Initial Study and Mitigated Negative Declaration (Volume II: Appendices)

FOR THE

Indelicato Property Subdivision Project

April 5, 2023

Prepared for:

City of Manteca – City Hall
1001 West Center Street
Manteca, CA 95337
(209) 456-8000

Prepared by:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
(916) 580-9818

INITIAL STUDY AND

MITIGATED NEGATIVE DECLARATION

(VOLUME II: APPENDICES)

FOR THE

INDELICATO PROPERTY SUBDIVISION PROJECT

APRIL 5, 2023

Prepared for:

City of Manteca – City Hall
1001 West Center Street
Manteca, CA 95337
(209) 456-8000

Prepared by:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
(916) 580-9818

APPENDIX A: AIR QUALITY/GREENHOUSE GAS/ENERGY MODELING OUTPUTS

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Manteca Indelicato Subdivision Project

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	173.00	Dwelling Unit	40.00	311,400.00	549

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2025
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Actual acreage

Construction Phase - No demolition/vacant land. Site prepare reduced due to site conditions requiring little to no veg or debris removal. Site is flat.

Grading - Actual acreage, site will not require import/export, balanced on site.

Operational Off-Road Equipment -

Stationary Sources - Emergency Generators and Fire Pumps -

Land Use Change -

Sequestration -

Construction Off-road Equipment Mitigation - Per SJVACPD requirements/rules for dust prohibition.

Mobile Land Use Mitigation -

Area Coating - 100 b/L for interior coating limitations provided per rule 4601.

Architectural Coating - Per rule 4601.

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Vehicle Trips - Trip rates per ITE 210 (Kittelson report 2022)

Area Mitigation - Per SJVAPCD rules.

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	100.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	100
tblAreaCoating	Area_EF_Nonresidential_Interior	150	100
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblAreaCoating	Area_EF_Residential_Interior	150	100
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	5
tblConstructionPhase	NumDays	50.00	0.00
tblConstructionPhase	NumDays	30.00	10.00
tblConstructionPhase	PhaseEndDate	7/8/2026	3/15/2024
tblConstructionPhase	PhaseEndDate	2/4/2026	10/29/2025
tblConstructionPhase	PhaseEndDate	11/9/2022	8/31/2022
tblConstructionPhase	PhaseEndDate	4/5/2023	12/28/2022
tblConstructionPhase	PhaseEndDate	4/22/2026	3/24/2023
tblConstructionPhase	PhaseEndDate	12/21/2022	9/14/2022
tblConstructionPhase	PhaseStartDate	4/23/2026	1/1/2024
tblConstructionPhase	PhaseStartDate	4/6/2023	12/29/2022
tblConstructionPhase	PhaseStartDate	12/22/2022	9/15/2022
tblConstructionPhase	PhaseStartDate	2/5/2026	1/9/2023
tblConstructionPhase	PhaseStartDate	11/10/2022	9/1/2022
tblLandUse	LotAcreage	56.17	40.00

tblVehicleTrips	ST_TR	9.54	9.66
tblVehicleTrips	SU_TR	8.55	9.66
tblVehicleTrips	WD_TR	9.44	9.66
tblWoodstoves	NumberCatalytic	40.00	0.00
tblWoodstoves	NumberNoncatalytic	40.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1564	1.6406	1.2267	2.6100e-003	0.4507	0.0702	0.5210	0.1895	0.0646	0.2541	0.0000	229.7737	229.7737	0.0723	2.3000e-004	231.6501
2023	0.2600	2.2701	2.7365	5.1800e-003	0.0830	0.1060	0.1889	0.0224	0.0994	0.1219	0.0000	455.1998	455.1998	0.0913	8.3400e-003	459.9680
2024	2.1714	1.9133	2.3763	4.6400e-003	0.0829	0.0830	0.1659	0.0224	0.0782	0.1006	0.0000	407.5892	407.5892	0.0739	8.1600e-003	411.8665
2025	0.1663	1.4425	1.8932	3.7200e-003	0.0662	0.0578	0.1240	0.0179	0.0543	0.0722	0.0000	326.9802	326.9802	0.0601	6.4900e-003	330.4175
Maximum	**2.1714**	**2.2701**	**2.7365**	**5.1800e-003**	**0.4507**	**0.1060**	**0.5210**	**0.1895**	**0.0994**	**0.2541**	**0.0000**	**455.1998**	**455.1998**	**0.0913**	**8.3400e-003**	**459.9680**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1564	1.6406	1.2267	2.6100e-003	0.2063	0.0702	0.2765	0.0862	0.0646	0.1508	0.0000	229.7734	229.7734	0.0723	2.3000e-004	231.6498
2023	0.2600	2.2701	2.7365	5.1800e-003	0.0767	0.1060	0.1827	0.0209	0.0994	0.1203	0.0000	455.1994	455.1994	0.0913	8.3400e-003	459.9676
2024	2.1714	1.9133	2.3763	4.6400e-003	0.0767	0.0830	0.1597	0.0209	0.0782	0.0991	0.0000	407.5888	407.5888	0.0739	8.1600e-003	411.8661
2025	0.1663	1.4425	1.8932	3.7200e-003	0.0612	0.0578	0.1190	0.0167	0.0543	0.0710	0.0000	326.9799	326.9799	0.0601	6.4900e-003	330.4172
Maximum	**2.1714**	**2.2701**	**2.7365**	**5.1800e-003**	**0.2063**	**0.1060**	**0.2765**	**0.0862**	**0.0994**	**0.1508**	**0.0000**	**455.1994**	**455.1994**	**0.0913**	**8.3400e-003**	**459.9676**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**38.35**	**0.00**	**26.19**	**42.65**	**0.00**	**19.60**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	**Start Date**	**End Date**	**Maximum Unmitigated ROG + NOX (tons/quarter)**	**Maximum Mitigated ROG + NOX (tons/quarter)**
1	**9-1-2022**	**11-30-2022**	1.3528	1.3528
2	**12-1-2022**	**2-28-2023**	1.0123	1.0123
3	**3-1-2023**	**5-31-2023**	0.6578	0.6578
4	**6-1-2023**	**8-31-2023**	0.5602	0.5602
5	**9-1-2023**	**11-30-2023**	0.5555	0.5555
6	**12-1-2023**	**2-29-2024**	2.0827	2.0827
7	**3-1-2024**	**5-31-2024**	0.9131	0.9131
8	**6-1-2024**	**8-31-2024**	0.5250	0.5250

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

9	**9-1-2024**	**11-30-2024**	0.5206	0.5206
10	**12-1-2024**	**2-28-2025**	0.4922	0.4922
11	**3-1-2025**	**5-31-2025**	0.4893	0.4893
12	**6-1-2025**	**8-31-2025**	0.4887	0.4887
13	**9-1-2025**	**9-30-2025**	0.1594	0.1594
		Highest	2.0827	2.0827

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.4571	0.0795	1.3109	4.8000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	77.0432	77.0432	3.4500e-003	1.3700e-003	77.5388
Energy	0.0221	0.1886	0.0803	1.2000e-003		0.0153	0.0153		0.0153	0.0153	0.0000	344.9872	344.9872	0.0247	6.4900e-003	347.5367
Mobile	0.7452	1.1850	7.1873	0.0172	1.8051	0.0140	1.8192	0.4826	0.0131	0.4958	0.0000	1,630.0148	1,630.0148	0.0846	0.0826	1,656.7488
Waste						0.0000	0.0000		0.0000	0.0000	40.1191	0.0000	40.1191	2.3710	0.0000	99.3935
Water						0.0000	0.0000		0.0000	0.0000	3.5760	7.9443	11.5203	0.3686	8.8300e-003	23.3654
Total	**2.2244**	**1.4531**	**8.5784**	**0.0189**	**1.8051**	**0.0416**	**1.8468**	**0.4826**	**0.0407**	**0.5234**	**43.6951**	**2,059.9894**	**2,103.6845**	**2.8523**	**0.0993**	**2,204.5830**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.4571	0.0795	1.3109	4.8000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	77.0432	77.0432	3.4500e-003	1.3700e-003	77.5388
Energy	0.0221	0.1886	0.0803	1.2000e-003		0.0153	0.0153		0.0153	0.0153	0.0000	344.9872	344.9872	0.0247	6.4900e-003	347.5367
Mobile	0.7483	1.1939	7.2400	0.0174	1.8224	0.0141	1.8365	0.4873	0.0133	0.5005	0.0000	1,645.1495	1,645.1495	0.0851	0.0832	1,672.0824
Waste						0.0000	0.0000		0.0000	0.0000	40.1191	0.0000	40.1191	2.3710	0.0000	99.3935
Water						0.0000	0.0000		0.0000	0.0000	2.8608	6.6753	9.5361	0.2949	7.0700e-003	19.0153
Total	**2.2275**	**1.4620**	**8.6311**	**0.0191**	**1.8224**	**0.0417**	**1.8641**	**0.4873**	**0.0409**	**0.5281**	**42.9799**	**2,073.8552**	**2,116.8351**	**2.7791**	**0.0982**	**2,215.5667**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**-0.14**	**-0.61**	**-0.61**	**-0.85**	**-0.96**	**-0.29**	**-0.94**	**-0.96**	**-0.29**	**-0.90**	**1.64**	**-0.67**	**-0.63**	**2.57**	**1.14**	**-0.50**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
Vegetation Land Change	-172.4000
Total	**-172.4000**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2022	8/31/2022	5	0	
2	Site Preparation	Site Preparation	9/1/2022	9/14/2022	5	10	
3	Grading	Grading	9/15/2022	12/28/2022	5	75	
4	Building Construction	Building Construction	12/29/2022	10/29/2025	5	740	
5	Paving	Paving	1/9/2023	3/24/2023	5	55	
6	Architectural Coating	Architectural Coating	1/1/2024	3/15/2024	5	55	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 225

Acres of Paving: 0

Residential Indoor: 630,585; Residential Outdoor: 210,195; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	9	62.00	18.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	12.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1654	0.0985	1.9000e-004		8.0600e-003	8.0600e-003		7.4200e-003	7.4200e-003	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	**0.0159**	**0.1654**	**0.0985**	**1.9000e-004**	**0.0983**	**8.0600e-003**	**0.1064**	**0.0505**	**7.4200e-003**	**0.0579**	**0.0000**	**16.7197**	**16.7197**	**5.4100e-003**	**0.0000**	**16.8549**

3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	2.0000e-004	2.2400e-003	1.0000e-005	7.2000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5859	0.5859	2.0000e-005	2.0000e-005	0.5916
Total	**2.8000e-004**	**2.0000e-004**	**2.2400e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5859**	**0.5859**	**2.0000e-005**	**2.0000e-005**	**0.5916**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0442	0.0000	0.0442	0.0227	0.0000	0.0227	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1654	0.0985	1.9000e-004		8.0600e-003	8.0600e-003		7.4200e-003	7.4200e-003	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	**0.0159**	**0.1654**	**0.0985**	**1.9000e-004**	**0.0442**	**8.0600e-003**	**0.0523**	**0.0227**	**7.4200e-003**	**0.0302**	**0.0000**	**16.7197**	**16.7197**	**5.4100e-003**	**0.0000**	**16.8549**

3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	2.0000e-004	2.2400e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.5859	0.5859	2.0000e-005	2.0000e-005	0.5916
Total	**2.8000e-004**	**2.0000e-004**	**2.2400e-003**	**1.0000e-005**	**6.6000e-004**	**0.0000**	**6.6000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5859**	**0.5859**	**2.0000e-005**	**2.0000e-005**	**0.5916**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3451	0.0000	0.3451	0.1370	0.0000	0.1370	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1359	1.4566	1.0891	2.3300e-003		0.0613	0.0613		0.0564	0.0564	0.0000	204.5048	204.5048	0.0661	0.0000	206.1583
Total	**0.1359**	**1.4566**	**1.0891**	**2.3300e-003**	**0.3451**	**0.0613**	**0.4064**	**0.1370**	**0.0564**	**0.1934**	**0.0000**	**204.5048**	**204.5048**	**0.0661**	**0.0000**	**206.1583**

