 1	-	-	-	-	-	-	574	574	-			
Stage 2	-	-	-	-	-	-	264	264	-			
Critical Hdwy	4.15	-	-	4.14	-	-	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	2.245	-	-	2.236	-	-	3.518	4.018	3.318			
Pot Cap-1 Maneuver	1283	-	-	1222	-	-	336	302	709			
Stage 1	-	-	-	-	-	-	563	503	-			
Stage 2	-	-	-	-	-	-	780	690	-			
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1276	-	-	1215	-	-	294	0	704			
Mov Cap-2 Maneuver	-	-	-	-	-	-	294	0	-			
Stage 1	-	-	-	-	-	-	496	0	-			
Stage 2	-	-	-	-	-	-	775	0	-			
Approach	EB			WB			NB					
HCM Control Delay, s	2.2			0			15.7					
HCM LOS	C											
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR				
Capacity (veh/h)	294	704	1276	-	-	1215	-	-				
HCM Lane V/C Ratio	0.248	0.114	0.097	-	-	-	-	-				
HCM Control Delay (s)	21.2	10.8	8.1	0	-	0	-	-				
HCM Lane LOS	C	B	A	A	-	A	-	-				
HCM 95th %tile Q(veh)	1	0.4	0.3	-	-	0	-	-				

Intersection												
Int Delay, s/veh	9.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	113	183	77	11	185	10	123	20	19	4	19	75
Conflicting Peds, #/hr	8	0	6	6	0	8	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	123	199	84	12	201	11	134	22	21	4	21	82
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	214	0	0	285	0	0	772	726	251	731	762	217
Stage 1	-	-	-	-	-	-	488	488	-	232	232	-
Stage 2	-	-	-	-	-	-	284	238	-	499	530	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1356	-	-	1277	-	-	317	351	788	337	335	823
Stage 1	-	-	-	-	-	-	561	550	-	771	713	-
Stage 2	-	-	-	-	-	-	723	708	-	554	527	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1347	-	-	1268	-	-	243	308	781	280	294	816
Mov Cap-2 Maneuver	-	-	-	-	-	-	243	308	-	280	294	-
Stage 1	-	-	-	-	-	-	498	489	-	685	704	-
Stage 2	-	-	-	-	-	-	621	699	-	456	468	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.4			0.4			36.9			12.7		
HCM LOS							E			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	250	781	1347	-	-	1268	-	-	574			
HCM Lane V/C Ratio	0.622	0.026	0.091	-	-	0.009	-	-	0.186			
HCM Control Delay (s)	40.5	9.7	7.9	0	-	7.9	0	-	12.7			
HCM Lane LOS	E	A	A	A	-	A	A	-	B			
HCM 95th %tile Q(veh)	3.7	0.1	0.3	-	-	0	-	-	0.7			

Intersection												
Int Delay, s/veh	6.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	362	88	75	199	0	0	0	0	140	5	260
Conflicting Peds, #/hr	0	0	11	11	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	-	-	50	-	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	8	8	8
Mvmt Flow	0	393	96	82	216	0	0	0	0	152	5	283
Major/Minor	Major1			Major2			Minor2					
Conflicting Flow All	216	0	0	393	0	0	772	772	227			
Stage 1	-	-	-	-	-	-	379	379	-			
Stage 2	-	-	-	-	-	-	393	393	-			
Critical Hdwy	4.12	-	-	4.13	-	-	6.48	6.58	6.28			
Critical Hdwy Stg 1	-	-	-	-	-	-	5.48	5.58	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	5.48	5.58	-			
Follow-up Hdwy	2.218	-	-	2.227	-	-	3.572	4.072	3.372			
Pot Cap-1 Maneuver	1354	-	-	1160	-	-	359	323	798			
Stage 1	-	-	-	-	-	-	679	604	-			
Stage 2	-	-	-	-	-	-	669	596	-			
Platoon blocked, %	-	-	-	-	-	-						
Mov Cap-1 Maneuver	1342	-	-	1149	-	-	330	0	791			
Mov Cap-2 Maneuver	-	-	-	-	-	-	330	0	-			
Stage 1	-	-	-	-	-	-	624	0	-			
Stage 2	-	-	-	-	-	-	669	0	-			
Approach	EB			WB			SB					
HCM Control Delay, s	0			2.3			16.9					
HCM LOS							C					
Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2				
Capacity (veh/h)	1342	-	-	1149	-	-	330	791				
HCM Lane V/C Ratio	-	-	-	0.071	-	-	0.478	0.357				
HCM Control Delay (s)	0	-	-	8.4	0	-	25.5	12.1				
HCM Lane LOS	A	-	-	A	A	-	D	B				
HCM 95th %tile Q(veh)	0	-	-	0.2	-	-	2.5	1.6				