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3700e-003	1.6500e-003	0.0187	5.0000e-005	5.9700e-003	3.0000e-005	6.0100e-003	1.5900e-003	3.0000e-005	1.6200e-003	0.0000	4.8822	4.8822	1.6000e-004	1.5000e-004	4.9300
Total	**2.3700e-003**	**1.6500e-003**	**0.0187**	**5.0000e-005**	**5.9700e-003**	**3.0000e-005**	**6.0100e-003**	**1.5900e-003**	**3.0000e-005**	**1.6200e-003**	**0.0000**	**4.8822**	**4.8822**	**1.6000e-004**	**1.5000e-004**	**4.9300**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1553	0.0000	0.1553	0.0617	0.0000	0.0617	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1359	1.4566	1.0891	2.3300e-003		0.0613	0.0613		0.0564	0.0564	0.0000	204.5045	204.5045	0.0661	0.0000	206.1580
Total	**0.1359**	**1.4566**	**1.0891**	**2.3300e-003**	**0.1553**	**0.0613**	**0.2166**	**0.0617**	**0.0564**	**0.1181**	**0.0000**	**204.5045**	**204.5045**	**0.0661**	**0.0000**	**206.1580**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3700e-003	1.6500e-003	0.0187	5.0000e-005	5.5100e-003	3.0000e-005	5.5400e-003	1.4700e-003	3.0000e-005	1.5000e-003	0.0000	4.8822	4.8822	1.6000e-004	1.5000e-004	4.9300
Total	**2.3700e-003**	**1.6500e-003**	**0.0187**	**5.0000e-005**	**5.5100e-003**	**3.0000e-005**	**5.5400e-003**	**1.4700e-003**	**3.0000e-005**	**1.5000e-003**	**0.0000**	**4.8822**	**4.8822**	**1.6000e-004**	**1.5000e-004**	**4.9300**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7100e-003	0.0156	0.0164	3.0000e-005		8.1000e-004	8.1000e-004		7.6000e-004	7.6000e-004	0.0000	2.3173	2.3173	5.6000e-004	0.0000	2.3311
Total	**1.7100e-003**	**0.0156**	**0.0164**	**3.0000e-005**		**8.1000e-004**	**8.1000e-004**		**7.6000e-004**	**7.6000e-004**	**0.0000**	**2.3173**	**2.3173**	**5.6000e-004**	**0.0000**	**2.3311**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	9.9000e-004	2.7000e-004	0.0000	1.2000e-004	1.0000e-005	1.3000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.3604	0.3604	0.0000	5.0000e-005	0.3767
Worker	2.0000e-004	1.4000e-004	1.5400e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4036	0.4036	1.0000e-005	1.0000e-005	0.4075
Total	**2.4000e-004**	**1.1300e-003**	**1.8100e-003**	**0.0000**	**6.1000e-004**	**1.0000e-005**	**6.3000e-004**	**1.6000e-004**	**1.0000e-005**	**1.7000e-004**	**0.0000**	**0.7639**	**0.7639**	**1.0000e-005**	**6.0000e-005**	**0.7842**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7100e-003	0.0156	0.0164	3.0000e-005		8.1000e-004	8.1000e-004		7.6000e-004	7.6000e-004	0.0000	2.3173	2.3173	5.6000e-004	0.0000	2.3311
Total	**1.7100e-003**	**0.0156**	**0.0164**	**3.0000e-005**		**8.1000e-004**	**8.1000e-004**		**7.6000e-004**	**7.6000e-004**	**0.0000**	**2.3173**	**2.3173**	**5.6000e-004**	**0.0000**	**2.3311**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	9.9000e-004	2.7000e-004	0.0000	1.1000e-004	1.0000e-005	1.2000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.3604	0.3604	0.0000	5.0000e-005	0.3767
Worker	2.0000e-004	1.4000e-004	1.5400e-003	0.0000	4.6000e-004	0.0000	4.6000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4036	0.4036	1.0000e-005	1.0000e-005	0.4075
Total	**2.4000e-004**	**1.1300e-003**	**1.8100e-003**	**0.0000**	**5.7000e-004**	**1.0000e-005**	**5.8000e-004**	**1.5000e-004**	**1.0000e-005**	**1.6000e-004**	**0.0000**	**0.7639**	**0.7639**	**1.0000e-005**	**6.0000e-005**	**0.7842**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3462	301.3462	0.0717	0.0000	303.1383
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3462**	**301.3462**	**0.0717**	**0.0000**	**303.1383**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4700e-003	0.1035	0.0305	4.7000e-004	0.0155	6.6000e-004	0.0161	4.4700e-003	6.3000e-004	5.1000e-003	0.0000	45.0847	45.0847	2.2000e-004	6.8200e-003	47.1214
Worker	0.0234	0.0155	0.1838	5.5000e-004	0.0642	3.2000e-004	0.0645	0.0171	2.9000e-004	0.0174	0.0000	51.0808	51.0808	1.5400e-003	1.4500e-003	51.5508
Total	**0.0259**	**0.1190**	**0.2143**	**1.0200e-003**	**0.0797**	**9.8000e-004**	**0.0807**	**0.0215**	**9.2000e-004**	**0.0225**	**0.0000**	**96.1655**	**96.1655**	**1.7600e-003**	**8.2700e-003**	**98.6722**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3458	301.3458	0.0717	0.0000	303.1380
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3458**	**301.3458**	**0.0717**	**0.0000**	**303.1380**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4700e-003	0.1035	0.0305	4.7000e-004	0.0145	6.6000e-004	0.0151	4.2300e-003	6.3000e-004	4.8600e-003	0.0000	45.0847	45.0847	2.2000e-004	6.8200e-003	47.1214
Worker	0.0234	0.0155	0.1838	5.5000e-004	0.0592	3.2000e-004	0.0595	0.0158	2.9000e-004	0.0161	0.0000	51.0808	51.0808	1.5400e-003	1.4500e-003	51.5508
Total	**0.0259**	**0.1190**	**0.2143**	**1.0200e-003**	**0.0737**	**9.8000e-004**	**0.0747**	**0.0201**	**9.2000e-004**	**0.0210**	**0.0000**	**96.1655**	**96.1655**	**1.7600e-003**	**8.2700e-003**	**98.6722**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7223	303.7223	0.0718	0.0000	305.5179
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7223**	**303.7223**	**0.0718**	**0.0000**	**305.5179**

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4300e-003	0.1044	0.0301	4.7000e-004	0.0156	6.7000e-004	0.0163	4.5000e-003	6.4000e-004	5.1500e-003	0.0000	44.7257	44.7257	2.1000e-004	6.7500e-003	46.7437
Worker	0.0218	0.0137	0.1716	5.4000e-004	0.0647	3.0000e-004	0.0650	0.0172	2.8000e-004	0.0175	0.0000	50.0848	50.0848	1.3900e-003	1.3500e-003	50.5209
Total	**0.0242**	**0.1181**	**0.2017**	**1.0100e-003**	**0.0803**	**9.7000e-004**	**0.0813**	**0.0217**	**9.2000e-004**	**0.0226**	**0.0000**	**94.8105**	**94.8105**	**1.6000e-003**	**8.1000e-003**	**97.2646**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7220	303.7220	0.0718	0.0000	305.5175
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7220**	**303.7220**	**0.0718**	**0.0000**	**305.5175**

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4300e-003	0.1044	0.0301	4.7000e-004	0.0146	6.7000e-004	0.0153	4.2600e-003	6.4000e-004	4.9000e-003	0.0000	44.7257	44.7257	2.1000e-004	6.7500e-003	46.7437
Worker	0.0218	0.0137	0.1716	5.4000e-004	0.0597	3.0000e-004	0.0600	0.0160	2.8000e-004	0.0162	0.0000	50.0848	50.0848	1.3900e-003	1.3500e-003	50.5209
Total	**0.0242**	**0.1181**	**0.2017**	**1.0100e-003**	**0.0743**	**9.7000e-004**	**0.0752**	**0.0202**	**9.2000e-004**	**0.0211**	**0.0000**	**94.8105**	**94.8105**	**1.6000e-003**	**8.1000e-003**	**97.2646**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1477	1.3467	1.7371	2.9100e-003		0.0570	0.0570		0.0536	0.0536	0.0000	250.4730	250.4730	0.0589	0.0000	251.9450
Total	**0.1477**	**1.3467**	**1.7371**	**2.9100e-003**		**0.0570**	**0.0570**		**0.0536**	**0.0536**	**0.0000**	**250.4730**	**250.4730**	**0.0589**	**0.0000**	**251.9450**

3.5 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9600e-003	0.0858	0.0244	3.8000e-004	0.0129	5.5000e-004	0.0134	3.7100e-003	5.3000e-004	4.2400e-003	0.0000	36.2174	36.2174	1.7000e-004	5.4600e-003	37.8492
Worker	0.0167	0.0101	0.1316	4.3000e-004	0.0533	2.4000e-004	0.0536	0.0142	2.2000e-004	0.0144	0.0000	40.2897	40.2897	1.0300e-003	1.0300e-003	40.6233
Total	**0.0186**	**0.0958**	**0.1560**	**8.1000e-004**	**0.0662**	**7.9000e-004**	**0.0670**	**0.0179**	**7.5000e-004**	**0.0186**	**0.0000**	**76.5071**	**76.5071**	**1.2000e-003**	**6.4900e-003**	**78.4725**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1477	1.3467	1.7371	2.9100e-003		0.0570	0.0570		0.0536	0.0536	0.0000	250.4727	250.4727	0.0589	0.0000	251.9447
Total	**0.1477**	**1.3467**	**1.7371**	**2.9100e-003**		**0.0570**	**0.0570**		**0.0536**	**0.0536**	**0.0000**	**250.4727**	**250.4727**	**0.0589**	**0.0000**	**251.9447**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9600e-003	0.0858	0.0244	3.8000e-004	0.0120	5.5000e-004	0.0126	3.5100e-003	5.3000e-004	4.0400e-003	0.0000	36.2174	36.2174	1.7000e-004	5.4600e-003	37.8492
Worker	0.0167	0.0101	0.1316	4.3000e-004	0.0492	2.4000e-004	0.0494	0.0132	2.2000e-004	0.0134	0.0000	40.2897	40.2897	1.0300e-003	1.0300e-003	40.6233
Total	**0.0186**	**0.0958**	**0.1560**	**8.1000e-004**	**0.0612**	**7.9000e-004**	**0.0620**	**0.0167**	**7.5000e-004**	**0.0174**	**0.0000**	**76.5071**	**76.5071**	**1.2000e-003**	**6.4900e-003**	**78.4725**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0284	0.2803	0.4011	6.3000e-004		0.0140	0.0140		0.0129	0.0129	0.0000	55.0739	55.0739	0.0178	0.0000	55.5192
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0284**	**0.2803**	**0.4011**	**6.3000e-004**		**0.0140**	**0.0140**		**0.0129**	**0.0129**	**0.0000**	**55.0739**	**55.0739**	**0.0178**	**0.0000**	**55.5192**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-003	7.9000e-004	9.4100e-003	3.0000e-005	3.2900e-003	2.0000e-005	3.3000e-003	8.7000e-004	1.0000e-005	8.9000e-004	0.0000	2.6143	2.6143	8.0000e-005	7.0000e-005	2.6383
Total	**1.2000e-003**	**7.9000e-004**	**9.4100e-003**	**3.0000e-005**	**3.2900e-003**	**2.0000e-005**	**3.3000e-003**	**8.7000e-004**	**1.0000e-005**	**8.9000e-004**	**0.0000**	**2.6143**	**2.6143**	**8.0000e-005**	**7.0000e-005**	**2.6383**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0284	0.2803	0.4011	6.3000e-004		0.0140	0.0140		0.0129	0.0129	0.0000	55.0738	55.0738	0.0178	0.0000	55.5191
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0284**	**0.2803**	**0.4011**	**6.3000e-004**		**0.0140**	**0.0140**		**0.0129**	**0.0129**	**0.0000**	**55.0738**	**55.0738**	**0.0178**	**0.0000**	**55.5191**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-003	7.9000e-004	9.4100e-003	3.0000e-005	3.0300e-003	2.0000e-005	3.0500e-003	8.1000e-004	1.0000e-005	8.3000e-004	0.0000	2.6143	2.6143	8.0000e-005	7.0000e-005	2.6383
Total	**1.2000e-003**	**7.9000e-004**	**9.4100e-003**	**3.0000e-005**	**3.0300e-003**	**2.0000e-005**	**3.0500e-003**	**8.1000e-004**	**1.0000e-005**	**8.3000e-004**	**0.0000**	**2.6143**	**2.6143**	**8.0000e-005**	**7.0000e-005**	**2.6383**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9485					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9700e-003	0.0335	0.0498	8.0000e-005		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003	0.0000	7.0215	7.0215	4.0000e-004	0.0000	7.0313
Total	**1.9535**	**0.0335**	**0.0498**	**8.0000e-005**		**1.6800e-003**	**1.6800e-003**		**1.6800e-003**	**1.6800e-003**	**0.0000**	**7.0215**	**7.0215**	**4.0000e-004**	**0.0000**	**7.0313**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	5.6000e-004	6.9700e-003	2.0000e-005	2.6300e-003	1.0000e-005	2.6400e-003	7.0000e-004	1.0000e-005	7.1000e-004	0.0000	2.0350	2.0350	6.0000e-005	5.0000e-005	2.0527
Total	**8.9000e-004**	**5.6000e-004**	**6.9700e-003**	**2.0000e-005**	**2.6300e-003**	**1.0000e-005**	**2.6400e-003**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**2.0350**	**2.0350**	**6.0000e-005**	**5.0000e-005**	**2.0527**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9485					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9700e-003	0.0335	0.0498	8.0000e-005		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003	0.0000	7.0214	7.0214	4.0000e-004	0.0000	7.0313
Total	**1.9535**	**0.0335**	**0.0498**	**8.0000e-005**		**1.6800e-003**	**1.6800e-003**		**1.6800e-003**	**1.6800e-003**	**0.0000**	**7.0214**	**7.0214**	**4.0000e-004**	**0.0000**	**7.0313**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	5.6000e-004	6.9700e-003	2.0000e-005	2.4200e-003	1.0000e-005	2.4400e-003	6.5000e-004	1.0000e-005	6.6000e-004	0.0000	2.0350	2.0350	6.0000e-005	5.0000e-005	2.0527
Total	**8.9000e-004**	**5.6000e-004**	**6.9700e-003**	**2.0000e-005**	**2.4200e-003**	**1.0000e-005**	**2.4400e-003**	**6.5000e-004**	**1.0000e-005**	**6.6000e-004**	**0.0000**	**2.0350**	**2.0350**	**6.0000e-005**	**5.0000e-005**	**2.0527**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Pedestrian Network

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7483	1.1939	7.2400	0.0174	1.8224	0.0141	1.8365	0.4873	0.0133	0.5005	0.0000	1,645.1495	1,645.1495	0.0851	0.0832	1,672.0824
Unmitigated	0.7452	1.1850	7.1873	0.0172	1.8051	0.0140	1.8192	0.4826	0.0131	0.4958	0.0000	1,630.0148	1,630.0148	0.0846	0.0826	1,656.7488

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,671.18	1,671.18	1671.18	4,842,773	4,889,076
Total	1,671.18	1,671.18	1,671.18	4,842,773	4,889,076

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	45.60	19.00	35.40	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.541920	0.052620	0.169871	0.146633	0.025153	0.006100	0.012627	0.016953	0.000467	0.000322	0.022878	0.001103	0.003353

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	126.5705	126.5705	0.0205	2.4800e-003	127.8221
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	126.5705	126.5705	0.0205	2.4800e-003	127.8221
NaturalGas Mitigated	0.0221	0.1886	0.0803	1.2000e-003		0.0153	0.0153		0.0153	0.0153	0.0000	218.4167	218.4167	4.1900e-003	4.0000e-003	219.7146
NaturalGas Unmitigated	0.0221	0.1886	0.0803	1.2000e-003		0.0153	0.0153		0.0153	0.0153	0.0000	218.4167	218.4167	4.1900e-003	4.0000e-003	219.7146

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	4.09297e+006	0.0221	0.1886	0.0803	1.2000e-003		0.0153	0.0153		0.0153	0.0153	0.0000	218.4167	218.4167	4.1900e-003	4.0000e-003	219.7146
Total		**0.0221**	**0.1886**	**0.0803**	**1.2000e-003**		**0.0153**	**0.0153**		**0.0153**	**0.0153**	**0.0000**	**218.4167**	**218.4167**	**4.1900e-003**	**4.0000e-003**	**219.7146**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	4.09297e+006	0.0221	0.1886	0.0803	1.2000e-003		0.0153	0.0153		0.0153	0.0153	0.0000	218.4167	218.4167	4.1900e-003	4.0000e-003	219.7146
Total		**0.0221**	**0.1886**	**0.0803**	**1.2000e-003**		**0.0153**	**0.0153**		**0.0153**	**0.0153**	**0.0000**	**218.4167**	**218.4167**	**4.1900e-003**	**4.0000e-003**	**219.7146**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.36798e+006	126.5705	0.0205	2.4800e-003	127.8221
Total		**126.5705**	**0.0205**	**2.4800e-003**	**127.8221**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.36798e +006	126.5705	0.0205	2.4800e-003	127.8221
Total		**126.5705**	**0.0205**	**2.4800e-003**	**127.8221**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.4571	0.0795	1.3109	4.8000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	77.0432	77.0432	3.4500e-003	1.3700e-003	77.5388
Unmitigated	1.4571	0.0795	1.3109	4.8000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	77.0432	77.0432	3.4500e-003	1.3700e-003	77.5388

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1949					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2162					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.5700e-003	0.0647	0.0275	4.1000e-004		5.2300e-003	5.2300e-003		5.2300e-003	5.2300e-003	0.0000	74.9449	74.9449	1.4400e-003	1.3700e-003	75.3902
Landscaping	0.0385	0.0148	1.2833	7.0000e-005		7.1200e-003	7.1200e-003		7.1200e-003	7.1200e-003	0.0000	2.0983	2.0983	2.0100e-003	0.0000	2.1485
Total	**1.4571**	**0.0795**	**1.3109**	**4.8000e-004**		**0.0124**	**0.0124**		**0.0124**	**0.0124**	**0.0000**	**77.0432**	**77.0432**	**3.4500e-003**	**1.3700e-003**	**77.5388**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1949					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2162					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.5700e-003	0.0647	0.0275	4.1000e-004		5.2300e-003	5.2300e-003		5.2300e-003	5.2300e-003	0.0000	74.9449	74.9449	1.4400e-003	1.3700e-003	75.3902
Landscaping	0.0385	0.0148	1.2833	7.0000e-005		7.1200e-003	7.1200e-003		7.1200e-003	7.1200e-003	0.0000	2.0983	2.0983	2.0100e-003	0.0000	2.1485
Total	**1.4571**	**0.0795**	**1.3109**	**4.8000e-004**		**0.0124**	**0.0124**		**0.0124**	**0.0124**	**0.0000**	**77.0432**	**77.0432**	**3.4500e-003**	**1.3700e-003**	**77.5388**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	9.5361	0.2949	7.0700e-003	19.0153
Unmitigated	11.5203	0.3686	8.8300e-003	23.3654

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	11.2716 / 7.10604	11.5203	0.3686	8.8300e-003	23.3654
Total		**11.5203**	**0.3686**	**8.8300e-003**	**23.3654**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	9.01732 / 6.67257	9.5361	0.2949	7.0700e-003	19.0153
Total		**9.5361**	**0.2949**	**7.0700e-003**	**19.0153**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	40.1191	2.3710	0.0000	99.3935
Unmitigated	40.1191	2.3710	0.0000	99.3935

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	197.64	40.1191	2.3710	0.0000	99.3935
Total		**40.1191**	**2.3710**	**0.0000**	**99.3935**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	197.64	40.1191	2.3710	0.0000	99.3935
Total		**40.1191**	**2.3710**	**0.0000**	**99.3935**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-172.4000	0.0000	0.0000	-172.4000

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	40 / 0	-172.4000	0.0000	0.0000	-172.4000
Total		**-172.4000**	**0.0000**	**0.0000**	**-172.4000**

Source: EMFAC2021 (v1.0.1) Emissions Inventory
Region Type: County
Region: San Joaquin
Calendar Year: 2022, 2025
Season: Annual
Vehicle Classification: EMFAC202x Categories
Units: miles/year for CVMT and EVMT, trips/year for Trips, kWh/year for Energy Consumption, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	Fuel Consumption	**MPG (Derived)**		
San Joaquin	2022	All Other Buses	Aggregate	Aggregate	Diesel	64.18276106	983114.264	113.790052	**8.64**		
San Joaquin	2022	LDA	Aggregate	Aggregate	Gasoline	245832.5119	3415793856	121526.7684	**28.11**		
San Joaquin	2022	LDA	Aggregate	Aggregate	Diesel	747.597033	8552210.78	202.5712829	**42.22**		
San Joaquin	2022	LDT1	Aggregate	Aggregate	Gasoline	22627.08052	254906082	10869.91585	**23.45**		
San Joaquin	2022	LDT1	Aggregate	Aggregate	Diesel	7.047782881	28643.3341	1.17050914	**24.47**		
San Joaquin	2022	LDT2	Aggregate	Aggregate	Gasoline	97154.07981	1327006241	59035.46063	**22.48**		
San Joaquin	2022	LDT2	Aggregate	Aggregate	Diesel	248.8605386	3715266.01	118.6311075	**31.32**		
San Joaquin	2022	LHD1	Aggregate	Aggregate	Gasoline	10032.88768	112383474	12349.75639	**9.10**		
San Joaquin	2022	LHD1	Aggregate	Aggregate	Diesel	9047.421916	103983413	6588.299532	**15.78**		
San Joaquin	2022	LHD2	Aggregate	Aggregate	Gasoline	1192.956774	13475070.2	1640.891005	**8.21**		
San Joaquin	2022	LHD2	Aggregate	Aggregate	Diesel	3132.378704	37931319	2924.634355	**12.97**		
San Joaquin	2022	MCY	Aggregate	Aggregate	Gasoline	12156.83121	22852866.9	574.2253718	**39.80**		
San Joaquin	2022	MDV	Aggregate	Aggregate	Gasoline	95564.44336	1148172249	62988.61289	**18.23**		
San Joaquin	2022	MDV	Aggregate	Aggregate	Diesel	1375.554752	18880934.9	797.8242725	**23.67**		
San Joaquin	2022	MH	Aggregate	Aggregate	Gasoline	1600.88645	4527842.04	1026.718509	**4.41**		
San Joaquin	2022	MH	Aggregate	Aggregate	Diesel	647.0575838	1864836.86	198.2342323	**9.41**		
San Joaquin	2022	Motor Coach	Aggregate	Aggregate	Diesel	17.36532658	725245.332	132.125375	**5.49**		
San Joaquin	2022	OBUS	Aggregate	Aggregate	Gasoline	190.8863856	2783028.98	598.6307691	**4.65**		
San Joaquin	2022	PTO	Aggregate	Aggregate	Diesel	0	6090118.27	1257.295456	**4.84**		
San Joaquin	2022	SBUS	Aggregate	Aggregate	Gasoline	125.3894152	2223699.45	219.7856778	**10.12**		
San Joaquin	2022	SBUS	Aggregate	Aggregate	Diesel	485.9784004	3614694.55	443.7107543	**8.15**	**MHD**	
San Joaquin	2022	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	10.0890437	210293.223	23.84738494	**8.82**		**8.35**
San Joaquin	2022	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	13.58227373	288484.486	32.62553013	**8.84**		
San Joaquin	2022	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	41.03348839	753818.215	84.43793674	**8.93**		
San Joaquin	2022	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	72.78191568	4728328.86	495.7091624	**9.54**		
San Joaquin	2022	T6 Instate Delivery C	Aggregate	Aggregate	Diesel	239.0980349	2541147.72	312.100003	**8.14**		
San Joaquin	2022	T6 Instate Delivery C	Aggregate	Aggregate	Diesel	153.4261699	1652891.97	204.7820753	**8.07**		
San Joaquin	2022	T6 Instate Delivery C	Aggregate	Aggregate	Diesel	669.7781872	7173217.66	882.4034098	**8.13**		
San Joaquin	2022	T6 Instate Delivery C	Aggregate	Aggregate	Diesel	121.8173307	2064596.8	253.4340811	**8.15**		
San Joaquin	2022	T6 Instate Other Cla	Aggregate	Aggregate	Diesel	458.6664735	5647630.51	670.5535241	**8.42**		
San Joaquin	2022	T6 Instate Other Cla	Aggregate	Aggregate	Diesel	1145.440922	15945159.9	1880.533752	**8.48**		
San Joaquin	2022	T6 Instate Other Cla	Aggregate	Aggregate	Diesel	900.2348993	11843070.7	1391.681049	**8.51**		
San Joaquin	2022	T6 Instate Other Cla	Aggregate	Aggregate	Diesel	546.2729605	7887492	908.6706235	**8.68**		
San Joaquin	2022	T6 Instate Tractor Cl	Aggregate	Aggregate	Diesel	10.69873229	156796.758	18.49124984	**8.48**		
San Joaquin	2022	T6 Instate Tractor Cl	Aggregate	Aggregate	Diesel	714.4980333	13263547.8	1484.370826	**8.94**		
San Joaquin	2022	T6 OOS Class 4	Aggregate	Aggregate	Diesel	5.824249623	120402.604	13.64837299	**8.82**		
San Joaquin	2022	T6 OOS Class 5	Aggregate	Aggregate	Diesel	7.810009498	165170.722	18.67768852	**8.84**		
San Joaquin	2022	T6 OOS Class 6	Aggregate	Aggregate	Diesel	23.64662077	431595.821	48.34053567	**8.93**		
San Joaquin	2022	T6 OOS Class 7	Aggregate	Aggregate	Diesel	39.99335241	3138238.3	328.4621548	**9.55**		
San Joaquin	2022	T6 Public Class 4	Aggregate	Aggregate	Diesel	32.46897249	328830.712	44.34689082	**7.41**		
San Joaquin	2022	T6 Public Class 5	Aggregate	Aggregate	Diesel	75.18627001	860300.203	112.646177	**7.64**		
San Joaquin	2022	T6 Public Class 6	Aggregate	Aggregate	Diesel	127.0726581	1381351.21	180.6444001	**7.65**		
San Joaquin	2022	T6 Public Class 7	Aggregate	Aggregate	Diesel	155.0745132	2102170.5	278.5009366	**7.55**		
San Joaquin	2022	T6 Utility Class 5	Aggregate	Aggregate	Diesel	33.0723596	420846.454	48.44157823	**8.69**		
San Joaquin	2022	T6 Utility Class 6	Aggregate	Aggregate	Diesel	6.301149589	79368.9293	9.17296451	**8.65**		
San Joaquin	2022	T6 Utility Class 7	Aggregate	Aggregate	Diesel	7.184731387	110634.864	12.6401735	**8.75**		
San Joaquin	2022	T6TS	Aggregate	Aggregate	Gasoline	579.4901376	8873213.88	1932.185198	**4.59**	**HHD**	
San Joaquin	2022	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	1465.651998	94322580.1	15770.2762	**5.98**		**5.53**
San Joaquin	2022	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1314.51908	111518369	18648.32321	**5.98**		
San Joaquin	2022	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	547.746265	40512642.7	6815.550603	**5.94**		
San Joaquin	2022	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	29.96782331	1613813.41	275.8291853	**5.85**		
San Joaquin	2022	T7 POAK Class 8	Aggregate	Aggregate	Diesel	130.9212733	4012315.2	701.2895659	**5.72**		
San Joaquin	2022	T7 POLA Class 8	Aggregate	Aggregate	Diesel	133.7447014	5448794.58	952.8299882	**5.72**		
San Joaquin	2022	T7 Public Class 8	Aggregate	Aggregate	Diesel	387.8868943	5120839.78	1005.029197	**5.10**		
San Joaquin	2022	T7 Single Concrete/T	Aggregate	Aggregate	Diesel	116.7544211	2677818.42	460.6989897	**5.81**		
San Joaquin	2022	T7 Single Dump Clas	Aggregate	Aggregate	Diesel	478.1812367	9536301.57	1654.245052	**5.76**		
San Joaquin	2022	T7 Single Other Clas	Aggregate	Aggregate	Diesel	984.7457086	17434952.9	2999.030833	**5.81**		
San Joaquin	2022	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	177.8487212	3596616.49	1442.776049	**2.49**		
San Joaquin	2022	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2518.433603	64864115.8	10747.18356	**6.04**		
San Joaquin	2022	T7 Utility Class 8	Aggregate	Aggregate	Diesel	22.55419755	333131.857	58.51013889	**5.69**		
San Joaquin	2022	T7IS	Aggregate	Aggregate	Gasoline	2.652755373	18719.5003	6.072843609	**3.08**		
San Joaquin	2022	UBUS	Aggregate	Aggregate	Gasoline	48.76869755	1201484.84	255.7319762	**4.70**		
San Joaquin	2022	UBUS	Aggregate	Aggregate	Diesel	81.19085432	1839458.61	209.6089245	**8.78**		
San Joaquin	2025	All Other Buses	Aggregate	Aggregate	Diesel	67.92171408	1008649.64	115.4389681	**8.74**		
San Joaquin	2025	LDA	Aggregate	Aggregate	Gasoline	247812.193	3492700281	118201.3801	**29.55**		
San Joaquin	2025	LDA	Aggregate	Aggregate	Diesel	620.8563183	6911454.9	159.5928886	**43.31**		
San Joaquin	2025	LDT1	Aggregate	Aggregate	Gasoline	20969.62889	244462724	9908.364365	**24.67**		
San Joaquin	2025	LDT1	Aggregate	Aggregate	Diesel	5.057977491	19015.1044	0.774762876	**24.54**		
San Joaquin	2025	LDT2	Aggregate	Aggregate	Gasoline	105887.2734	1491240807	62119.72849	**24.01**		
San Joaquin	2025	LDT2	Aggregate	Aggregate	Diesel	305.5941154	4704771.26	142.5143879	**33.01**		
San Joaquin	2025	LHD1	Aggregate	Aggregate	Gasoline	9450.489324	109731396	11412.81478	**9.61**		
San Joaquin	2025	LHD1	Aggregate	Aggregate	Diesel	8447.684296	95550048.1	6010.794683	**15.90**		