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	180	332	0	0	197	220	77	5	101	0	0	0
Conflicting Peds, #/hr	20	0	0	0	0	20	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	-	-	-	-	-	0	-	-	90	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	3	3	3	6	6	6	2	2	2
Mvmt Flow	196	361	0	0	214	239	84	5	110	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	214	0	0	361	0	0	966	966	381			
Stage 1	-	-	-	-	-	-	752	752	-			
Stage 2	-	-	-	-	-	-	214	214	-			
Critical Hdwy	4.14	-	-	4.13	-	-	6.46	6.56	6.26			
Critical Hdwy Stg 1	-	-	-	-	-	-	5.46	5.56	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	5.46	5.56	-			
Follow-up Hdwy	2.236	-	-	2.227	-	-	3.554	4.054	3.354			
Pot Cap-1 Maneuver	1344	-	-	1192	-	-	278	251	657			
Stage 1	-	-	-	-	-	-	459	412	-			
Stage 2	-	-	-	-	-	-	812	718	-			
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1322	-	-	1172	-	-	223	0	646			
Mov Cap-2 Maneuver	-	-	-	-	-	-	223	0	-			
Stage 1	-	-	-	-	-	-	374	0	-			
Stage 2	-	-	-	-	-	-	798	0	-			
Approach	EB			WB			NB					
HCM Control Delay, s	2.9			0			20.6					
HCM LOS	C											
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR				
Capacity (veh/h)	223	646	1322	-	-	1172	-	-				
HCM Lane V/C Ratio	0.4	0.17	0.148	-	-	-	-	-				
HCM Control Delay (s)	31.5	11.7	8.2	0	-	0	-	-				
HCM Lane LOS	D	B	A	A	-	A	-	-				
HCM 95th %tile Q(veh)	1.8	0.6	0.5	-	-	0	-	-				

Intersection												
Int Delay, s/veh	13.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	52	268	103	15	201	10	134	21	21	10	31	82
Conflicting Peds, #/hr	16	0	4	4	0	16	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	11	11	11	2	2	2	7	7	7	2	2	2
Mvmt Flow	59	305	117	17	228	11	152	24	24	11	35	93

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	242	0	0	424	0	0	817	759	381	765	812	252
Stage 1	-	-	-	-	-	-	483	483	-	270	270	-
Stage 2	-	-	-	-	-	-	334	276	-	495	542	-
Critical Hdwy	4.21	-	-	4.12	-	-	7.17	6.57	6.27	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.57	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.57	-	6.12	5.52	-
Follow-up Hdwy	2.299	-	-	2.218	-	-	3.563	4.063	3.363	3.518	4.018	3.318
Pot Cap-1 Maneuver	1273	-	-	1135	-	-	289	330	655	320	313	787
Stage 1	-	-	-	-	-	-	555	544	-	736	686	-
Stage 2	-	-	-	-	-	-	669	673	-	556	520	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1256	-	-	1120	-	-	213	303	645	268	287	775
Mov Cap-2 Maneuver	-	-	-	-	-	-	213	303	-	268	287	-
Stage 1	-	-	-	-	-	-	520	509	-	689	673	-
Stage 2	-	-	-	-	-	-	540	660	-	472	487	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.5	57.6	15.3
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	222	645	1256	-	-	1120	-	-	490
HCM Lane V/C Ratio	0.793	0.037	0.047	-	-	0.015	-	-	0.285
HCM Control Delay (s)	63.9	10.8	8	0	-	8.3	0	-	15.3
HCM Lane LOS	F	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	5.8	0.1	0.1	-	-	0	-	-	1.2