San Joaquin	2025	LHD2	Aggregate	Aggregate	Gasoline	1129.168714	12915271.7	1504.493476	**8.58**
San Joaquin	2025	LHD2	Aggregate	Aggregate	Diesel	3098.911716	36654158.2	2777.276916	**13.20**
San Joaquin	2025	MCY	Aggregate	Aggregate	Gasoline	12009.69999	22426985.7	554.841798	**40.42**
San Joaquin	2025	MDV	Aggregate	Aggregate	Gasoline	92446.53152	1129031435	58653.64404	**19.25**
San Joaquin	2025	MDV	Aggregate	Aggregate	Diesel	1393.091492	18027336.1	742.2377967	**24.29**
San Joaquin	2025	MH	Aggregate	Aggregate	Gasoline	1345.73466	3838358.07	869.8310644	**4.41**
San Joaquin	2025	MH	Aggregate	Aggregate	Diesel	631.6240768	1783209.86	189.7527239	**9.40**
San Joaquin	2025	Motor Coach	Aggregate	Aggregate	Diesel	18.80772922	734238.384	132.2519529	**5.55**
San Joaquin	2025	OBUS	Aggregate	Aggregate	Gasoline	170.8324994	2390052.89	497.8515618	**4.80**
San Joaquin	2025	PTO	Aggregate	Aggregate	Diesel	0	6272891.87	1243.092383	**5.05**
San Joaquin	2025	SBUS	Aggregate	Aggregate	Gasoline	131.6189784	2377713.36	233.2858287	**10.19**
San Joaquin	2025	SBUS	Aggregate	Aggregate	Diesel	490.2787139	3547837.12	431.8825669	**8.21**
San Joaquin	2025	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	10.57610418	217695.643	24.19520454	**9.00**
San Joaquin	2025	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	14.00551629	299131.801	33.26474705	**8.99**
San Joaquin	2025	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	47.29566683	776366.856	84.99709252	**9.13**
San Joaquin	2025	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	78.11014265	4920888.12	500.9743873	**9.82**
San Joaquin	2025	T6 Instate Delivery C	Aggregate	Aggregate	Diesel	252.424868	2644503.24	317.9642821	**8.32**
San Joaquin	2025	T6 Instate Delivery C	Aggregate	Aggregate	Diesel	162.4907366	1721270.98	207.9013282	**8.28**
San Joaquin	2025	T6 Instate Delivery C	Aggregate	Aggregate	Diesel	708.1406495	7466807.32	897.8999389	**8.32**
San Joaquin	2025	T6 Instate Delivery C	Aggregate	Aggregate	Diesel	127.2799027	2161896.47	257.7010729	**8.39**
San Joaquin	2025	T6 Instate Other Cla	Aggregate	Aggregate	Diesel	457.3843802	5877813.57	686.4083684	**8.56**
San Joaquin	2025	T6 Instate Other Cla	Aggregate	Aggregate	Diesel	1233.945904	16615339.9	1936.948273	**8.58**
San Joaquin	2025	T6 Instate Other Cla	Aggregate	Aggregate	Diesel	939.5521797	12333897.2	1429.638292	**8.63**
San Joaquin	2025	T6 Instate Other Cla	Aggregate	Aggregate	Diesel	601.2468734	8213942.3	936.9187819	**8.77**
San Joaquin	2025	T6 Instate Tractor Cl	Aggregate	Aggregate	Diesel	11.09411194	162636.728	18.98089348	**8.57**
San Joaquin	2025	T6 Instate Tractor Cl	Aggregate	Aggregate	Diesel	742.8431118	13802724.4	1522.174701	**9.07**
San Joaquin	2025	T6 OOS Class 4	Aggregate	Aggregate	Diesel	6.191325924	126520.831	13.89828216	**9.10**
San Joaquin	2025	T6 OOS Class 5	Aggregate	Aggregate	Diesel	8.158025029	173563.829	19.10165507	**9.09**
San Joaquin	2025	T6 OOS Class 6	Aggregate	Aggregate	Diesel	27.75525515	453527.25	48.89681922	**9.28**
San Joaquin	2025	T6 OOS Class 7	Aggregate	Aggregate	Diesel	42.05361037	3297707.06	332.8593114	**9.91**
San Joaquin	2025	T6 Public Class 4	Aggregate	Aggregate	Diesel	30.96340517	327842.68	42.76001382	**7.67**
San Joaquin	2025	T6 Public Class 5	Aggregate	Aggregate	Diesel	77.40598482	869203.844	111.606731	**7.79**
San Joaquin	2025	T6 Public Class 6	Aggregate	Aggregate	Diesel	124.4648645	1387327.51	176.7337032	**7.85**
San Joaquin	2025	T6 Public Class 7	Aggregate	Aggregate	Diesel	148.2002736	2103649.58	267.2910594	**7.87**
San Joaquin	2025	T6 Utility Class 5	Aggregate	Aggregate	Diesel	33.80713566	427833.947	48.06448058	**8.90**
San Joaquin	2025	T6 Utility Class 6	Aggregate	Aggregate	Diesel	6.404694197	80731.1835	9.043234548	**8.93**
San Joaquin	2025	T6 Utility Class 7	Aggregate	Aggregate	Diesel	7.233394318	112132.632	12.46881994	**8.99**
San Joaquin	2025	T6TS	Aggregate	Aggregate	Gasoline	531.0756316	8934143.57	1862.590487	**4.80**
San Joaquin	2025	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	1559.383676	99045693.2	15966.77291	**6.20**
San Joaquin	2025	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	1399.986354	118494949	18565.26766	**6.38**
San Joaquin	2025	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	592.9033383	43047110.1	6907.520992	**6.23**
San Joaquin	2025	T7 Other Port Class {	Aggregate	Aggregate	Diesel	31.09466321	1801298.82	301.2206022	**5.98**
San Joaquin	2025	T7 POAK Class 8	Aggregate	Aggregate	Diesel	137.4284865	4268358.61	728.20542	**5.86**
San Joaquin	2025	T7 POLA Class 8	Aggregate	Aggregate	Diesel	157.478818	6193144.48	1066.910146	**5.80**
San Joaquin	2025	T7 Public Class 8	Aggregate	Aggregate	Diesel	386.4284577	5184020.71	985.2844376	**5.26**
San Joaquin	2025	T7 Single Concrete/T	Aggregate	Aggregate	Diesel	121.0999578	2662430.63	445.7482649	**5.97**
San Joaquin	2025	T7 Single Dump Clas	Aggregate	Aggregate	Diesel	518.3758674	9626829.16	1662.437597	**5.79**
San Joaquin	2025	T7 Single Other Clas	Aggregate	Aggregate	Diesel	1163.187559	18274499.1	3087.884625	**5.92**
San Joaquin	2025	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	167.5568448	3389049.07	1318.861734	**2.57**
San Joaquin	2025	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2947.082282	68517023.3	11148.15001	**6.15**
San Joaquin	2025	T7 Utility Class 8	Aggregate	Aggregate	Diesel	24.5522509	342122.268	58.52858431	**5.85**
San Joaquin	2025	T7IS	Aggregate	Aggregate	Gasoline	1.372290651	17754.5231	4.872376123	**3.64**
San Joaquin	2025	UBUS	Aggregate	Aggregate	Gasoline	50.67993554	1248539.35	265.760222	**4.70**
San Joaquin	2025	UBUS	Aggregate	Aggregate	Diesel	73.34639924	1627535.46	172.1102373	**9.46**

On-road Mobile (Operational) Energy Usage

Note: Assumes that all vehicles that are generated as part of proposed project use gasoline as a fuel source (for simplicity), since the vast majority of vehicles generated by the project would use gasoline.

Unmitigated:

Step 1:

Therefore:

Average Daily VMT:

1,671 Source: Kittelson & Associates, 2022 (Kiper Indelicato Transportation Impact Analysis)

Step 2: Given:

Fleet Mix (CalEEMod Output)

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
54.19%	5.26%	16.99%	14.66%	2.52%	0.61%	1.26%	1.70%	0.05%	0.03%	2.29%	0.11%	0.34%

And:

Gasoline MPG Factors for each Vehicle Class - Year 2025 (EMFAC2021 Output)

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
29.55	24.67	24.01	19.25	9.61	8.58	N/A	N/A	4.80	4.70	40.42	10.19	4.41

Therefore:

Weighted Average MPG Factors

Gasoline: **25.5**

Step 3: **Therefore:**

66 **daily gallons of gasoline**

or

23,955 **annual gallons of gasoline**

Off-road (i.e. On-site) Mobile (Construction) Energy Usage

Note: For the sake of simplicity, and as a conservative estimation, it was assumed that all off-road vehicles use diesel fuel as an energy source.
Site preparation and grading off-road mobile vehicle on-site gallons of fuel are calculated below.

Given Factor:	**223.0**	**metric tons**	**CO2**	**(provided in CalEEMod Output File)**	
Conversion Factor:	2204.6262	pounds	per metric ton		
Intermediate Result:	**491,660**	**pounds**	**CO2**		
Conversion Factor:	22.38	pounds	CO2 per 1 gallon of diesel fuel		Source: U.S. EIA, 2016
Final Result:	**21,969**	**gallons**	**diesel fuel**		http://www.eia.gov/tools/faqs/faq.cfm?id=307&t=11

Mitigated Onsite Scenario	Total CO2 (MT/yr) (provided in CalEEMod Output File)
Site Preparation	16.8549
Grading	206.1580

On-road Mobile (Construction) Energy Usage - Site Preparation

Note: Year 2022 MPG factors were derived for construction-releated energy consumption (for the sake of a conservative estimate).

Step 1: **Total Daily Worker Trips (CalEEMod Output)**

18

Worker Trip Length (miles) (CalEEMod Output)

10.8

Therefore:

Average Worker Daily VMT:

194

Step 2: Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

LDA	LDT1	LDT2
0.5	0.25	0.25

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2021) - Year 2022

LDA	LDT1	LDT2
28.11	23.45	22.48

Therefore:

Weighted Average Worker MPG Factor

25.54

Step 3: **Therefore:**

8 **Worker daily gallons of gasoline**

Step 4: 10 **# of Days (CalEEMod Output)**

Therefore:

Result: **76** **Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Grading

Note: Year 2022 MPG factors were derived for construction-releated energy consumption (for the sake of a conservative estimate).

Step 1: **Total Daily Worker Trips (CalEEMod Output)**

20

Worker Trip Length (miles) (CalEEMod Output)

10.8

Therefore:

Average Worker Daily VMT:

216

Step 2: Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

LDA	**LDT1**	**LDT2**
0.5	0.25	0.25

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2021) - Year 2022

LDA	**LDT1**	**LDT2**
28.11	23.45	22.48

Therefore:

Weighted Average Worker MPG Factor

25.54

Step 3: **Therefore:**

8 Worker daily gallons of gasoline

Step 4: 75 **# of Days (CalEEMod Output)**

Therefore:

Result: **634 Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Building Construction

Note: Year 2022 MPG factors were derived for construction-releated energy consumption (for the sake of a conservative estimate).

Step 1:

Total Daily Worker Trips (CalEEMod Output)
62

Total Daily Vendor Trips (CalEEMod Output)
18

Worker Trip Length (miles) (CalEEMod Output)
10.8

Vendor Trip Length (miles) (CalEEMod Output)
7.3

Therefore:

Average Worker Daily VMT:
670

Average Vendor Daily VMT:
131

Step 2:

Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

LDA	**LDT1**	**LDT2**
0.5	0.25	0.25

Assumed Fleet Mix for Vendors

Fleet Mix for Workers (CalEEMod Output)

MHD	**HHD**
0%	100%

And:

MPG Factors for each Vehicle Class (from EMFAC2021) - Year 2022

Gasoline:

LDA	**LDT1**	**LDT2**
28.11	23.45	22.48

Diesel:

MHD	**HHD**
8.35	5.53

Therefore:

Weighted Average Worker (Gasoline) MPG Factor
25.54

Weighted Average Vendor (Diesel) MPG Factor
5.53

Step 3:

Therefore:
26 Worker daily gallons of gasoline

Therefore:
24 Vendor daily gallons of diesel

Step 4:

740 **# of Days (CalEEMod Output)**

Therefore:
19,404 Total gallons of gasoline

Therefore:
17,583 Total gallons of diesel

On-road Mobile (Construction) Energy Usage - Paving

Note: Year 2022 MPG factors were derived for construction-releated energy consumption (for the sake of a conservative estimate).

Step 1: **Total Daily Worker Trips (CalEEMod Output)**

15

Worker Trip Length (miles) (CalEEMod Output)

10.8

Therefore:

Average Worker Daily VMT:

162

Step 2: Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

LDA	LDT1	LDT2
0.5	0.25	0.25

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2021) - Year 2022

LDA	LDT1	LDT2
28.11	23.45	22.48

Therefore:

Weighted Average Worker MPG Factor

25.5

Step 3: **Therefore:**

6 Worker daily gallons of gasoline

Step 4: 55 **# of Days (CalEEMod Output)**

Therefore:

Result: **349 Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Architectural Coating

Note: Year 2022 MPG factors were derived for construction-releated energy consumption (for the sake of a conservative estimate).

Step 1: **Total Daily Worker Trips (CalEEMod Output)**

12

Worker Trip Length (miles) (CalEEMod Output)

10.8

Therefore:

Average Worker Daily VMT:

130

Step 2: Given:

Assumed Fleet Mix for Workers (Percentage mix is provided on Appendix A: Calculation Details for CalEEMOD p. 15)

LDA	LDT1	LDT2
0.5	0.25	0.25

And:

Gasoline MPG Factors for each Vehicle Class (EMFAC2021 Output) - Year 2022

LDA	LDT1	LDT2
28.11	23.45	22.48

Therefore:

Weighted Average Worker MPG Factor

25.5

Step 3: **Therefore:**

5 Worker daily gallons of gasoline

Step 4: 55 **# of Days (CalEEMod Output)**

Therefore:

Result: **279** **Total gallons of gasoline**

APPENDIX B: CULTURAL RESOURCES REPORT

CULTURAL RESOURCE ASSESSMENT FOR THE INDELICATO PROPERTY SUBDIVISION, CITY OF MANTECA, SAN JOAQUIN COUNTY, CALIFORNIA

Prepared by

Peak & Associates, Inc.
3941 Park Drive, Suite 20 PMB 329
El Dorado Hills, CA 95762
(916) 939-2405

Prepared for

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762

December 22, 2021
(Job #21-061)

INTRODUCTION

The Indelicato Project site includes approximately 40 acres located in the northern portion of the City of Manteca, east of Airport Way, in San Joaquin, California. The Project site is identified as Assessor's Parcel Number (APN) 204-100-520, by the San Joaquin County Assessor's Office. The Project site is bound by Airport Way to the west, a single-family residential neighborhood to the south and east, and agricultural land to the north (Figure 1).

There are no structures on the Project site, but there are overhead power lines located on the western side of the Project site along Airport Way.

The proposed Project includes the annexation of 40 acres of land into the City of Manteca for the subdivision and development of 173 residential units, construction of a 2.85-acre Park/Basin (Lot A), and installation of frontage/entry landscaping.

The residential density is approximately 4.3 units/acre, with typical lot sizes of 50 feet by 100 feet or 5,000 square feet (89 lots), and 60 feet by 100 feet (84 lots). Each lot would contain a two-car garage and two driveway parking spaces. All facilities would be removed, including wells, irrigation facilities, and electric lines, per City of Manteca standards and specifications (Figure 2).

Residences would back on Airport Way, consistent with the existing residential orientation along the street. Access to the subdivision will occur from two locations on the west site of the subdivision along Airport Way. The internal circulation design includes roadway stubs to access the property to the north in accordance with the City's requirements.

The annexation will include detachment from the Lathrop Manteca Fire District.

The project site is designated LDR (Low Density Residential) by the Manteca General Plan land use map. The allowed density within the City's LDR designation is 2.1 to 8 dwelling units per acre. With 173 units on approximately 40 acres, the proposed density would be 4.3 dwelling units per acre, which is within the allowed density range. The City's pre-zoning for the entire site will be R-1 (One Family Dwelling), which is consistent with the LDR land use designation of the Manteca General Plan.

A General Plan Amendment would not be required for the project.

The Project site is located within the northwest quarter of Section 19 of Township 1 South, Range 7 East Mount Diablo Base and Meridian (MDBM), mapped on the USGS 7.5' Lathrop and Manteca, California, 7.5-minute series quadrangle maps (Figure 2).

KIPER HOMES

AT INDELICATO PROPERTY, MANTECA, CA

LEGEND

50' X 100' - 89 LOTS

60' X 100' - 84 LOTS

* = 20' NO PARKING

APN: 204-100-520

ADDRESS: 14050 S AIRPORT WAY MANTECA, CA 95336

FIGURE 1

LAND DEVELOPMENT CONCEPTUAL PLAN

MCR ENGINEERING, INC.
1242 DUPONT COURT
MANTECA, CA 95336
TEL: (209) 239-6229
FAX: (209) 239-8839

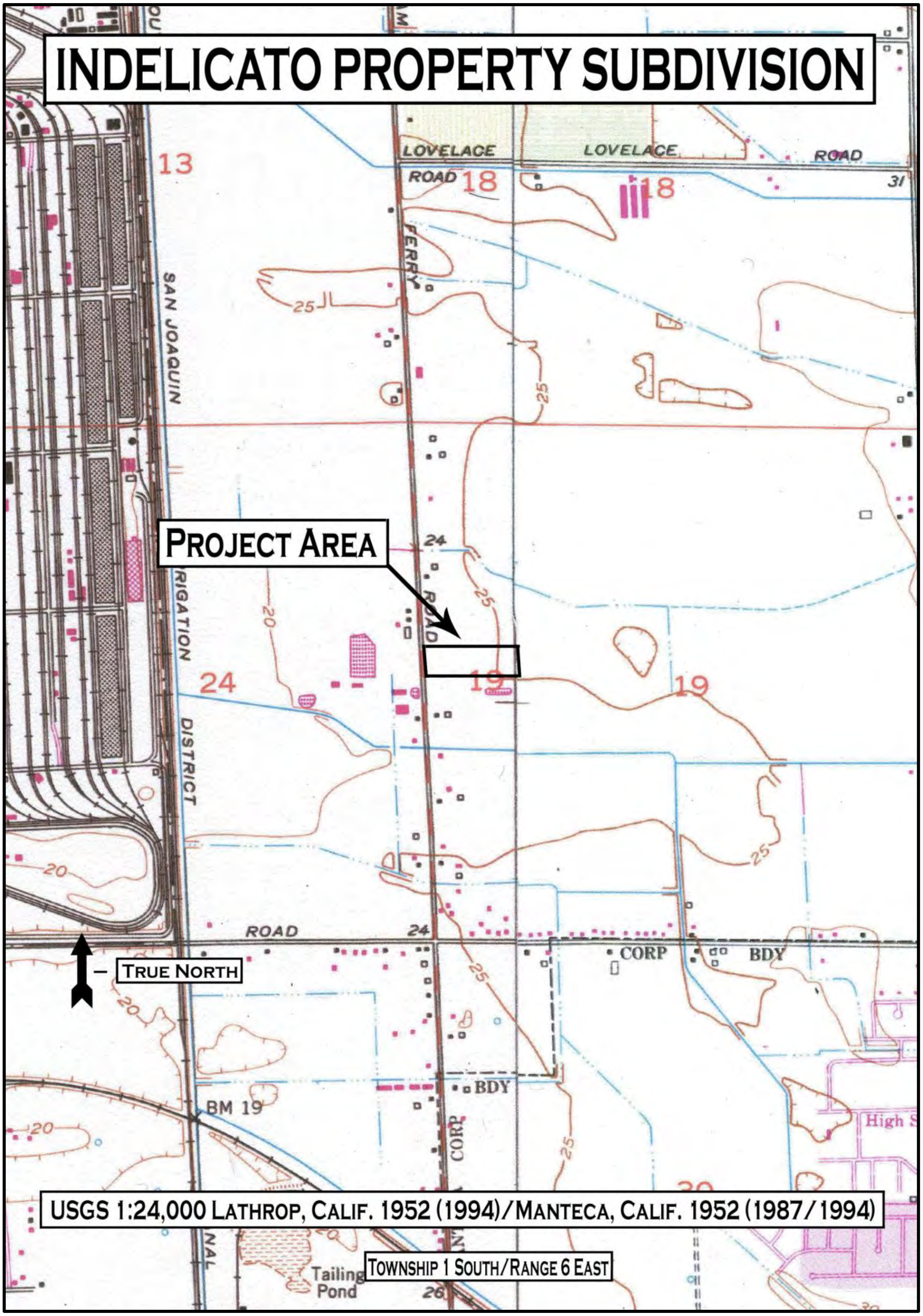

INDELICATO PROPERTY SUBDIVISION
LOVELACE ROAD
LOVELACE ROAD
13
18
18
SAN JOAQUIN IRRIGATION DISTRICT
FERRY ROAD
PROJECT AREA
24
19
19
ROAD
24
CORP BDY
BDY
TRUE NORTH
BM 19
Tailing Pond
USGS 1:24,000 LATHROP, CALIF. 1952 (1994)/MANTECA, CALIF. 1952 (1987/1994)
TOWNSHIP 1 SOUTH/RANGE 6 EAST

Figure 2

Melinda Peak served as principal investigator for the project, with Michael Lawson completing the field survey. Resumes are included in Appendix 1.

STATE REGULATIONS

State historic preservation regulations affecting this project include the statutes and guidelines contained in the California Environmental Quality Act (CEQA; Public Resources Code sections 21083.2 and 21084.1 and sections 15064.5 and 15126.4 (b) of the CEQA Guidelines). CEQA Section 15064.5 requires that lead agencies determine whether projects may have a significant effect on archaeological and historical resources. Public Resources Code Section 21098.1 further cites: A project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

An "historical resource" includes, but is not limited to, any object, building, structure, site, area, place, record or manuscript that is historically or archaeologically significant (Public Resources Code section 5020.1).

Advice on procedures to identify such resources, evaluate their importance, and estimate potential effects is given in several agency publications such as the series produced by the Governor's Office of Planning and Research (OPR), *CEQA and Archaeological Resources,* 1994. The technical advice series produced by OPR strongly recommends that Native American concerns and the concerns of other interested persons and corporate entities, including, but not limited to, museums, historical commissions, associations and societies be solicited as part of the process of cultural resources inventory. In addition, California law protects Native American burials, skeletal remains, and associated grave goods regardless of the antiquity and provides for the sensitive treatment and disposition of those remains (California Health and Safety Code Section 7050.5, California Public Resources Codes Sections 5097.94 et al).

The California Register of Historical Resources (Public Resources Code Section 5020 et seq.)

The State Historic Preservation Office (SHPO) maintains the California Register of Historical Resources (CRHR). Properties listed, or formally designated as eligible for listing, on the National Register of Historic Places are automatically listed on the CRHR, as are State Landmarks and Points of Interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

For the purposes of CEQA, an historical resource is a resource listed in, or determined eligible for listing in the California Register of Historical Resources. When a project will impact a site, it needs to be determined whether the site is an historical resource. The criteria are set forth in Section 15064.5(a) (3) of the CEQA Guidelines, and are defined as any resource that does any of the following:

A. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

B. Is associated with the lives of persons important in our past;

C. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

D. Has yielded, or may be likely to yield, information important in prehistory or history.

In addition, the CEQA Guidelines, Section 15064.5(a) (4) states:

The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code section 5020.1(j) or 5024.1.

California Health and Safety Code Sections 7050.5, 7051, And 7054

These sections collectively address the illegality of interference with human burial remains, as well as the disposition of Native American burials in archaeological sites. The law protects such remains from disturbance, vandalism, or inadvertent destruction, and establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project, including the treatment of remains prior to, during, and after evaluation, and reburial procedures.

California Public Resources Code Section 15064.5(e)

This law addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction. The section establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project and establishes the Native American Heritage Commission as the entity responsible to resolve disputes regarding the disposition of such remains.

Senate Bill 18

Senate Bill (SB) 18, requires local (city and county) governments to consult with California Native American tribes to aid in the protection of traditional tribal cultural places ("cultural places") through local land use planning. This legislation, which amended §65040.2, §65092, §65351, §65352, and §65560, and added §65352.3, §653524, and §65562.5 to the Government Code; also requires the Governor's Office of Planning and Research (OPR) to include in the General Plan Guidelines advice to local governments on how to conduct these consultations. The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places. These consultation and notice requirements apply to adoption and amendment of both general plans (defined in Government Code §65300 et seq.) and specific plans (defined in Government Code §65450 et seq.).