Intersection												
Int Delay, s/veh	16.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	365	72	93	332	0	0	0	0	210	5	285
Conflicting Peds, #/hr	0	0	6	6	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	-	-	50	-	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	4	4	4
Mvmt Flow	0	397	78	101	361	0	0	0	0	228	5	310
Major/Minor	Major1			Major2			Minor2					
Conflicting Flow All	361	0	0	397	0	0	960	960	367			
Stage 1	-	-	-	-	-	-	563	563	-			
Stage 2	-	-	-	-	-	-	397	397	-			
Critical Hdwy	4.12	-	-	4.12	-	-	6.44	6.54	6.24			
Critical Hdwy Stg 1	-	-	-	-	-	-	5.44	5.54	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	5.44	5.54	-			
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.536	4.036	3.336			
Pot Cap-1 Maneuver	1198	-	-	1162	-	-	282	255	674			
Stage 1	-	-	-	-	-	-	566	506	-			
Stage 2	-	-	-	-	-	-	675	600	-			
Platoon blocked, %	-	-	-	-	-	-						
Mov Cap-1 Maneuver	1192	-	-	1156	-	-	251	0	671			
Mov Cap-2 Maneuver	-	-	-	-	-	-	251	0	-			
Stage 1	-	-	-	-	-	-	504	0	-			
Stage 2	-	-	-	-	-	-	675	0	-			
Approach	EB			WB			SB					
HCM Control Delay, s	0			1.8			44.1					
HCM LOS							E					
Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2				
Capacity (veh/h)	1192	-	-	1156	-	-	251	671				
HCM Lane V/C Ratio	-	-	-	0.087	-	-	0.931	0.462				
HCM Control Delay (s)	0	-	-	8.4	0	-	82.9	14.9				
HCM Lane LOS	A	-	-	A	A	-	F	B				
HCM 95th %tile Q(veh)	0	-	-	0.3	-	-	8.3	2.4				

Intersection												
Int Delay, s/veh	7.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	240	335	0	0	322	410	103	5	121	0	0	0
Conflicting Peds, #/hr	7	0	0	0	0	7	1	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	-	-	-	-	-	0	-	-	90	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	4	4	4	2	2	2	2	2	2
Mvmt Flow	253	353	0	0	339	432	108	5	127	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	339	0	0	354	0	0	1198	1198	361			
Stage 1	-	-	-	-	-	-	859	859	-			
Stage 2	-	-	-	-	-	-	339	339	-			
Critical Hdwy	4.15	-	-	4.14	-	-	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	2.245	-	-	2.236	-	-	3.518	4.018	3.318			
Pot Cap-1 Maneuver	1204	-	-	1194	-	-	205	186	684			
Stage 1	-	-	-	-	-	-	415	373	-			
Stage 2	-	-	-	-	-	-	722	640	-			
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1197	-	-	1187	-	-	150	0	679			
Mov Cap-2 Maneuver	-	-	-	-	-	-	150	0	-			
Stage 1	-	-	-	-	-	-	306	0	-			
Stage 2	-	-	-	-	-	-	718	0	-			
Approach	EB			WB			NB					
HCM Control Delay, s	3.7			0			43.9					
HCM LOS							E					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR				
Capacity (veh/h)	150	679	1197	-	-	1187	-	-				
HCM Lane V/C Ratio	0.758	0.188	0.211	-	-	-	-	-				
HCM Control Delay (s)	80.1	11.5	8.8	0	-	0	-	-				
HCM Lane LOS	F	B	A	A	-	A	-	-				
HCM 95th %tile Q(veh)	4.6	0.7	0.8	-	-	0	-	-				

Intersection												
Int Delay, s/veh	129.5											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	103	235	118	21	361	10	237	31	26	26	37	134
Conflicting Peds, #/hr	8	0	6	6	0	8	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	108	247	124	22	380	11	249	33	27	27	39	141