Assembly Bill 52

Assembly Bill (AB) 52 establishes a formal consultation process for California tribes as part of CEQA and equates significant impacts on tribal cultural resources with significant environmental impacts. AB 52 defines a "California Native American Tribe" as a Native American tribe located in California that is on the contact list maintained by the Native American Heritage Commission. AB 52 requires formal consultation with California Native American Tribes prior to determining the level of environmental document if a tribe has requested to be informed by the lead agency of proposed projects. AB 52 also requires that consultation address project alternatives, mitigation measures, for significant effects, if requested by the California Native American Tribe, and that consultation be considered concluded when either the parties agree to measures to mitigate or avoid a significant effect, or the agency concludes that mutual agreement cannot be reached. Under AB 52, such measures shall be recommended for inclusion in the environmental document and adopted mitigation monitoring program if determined to avoid or lessen a significant impact on a tribal cultural resource.

CULTURAL SETTING

Prehistory

The Central Valley region was among the first in the state to attract intensive fieldwork, and research has continued to the present day. This has resulted in a substantial accumulation of data.

In the early decades of the 1900s, E.J. Dawson explored numerous sites near Stockton and Lodi, later collaborating with W.E. Schenck (Schenck and Dawson 1929). By 1933, the focus of work was directed to the Cosumnes locality, where survey and excavation studies were conducted by the Sacramento Junior College (Lillard and Purves 1936). Excavation data, in particular from the stratified Windmiller site (CA-Sac-107), suggested two temporally distinct cultural traditions. Later work at other mounds by Sacramento Junior College and the University of California, Berkeley, enabled the investigators to identify a third cultural tradition, intermediate between the previously postulated Early and Late Horizons. The three-horizon sequence, based on discrete changes in ornamental artifacts and mortuary practices, as well as on observed differences in soils within sites (Lillard, Heizer and Fenenga 1939), was later refined by Beardsley (1954). An expanded definition of artifacts diagnostic of each time period was developed, and its application extended to parts of the central California coast. Traits held in common allow the application of this system within certain limits of time and space to other areas of prehistoric central California.

The Windmiller Culture (Early Horizon) is characterized by ventrally-extended burials (some dorsal extensions are known), with westerly orientation of heads; a high percentage of burials with grave goods; frequent presence of red ocher in graves; large projectile points, of which 60 percent are of materials other than obsidian; rectangular *Haliotis* beads; *Olivella* shell beads (types A1a and L); rare use of bone; some use of baked clay objects; and well-fashioned charm stones, usually perforated.

The Cosumnes Culture (Middle Horizon) displays considerable changes from the preceding cultural expression. The burial mode is predominately flexed, with variable cardinal orientation and some cremations present. There are a lower percentage of burials with grave goods, and ocher staining is common in graves. *Olivella* beads of types C1, F and G predominate, and there is abundant use of green *Haliotis sp.* rather than red *Haliotis sp.* Other characteristic artifacts include perforated and canid teeth; asymmetrical and "fishtail" charm stones, usually unperforated; cobble mortars and evidence of wooden mortars; extensive use of bone for tools and ornaments; large projectile points, with considerable use of rock other than obsidian; and use of baked clay.

Hotchkiss Culture (Late Horizon) -- The burial pattern retains the use of the flexed mode, and there is wide spread evidence of cremation, lesser use of red ocher, heavy use of baked clay, *Olivella* beads of Types E and M, extensive use of *Haliotis* ornaments of many elaborate shapes and forms, shaped mortars and cylindrical pestles, bird-bone tubes with elaborate geometric designs, clam shell disc beads, small projectile points indicative of the introduction of the bow and arrow, flanged tubular pipes of steatite and schist, and use of magnesite (Moratto 1984:181-183). The characteristics noted are not all-inclusive, but cover the more important traits.

Schulz (1981), in an extensive examination of the central California evidence for the use of acorns, used the terms Early, Middle and Late Complexes, but the traits attributed to them remain generally the same. While it is not altogether clear, Schulz seemingly uses the term “Complex” to refer to the particular archeological entities (above called “Horizons”) as defined in this region. Ragir's (1972) cultures are the same as Schulz’s complexes.

Bennyhoff and Hughes (1984) have presented alternative dating schemes for the Central California Archeological Sequence. The primary emphasis is a more elaborate division of the horizons to reflect what is seen as cultural/temporal changes within the three horizons and a compression of the temporal span.

There have been other chronologies proposed, including Fredrickson (1973), and since it is correlated with Bennyhoff's (1977) work, it does merit discussion. The particular archeological cultural entities Fredrickson has defined, based upon the work of Bennyhoff, are patterns, phases and aspects. Bennyhoff's (1977) work in the Plains Miwok area is the best definition of the Cosumnes District, which likely conforms to Fredrickson's pattern. Fredrickson also proposed periods of time associated heavily with economic modes, which provides a temporal term for comparing contemporary cultural entities. It corresponds with Willey and Phillips’ (1958) earlier “tradition”, although it is tied more specifically to the archeological record in California.

Ethnohistory

The Project site lies within the northern portion of the ethnographic territory of the Yokuts people. The Yokuts were members of the Penutian language family which held all of the Central Valley, San Francisco Bay Area, and the Pacific Coast from Marin County to near Point Sur. The Yokuts

differed from other ethnographic groups in California as they had true tribal divisions with group names (Kroeber 1925; Latta 1949). Each tribe spoke a particular dialect, common to its members, but similar enough to other Yokuts that they were mutually intelligible (Kroeber 1925).

The Yokuts held portions of the San Joaquin Valley from the Tehachapi mountains in the south to Stockton in the north. On the north they were bordered by the Plains Miwok, and on the west by the Saclan or Bay Miwok and Costonoan peoples. Although neighbors were often from distinct language families, differences between the people appear to have been more influenced by environmental factors as opposed to linguistic affinities. Thus, the Plains Miwok were more similar to the nearby Yokuts than to foothill members of their own language group. Similarities in cultural inventory co-varied with distance from other groups and proximity to culturally diverse people. The material culture of the southern San Joaquin Yokuts was therefore more closely related to that of their non-Yokuts neighbors than to that of Delta members of their own language group.

Trade was well developed, with mutually beneficial interchange of needed or desired goods. Obsidian, rare in the San Joaquin Valley, was obtained by trade with Paiute and Shoshoni groups on the eastern side of the Sierra Nevada, where numerous sources of this material are located, and to some extent from the Napa Valley to the north. Shell beads, obtained by the Yokuts from coastal people, and acorns, rare in the Great Basin, were among many items exported to the east by Yokuts traders (Davis 1961).

Economic subsistence was based on the acorn, with substantial dependency on gathering and processing of wild seeds and other vegetable foods. The rivers, streams, and sloughs that formed a maze within the valley provided abundant food resources such as fish, shellfish, and turtles. Game, wild fowl, and small mammals were trapped and hunted to provide protein augmentation of the diet. In general, the eastern portion of the San Joaquin Valley provided a lush environment of varied food resources, with the estimated large population centers reflecting this abundance (Cook 1955; Baumhoff 1963).

Settlements were oriented along the water ways, with their village sites normally placed adjacent to these features for their nearby water and food resources. House structures varied in size and shape (Latta 1949; Kroeber 1925), with most constructed from the readily available tules found in the extensive marshes of the low-lying valley areas. The housepit depressions for the structures ranged in diameter from 3 meters to 18 meters (Wallace 1978:470).

Historical Background

The first extensive wheat-growing in the San Joaquin Valley took place on the sand plains in the region between Stockton and Manteca and on the west side of the valley between Tracy and Newman. The wheat growing was due to an initial experiment of John Wheeler Jones, who planted 160 acres to wheat in 1855 which included the central town site of what is now Manteca. He plowed his fields with a walking plow. The famous Stockton gang-plow was reported to be invented near the present site of Manteca (Smith 1960: 221, 243).

When the Visalia Branch of the Central Pacific Railroad (later the Fresno Branch of the Southern Pacific) was completed through the San Joaquin Valley, a shipping point was set up in the region and named Cowell or Cowell Station for Joshua Cowell, who had donated the right of way for the railroad. Maps of the area printed in the early San Joaquin County history shows scattered ranches in the area on large tracts of land (Thompson and West 1879). The town became a supply center for the region.

The station was re-named Manteca in 1904 or 1905 by the Southern Pacific for a local creamery that had taken its name from the Spanish word for "butter" or "lard" (Gudde 1969: 191). Another version of the naming of the town is that the Southern Pacific misprinted the name of the "Monteca" as "Manteca", and would not change the spelling (Hillman and Covello 1985).

After irrigation systems were developed, the large tracts of land formerly cultivated by dry land crops such as grain could be converted to use for orchards, alfalfa, diversified crops and large-scale dairying. Within a short time after the completion of the first irrigation system in the region by the Stanislaus and San Joaquin Water Company, the population of the town grew from 80 to about 500. Further growth occurred with the creation of the South San Joaquin Irrigation District in 1909 and the completion of Goodwin Dam on the Stanislaus River and associated canals in 1913 (Hillman and Covello 1985).

Industries in the area were agricultural in nature for many years, with stockyards, dairy farms, pumpkins and sugar beets being important economically. The Spreckels Sugar Company opened a mill in 1918 that remained an important industry in the region.

The population of Manteca began to grow at a rapid rate in the early 1950s, with the town serving as a bedroom community for industrial plants in San Joaquin County communities. Beginning in the 1970s, improvements to community infrastructure and the attractive pricing of homes brought even more growth (Hillman and Covelo 1985). The pattern of rapid growth continues to this day, with industrial development in the area, as well as many residents commuting regularly to the Bay Area.

RESEARCH

Records of previously recorded cultural resources and cultural resource investigations were examined by the Central California Information Center of the California Historical Resources Information System on for the Project site and a ¼-mile radius (CCIC File # 11954L, Appendix 2) on October 25, 2021.

There are no resources recorded in the Project site. In the ¼-mile radius search area, a building complex consisting of a residence and a barn at 14580 Airport Way had been recorded as P-39-004994. The reviewer judged the complex to be not eligible for the California Register of Historical Resources.

The Project site is shown as included as part of report done for the Windmiller and Napoli in 2002 (SJ-04786). This is an overview, with limited survey, and most private property would not have been surveyed in 2002. One previous survey in 2004 may have covered the southern portion of the Project site.

Several other linear studies have been conducted in the record search radius (complete citations in the Report List in Appendix 2).

FIELD INVESTIGATIONS

The Project site was surveyed on November 12, 2021 by Michael Lawson of Peak & Associates. He investigated the property by walking linear transects spaced no more than ten meters apart across the entire property. Transects were narrowed in portions of the property such as locations where soils were disturbed by burrowing or vehicular travel (Figure 3).

The Project site is located on Airport Way in a mostly rural area used for agriculture, with newer housing developments to the south.

The terrain is flat, likely leveled for irrigation, with two elevations. The parcel is divided in the center by a 12' wide flat-topped berm running north-south. The eastern side is approximately twelve to eighteen inches higher than the western half. The berm also serves as an access road. The eastern half of parcel is fallow, and the western half has mature almond trees covering it.

The soil in the eastern half is uniformly a medium tan sandy loam with a moderate fraction of water-worn gravel consisting of quartzite, sandstone, and meta volcanic material, with a small amount of unidentified stone also present. Nothing larger than pebble-sized gravel was observed.

Soil in the western half is similar in nature but with a slightly higher loam content and a little darker tan shade. This is likely due to organic material from the orchard currently planted in place.

Native plants such as datura and nonnative plants are common on the eastern half of the parcel, but are less dense within the orchard on the west side.

Ground surface visibility was good, due to low density of vegetation and high disturbance from burrowing animals.

No prehistoric or historical resources were observed during the survey.