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	393	0	0	374	0	0	1049	965	319	976	1021	395
Stage 1	-	-	-	-	-	-	528	528	-	431	431	-
Stage 2	-	-	-	-	-	-	521	437	-	545	590	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1166	-	-	1184	-	-	~ 205	255	722	230	236	654
Stage 1	-	-	-	-	-	-	534	528	-	603	583	-
Stage 2	-	-	-	-	-	-	539	579	-	523	495	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1158	-	-	1176	-	-	~ 121	218	716	174	202	649
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 121	218	-	174	202	-
Stage 1	-	-	-	-	-	-	469	464	-	530	568	-
Stage 2	-	-	-	-	-	-	381	564	-	409	435	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0.4	\$ 568.1	27.1
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	128	716	1158	-	-	1176	-	-	365
HCM Lane V/C Ratio	2.204	0.038	0.094	-	-	0.019	-	-	0.568
HCM Control Delay (s)	\$ 622.2	10.2	8.4	0	-	8.1	0	-	27.1
HCM Lane LOS	F	B	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	23.7	0.1	0.3	-	-	0.1	-	-	3.4

Notes												
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon												

Intersection												
Intersection Delay, s/veh	15.8											
Intersection LOS	C											
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	52	268	103	0	15	201	10	0	134	21	21
Peak Hour Factor	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	11	11	11	2	2	2	2	2	7	7	7
Mvmt Flow	0	59	305	117	0	17	228	11	0	152	24	24
Number of Lanes	0	1	1	0	0	0	2	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	20.8	11.2	12.9
HCM LOS	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	13%	0%	100%	0%
Vol Thru, %	0%	50%	0%	72%	87%	91%	0%	27%
Vol Right, %	0%	50%	0%	28%	0%	9%	0%	73%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	134	42	52	371	116	111	10	113
LT Vol	134	0	52	0	15	0	10	0
Through Vol	0	21	0	268	101	101	0	31
RT Vol	0	21	0	103	0	10	0	82
Lane Flow Rate	152	48	59	422	131	126	11	128
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.317	0.088	0.111	0.708	0.237	0.222	0.024	0.234
Departure Headway (Hd)	7.49	6.624	6.75	6.047	6.494	6.363	7.581	6.551
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	478	537	529	594	550	560	469	544
Service Time	5.275	4.407	4.516	3.812	4.274	4.143	5.372	4.341
HCM Lane V/C Ratio	0.318	0.089	0.112	0.71	0.238	0.225	0.023	0.235
HCM Control Delay	13.8	10.1	10.4	22.3	11.3	11	10.6	11.4
HCM Lane LOS	B	B	B	C	B	B	B	B
HCM 95th-tile Q	1.3	0.3	0.4	5.7	0.9	0.8	0.1	0.9

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	10	31	82
Peak Hour Factor	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	11	35	93
Number of Lanes	0	1	1	0

Approach SB

Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	11.3
HCM LOS	B

Lane

Intersection												
Intersection Delay, s/veh	19.4											
Intersection LOS	C											
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	103	235	118	0	21	361	10	0	237	31	26
Peak Hour Factor	0.92	0.95	0.95	0.95	0.92	0.95	0.95	0.95	0.92	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	108	247	124	0	22	380	11	0	249	33	27
Number of Lanes	0	1	1	0	0	0	2	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	24.1	15.9	19.8
HCM LOS	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	10%	0%	100%	0%
Vol Thru, %	0%	54%	0%	67%	90%	95%	0%	22%
Vol Right, %	0%	46%	0%	33%	0%	5%	0%	78%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	237	57	103	353	202	191	26	171
LT Vol	237	0	103	0	21	0	26	0
Through Vol	0	31	0	235	181	181	0	37
RT Vol	0	26	0	118	0	10	0	134
Lane Flow Rate	249	60	108	372	212	201	27	180
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.577	0.125	0.237	0.735	0.446	0.416	0.066	0.38
Departure Headway (Hd)	8.328	7.484	7.872	7.119	7.564	7.472	8.677	7.593
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	432	478	455	505	475	479	412	472
Service Time	6.099	5.255	5.64	4.886	5.337	5.246	6.455	5.37
HCM Lane V/C Ratio	0.576	0.126	0.237	0.737	0.446	0.42	0.066	0.381
HCM Control Delay	21.9	11.3	13.1	27.3	16.3	15.5	12.1	15
HCM Lane LOS	C	B	B	D	C	C	B	B
HCM 95th-tile Q	3.5	0.4	0.9	6.1	2.3	2	0.2	1.8

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	26	37	134
Peak Hour Factor	0.92	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	27	39	141
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	14.6
HCM LOS	B

Lane