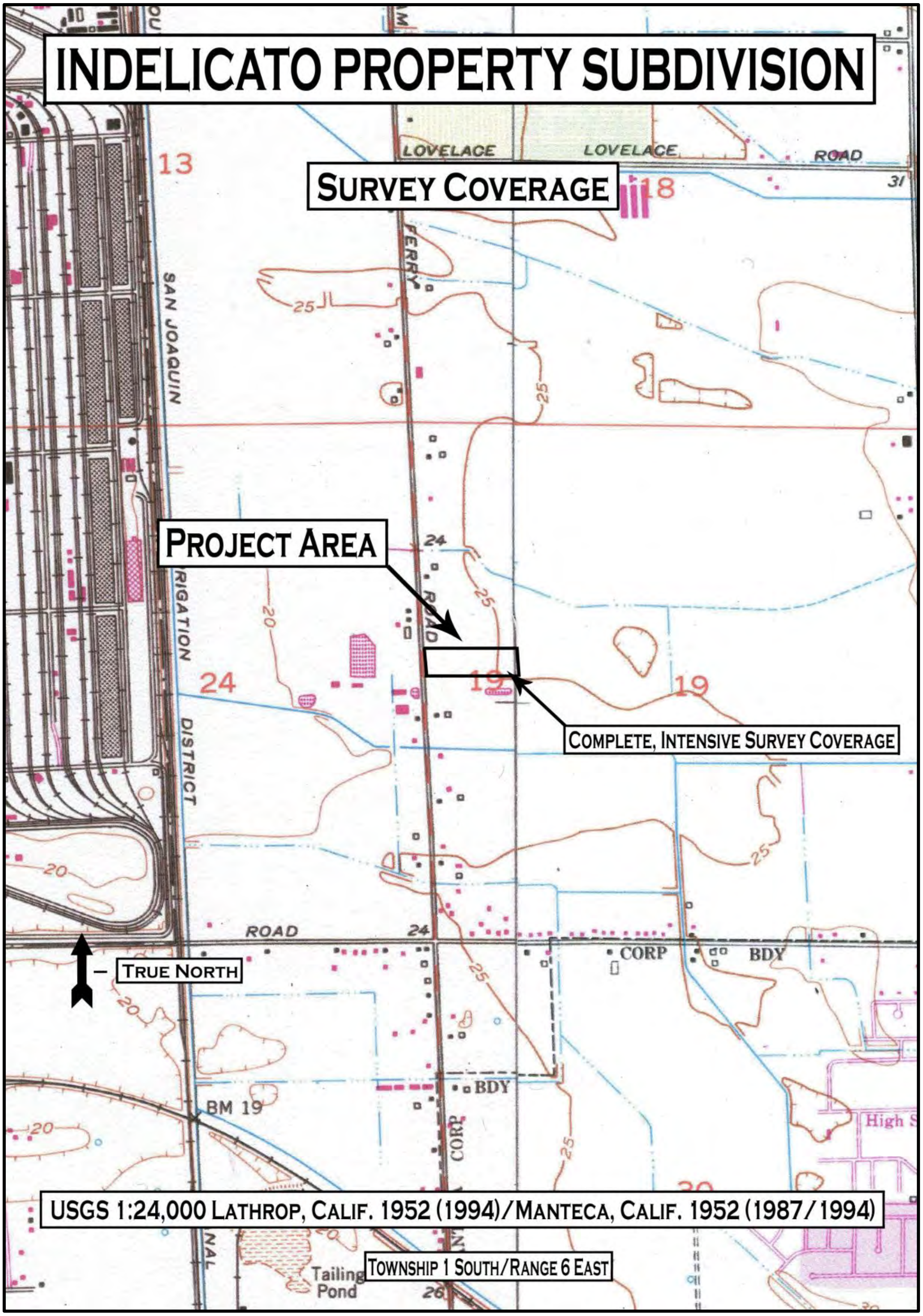

INDELICATO PROPERTY SUBDIVISION
SURVEY COVERAGE
PROJECT AREA
COMPLETE, INTENSIVE SURVEY COVERAGE
TRUE NORTH
USGS 1:24,000 LATHROP, CALIF. 1952 (1994)/MANTECA, CALIF. 1952 (1987/1994)
TOWNSHIP 1 SOUTH/RANGE 6 EAST
LOVELACE
LOVELACE
ROAD
FERRY
ROAD
SAN JOAQUIN
IRRIGATION
DISTRICT
ROAD
CORP
BDY
BDY
CORP
BM 19
Tailing Pond

Figure 3

RECOMMENDATIONS

Although unlikely, there is always a slight possibility that a site may exist in the Project site and be obscured by vegetation, siltation or historic activities, leaving no surface evidence. In order to assist in the recognition of cultural resources, a training session for all workers should be conducted in advance of the initiation of construction activities at the site. The training session will provide information on recognition of artifacts, human remains, and cultural deposits to help in the recognition of potential issues.

Discovery of Human Remains

In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area suspected to overlie adjacent remains until the San Joaquin County Coroner has determined that the remains are not subject to any provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains.

If the San Joaquin County Coroner determines that the remains are not subject to his or her authority and if the County Coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone the Native American Heritage Commission (NAHC).

After notification, the NAHC will follow the procedures outlined in Public Resources Code Section 5097.98, that include notification of most likely descendants (MLDs), and recommendations for treatment of the remains. The MLDs will have 48 hours after notification by the NAHC to make their recommendations (PRC Section 5097.98).

BIBLIOGRAPHY

Baumhoff, Martin A.

1963 Ecological Determinants of Aboriginal California Populations. *University of California Publications in American Archaeology and Ethnology* 49(2):155-236. Berkeley.

Beardsley, Richard K.

1954 Temporal and Areal Relationships in Central California Archeology (Parts 1 and 11). *University of California Archaeological Survey Reports* 24, 25. Berkeley.

Bennyhoff, James A.

1977 Ethnogeography of the Plains Miwok. *Center for Archaeological Research at Davis, Publications* 5. University of California, Davis.

Bennyhoff, James A. and Robert F. Heizer

1958 Cross-Dating Great Basin Sites by Californian Shell Beads. *University of California Archaeological Survey Report*, 42:60-92. Berkeley.

Cook, Sherburne F.

1955 The Aboriginal Populations of the San Joaquin Valley, California. *University of California Anthropological Records* 16(2). Berkeley.

Davis, James T.

1961 Trade Routes and Economic Exchange among the Indians of California. *University of California Archaeological Survey Reports* 54:1-71. Berkeley.

Fredrickson, David A.

1973 *Early Cultures of the North Coast Ranges, California*. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Davis.

Gilbert, Colonel F.T.

1879 *History of San Joaquin County, California*. Thompson & West, Oakland.

Gudde, Erwin

1969 *California Place Names: The Origin and Etymology of Current Geographical Names*. University of California Press, Berkeley.

Hillman, Raymond W. and Leonard A. Covello

1985 *Cities & Towns of San Joaquin County Since 1847*. Panorama West Books, Fresno.

Hoover, Mildred, Hero E. Rensch, Ethel G. Rensch and William N. Abeloe

1990 *Historic Spots in California* (Fourth Edition), revised by Douglas E. Kyle. Stanford University Press, Stanford.

Kroeber, Alfred L.

1953 *Handbook of the California Indians*. California Book Company, Ltd., Berkeley.

Latta, F. F.

1949 *Handbook of the Yokuts Indians*. Bear State Books, Oildale, California.

Lillard, Jeremiah B., Robert F. Heizer and Franklin Fenenga

1939 An Introduction to the Archaeology of Central California. *Sacramento Junior College, Department of Anthropology Bulletin* 2. Sacramento.

Lillard, Jeremiah B. and William K. Purves

1936 The Archaeology of the Deer Creek-Cosumnes Area, Sacramento County, California. *Sacramento Junior College, Department of Anthropology Bulletin* 1. Sacramento.

Moratto, Michael J.

1984 *California Archaeology*. Academic Press, New York.

Ragir, Sonia

1972 The Early Horizon in Central California Prehistory. *University of California Research Contributions* 15. Berkeley.

Schulz, Peter D.

1981 *Osteoarchaeology and Subsistence Change in Prehistoric Central California*. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Davis.

Schenck, W. Egbert and Elmer Dawson

1929 Archaeology of the Northern San Joaquin Valley. *University of California Publications in American Archaeology and Ethnology* 25(4):289-413. Berkeley.

Shippee, L. W.

1890 *An Illustrated History of San Joaquin County, California*. The Lewis Publishing Company, Chicago.

Smith, Wallace

1960 *Garden of the Sun*. Eighth edition. Original publication in 1939, privately printed.

Thompson and West

1879 *History of San Joaquin County, California, with Illustrations*. Reprinted in 1968 by Howell-North Books, Berkeley.

Tinkham, George H.

1923 *History of San Joaquin County, California*. The Historic Record Company, Los Angeles.

Wallace, William J.

1978 Northern Valley Yokuts. In *California*, edited by Robert F. Heizer, pp. 462-470. Handbook of North American Indians, vol. 8, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Willey, Gordon R. and Phillip Phillips

1958 *Method and Theory in American Archaeology*. The University of Chicago Press, Chicago.

APPENDIX 1

Resumes

PEAK & ASSOCIATES, INC.

RESUME

MELINDA A. PEAK **January 2021**
Senior Historian/Archeologist
3941 Park Drive, Suite 20 #329
El Dorado Hills, CA 95762
(916) 939-2405

PROFESSIONAL EXPERIENCE

Ms. Peak has served as the principal investigator on a wide range of prehistoric and historic excavations throughout California. She has directed laboratory analyses of archeological materials, including the historic period. She has also conducted a wide variety of cultural resource assessments in California, including documentary research, field survey, Native American consultation and report preparation.

In addition, Ms. Peak has developed a second field of expertise in applied history, specializing in site-specific research for historic period resources. She is a registered professional historian and has completed a number of historical research projects for a wide variety of site types.

Through her education and experience, Ms. Peak meets the Secretary of Interior Standards for historian, architectural historian, prehistoric archeologist and historic archeologist.

EDUCATION

M.A. - History - California State University, Sacramento, 1989

Thesis: *The Bellevue Mine: A Historical Resources Management Site Study in Plumas and Sierra Counties, California*

B.A. - Anthropology - University of California, Berkeley

PROJECTS

In recent years, Ms. Peak has led the team completing the cultural resource sections for General Plan and General Plan Updates, for a number of cities/neighborhoods including Campbell, Milpitas, Yountville, Manteca, The Springs, Sebastopol, Martinez, Brentwood, Colusa County and Foster City. Older General Plan efforts include Wheatland, Rocklin, Sheridan, Granite Bay and South Sutter County.

In recent months, Ms. Peak has completed a number of determinations of eligibility and effect documents in coordination with the Corps of Engineers for projects requiring federal permits, assessing the eligibility of a number of sites for the National Register of Historic Places.

She has also completed historical research projects on a wide variety of topics for a number of projects including the development of a winery in a ranch in Folsom, commercial buildings in the City of Davis, a lumber mill in Clovis, older farmhouses dating to the 1860s, an early roadhouse, bridges, canals, former small-town site, and a section of an electric railway line.

In recent years, Ms. Peak has prepared a number of cultural resource overviews and predictive models for blocks of land proposed for future development for general and specific plans. She has been able to direct a number of surveys of these areas, allowing the model to be tested.

Ms. Peak completed the cultural resource research and contributed to the text prepared for the DeSabla-Centerville PAD for the initial stage of the FERC relicensing. She also served cultural resource project manager for the FERC relicensing of the Beardsley-Donnells Project. For the South Feather Power Project and the Woodleaf-Palermo and Sly Creek Transmission Lines, her team completing the technical work for the project.

She served as principal investigator for the multi-phase Twelve Bridges Golf Club project in Placer County. She served as liaison with the various agencies, helped prepare the historic properties treatment plan, managed the various phases of test and data recovery excavations, and completed the final report on the analysis of the test phase excavations of a number of prehistoric sites. She is currently involved as the principal investigator for the Clover Valley Lakes project adjacent to Twelve Bridges in the City of Rocklin, coordinating contacts with Native Americans, the Corps of Engineers and the Office of Historic Preservation.

Ms. Peak has served as project manager for a number of major survey and excavation projects in recent years, including the many surveys and site definition excavations for the 172-mile-long Pacific Pipeline proposed for construction in Santa Barbara, Ventura and Los Angeles counties. She also completed an archival study in the City of Los Angeles for the project, and served as principal investigator for a major coaxial cable removal project for AT&T.

Additionally, she completed a number of small surveys, served as a construction monitor at several urban sites, and conducted emergency recovery excavations for sites found during monitoring. She has directed the excavations of several historic complexes in Sacramento, Placer and El Dorado Counties.

Ms. Peak is the author of a chapter and two sections of a published history (1999) of Sacramento County, *Sacramento: Gold Rush Legacy, Metropolitan Legacy*. She served as the consultant for a children's book on California, published by Capstone Press in 2003 in the Land of Liberty series.

PEAK & ASSOCIATES, INC.
RESUME

MICHAEL LAWSON **January 2021**
Archeological Specialist
3941 Park Drive, Suite 20-329
El Dorado Hills, CA 95672
(916) 939-2405

PROFESSIONAL EXPERIENCE

Mr. Lawson has compiled an excellent record of supervision of excavation and survey projects for both the public and private sectors over the past twenty-two years. He has conducted a number of surveys throughout northern and central California, as well as serving as an archeological technician and crew chief for a number of excavation projects.

EDUCATION

B.A. - Anthropology - California State University, Sacramento

Special Course: Comparative Osteology. University of Tennessee, Knoxville. Forensic Anthropology Center. January 2018.

> Intensive lab and outdoor study with human example from outdoor research facility, including typical and non-metric examples, compared with fifty non-human species most commonly confused with human remains. Outdoor research facility "The Body Farm" study included survey, photography, collection and identification of faunal and human bone fragments, with a Power Point presentation discussing finds.

EXPERIENCE

- Extensive monitoring of open space, streets and project development areas for prehistoric period and historic period resources. Areas monitored include Sutter Street in Folsom; Mud Creek Archeological District in Chico; Camp Roberts, San Luis Obispo County; Avila Beach, San Luis Obispo County; Edgewood Golf Course, South Lake Tahoe; Davis Water Project, Davis; Star Bend levee section, Sutter County; Feather River levees, Sutter County; Bodega Bay, Sonoma County; San Jose BART line extension, Santa Clara County; and numerous sites for PG&E in San Francisco.
- Over twenty years of experience working in CRM, volunteer, and academic settings in California historic, proto-historic, and prehistoric archaeology.
- Expertise in pedestrian survey, excavation, feature (including burial) exposure, laboratory techniques, research. Field positions include crew chief and lead technician.

APPENDIX 2

Record Search

CENTRAL CALIFORNIA INFORMATION CENTER
California Historical Resources Information System
Department of Anthropology – California State University, Stanislaus
One University Circle, Turlock, California 95382
(209) 667-3307

Alpine, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus & Tuolumne Counties

Date: 10/25/2021

Records Search File No.:11954L
Project: Indelicato Project

Robert Gerry
Peak & Associates, Inc.
3941 Park Drive, Suite 30-329
El Dorado Hills, CA 95762
916-939-2405

Invoice phone: 916-283-5238
peakinc@surewest.net

Dear Mr. Gerry:

The Central California Information Center received your record search request for the project area referenced above, located on the Lathrop & Manteca 7.5' quadrangles in San Joaquin County. The following reflects the results of the records search for the project study area and radius:

As per data currently available at the CCaIC, the locations of resources/reports are provided in the following format: ☒ custom GIS maps ☐ GIS Data/shape files ☐ hand-drawn maps

Summary Data:

Resources within the project area:	None formally reported to the Information Center.
Resources within the 1/4-mile radius:	1: P-39-004494
Reports within the project area:	2: SJ-04786, 5582
Reports within the 1/4-mile radius:	2: SJ-00729, 5953

Resource Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Resource Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Report Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Report Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Resource Record Copies:	☒ enclosed	☐ not requested	☐ nothing listed
Report Copies:	☐ enclosed	☒ not requested	☐ nothing listed

OHP Historic Properties Directory: New Excel File: Built Environment Resource Directory (BERD) Dated 12/17/2019 ☐ enclosed ☐ not requested ☒ nothing listed

Archaeological Determinations of Eligibility:	☐ enclosed	☐ not requested	☒ nothing listed
CA Inventory of Historic Resources (1976):	☐ enclosed	☒ not requested	☐ nothing listed
Caltrans Bridge Survey:	☐ enclosed	☒ not requested	☐ nothing listed
Ethnographic Information:	☐ enclosed	☒ not requested	☐ nothing listed
Historical Literature:	☐ enclosed	☒ not requested	☐ nothing listed
Historical Maps:	☐ enclosed	☒ not requested	☐ nothing listed
Local Inventories:	☐ enclosed	☒ not requested	☐ nothing listed
GLO and/or Rancho Plat Maps:	☐ enclosed	☒ not requested	☐ nothing listed

Shipwreck Inventory: ☒ not available at CCIC; please go to
http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp

Soil Survey Maps: ☒ not available at CCIC; please go to
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

Note: Billing will be transmitted separately via email by our Financial Services office *($226.20), payable within 60 days of receipt of the invoice.

If you wish to include payment by Credit Card, you must wait to receive the official invoice

from Financial Services so that you can reference the CMP # (Invoice Number), and then contact the link below:

https://commerce.cashnet.com/ANTHROPOLOGY

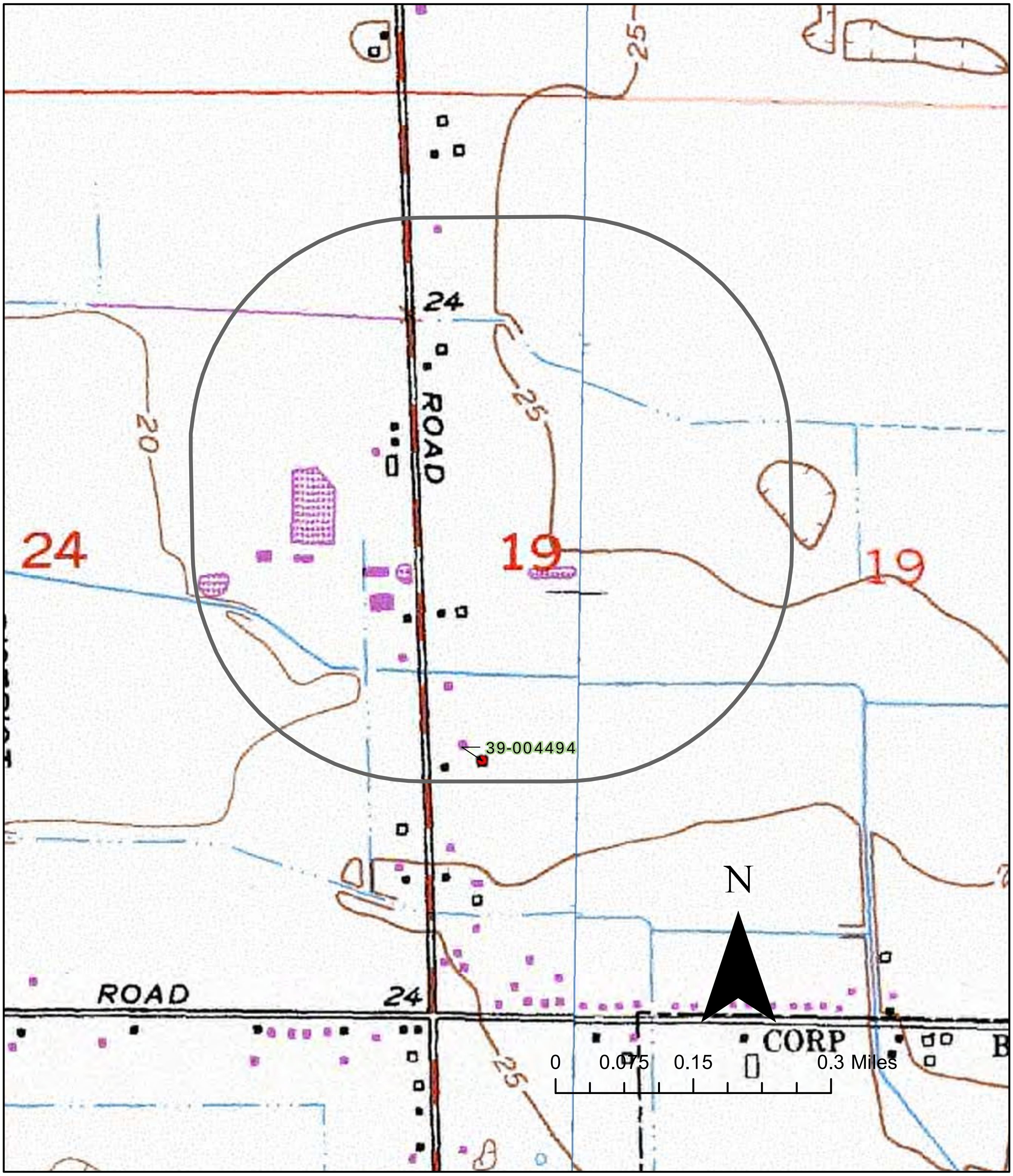
Sincerely,

E. A. Greathouse

E. A. Greathouse, Coordinator
Central California Information Center
California Historical Resources Information System

* Invoice Request sent to: ARBilling@csustan.edu, CSU Stanislaus Financial Services

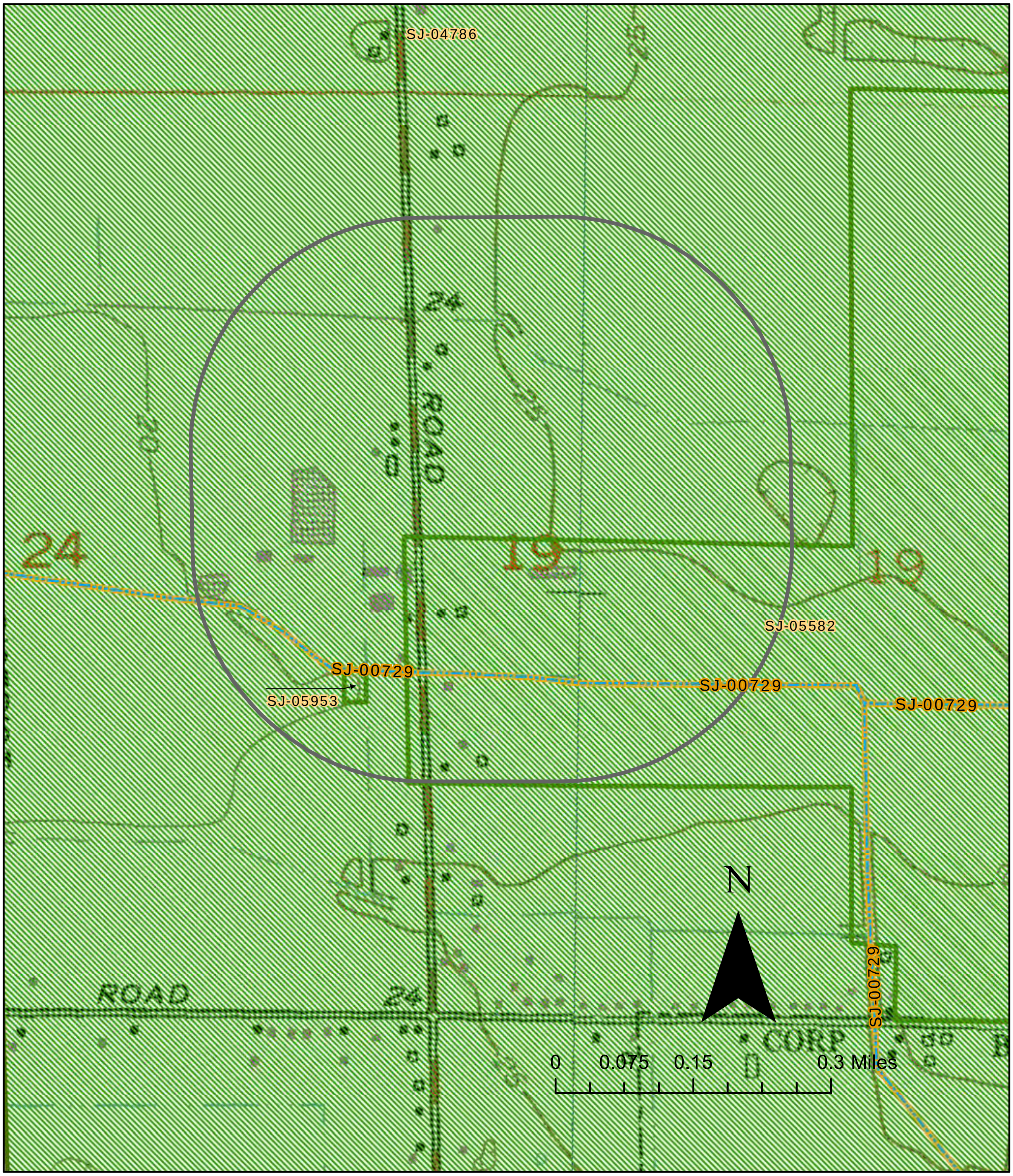
CCaIC 11954L Indelicato Project
Resource 1/4-mile radius 1:10,000-scale
Lathrop & Manteca USGS 7.5' Quadrangles



Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-39-004494		Resource Name - 14580 Airport Way	Building	Historic	HP02; HP04	2004 (Angel Tomes, EDAW, Inc.)	SJ-05582

CCaIC 11954L Indelicato Project
Reports 1/4-mile radius 1:10,000-scale
Lathrop & Manteca USGS 7.5' Quadrangles



Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SJ-00729	NADB-R - 1361539	1981	Chavez, D.	Cultural Resource Evaluation for the Manteca Wastewater Project, San Joaquin County, California.	David Chavez, Consulting Archaeologist; for James M. Montgomery Consulting Engineers, Inc.	
SJ-04786	NADB-R - 1364725	2002	Windmiller, Ric and Donald Napoli	City of Manteca--General Plan Update, Background Reports: Archaeological Resources, Historical Resources, Records Search Results.	Ric Windmiller, Consulting Archaeologist (and) Donald Napoli, of Historic Preservation Planning; for Wade Associates, Sacramento, CA	39-000002, 39-000015, 39-000098, 39-000099, 39-000102, 39-000103, 39-000111, 39-000282, 39-000354, 39-000681, 39-000682, 39-000683, 39-000684, 39-004148, 39-004188, 39-004189, 39-004190, 39-004191, 39-004192
SJ-05582	NADB-R - 1365466	2004	Deis, R. W.	Cultural Resources Inventory and Assessment for the Union Ranch Specific Plan EIR, San Joaquin County, California.	EDAW	39-004494, 39-004495, 39-004496, 39-004497, 39-004498, 39-004499, 39-004500, 39-004501, 39-004502, 39-004503
SJ-05953	NADB-R - 1365891	2005	Billat, L.	Archaeological Survey Report for the N. Lathrop CA-3325A Wireless Telecom Sevice (WTS) Facility at 14755 S. Airport Way, Near Manteca, San Joaquin County, CA	EarthTouch, Inc. for FCC	

APPENDIX C: NOISE REPORT

Environmental Noise Assessment

Indelicato Project

City of Manteca, California

March 30, 2022

Project #211010

Prepared for:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762

Prepared by:

Saxelby Acoustics LLC

Luke Saxelby, INCE Bd. Cert.
Principal Consultant
Board Certified, Institute of Noise Control Engineering (INCE)

(916) 760-8821
www.SaxNoise.com | Luke@SaxNoise.com
915 Highland Pointe Drive, Suite 250
Roseville, CA 95678

This section provides a general description of the existing noise sources in the Project vicinity, a discussion of the regulatory setting, and identifies potential noise impacts associated with the proposed Project. Project impacts are evaluated relative to applicable noise level criteria and to the existing ambient noise environment. Mitigation measures have been identified for significant noise-related impacts.

There were no comments received during the NOP scoping process related to this environmental topic.

3.11.1 ENVIRONMENTAL SETTING

KEY TERMS

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of noise.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response. A-weighted dB values are expressed as dBA.
Decibel or dB	Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.
CNEL	Community noise equivalent level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
$L_{(n)}$	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L_{50} is the sound level exceeded 50 percent of the time during the one-hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
SEL	Sound exposure levels. A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.

3.11 NOISE

FUNDAMENTALS OF ACOUSTICS

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dB) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dB is generally perceived as a doubling in loudness. For example, a 70-dB sound is half as loud as an 80-dB sound, and twice as loud as a 60-dB sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. CNEL is similar to L_{dn}, but includes a +5-dB penalty for evening noise. Table 3.11-1 lists several examples of the noise levels associated with common situations.

TABLE 3.11-1: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	NOISE LEVEL (DB)	COMMON INDOOR ACTIVITIES
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

SOURCE: CALTRANS, TECHNICAL NOISE SUPPLEMENT, TRAFFIC NOISE ANALYSIS PROTOCOL. SEPTEMBER 2013.

EFFECTS OF NOISE ON PEOPLE

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual’s past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a 1 dB change cannot be perceived;
- Outside of the laboratory, a 3-dB change is considered a just-perceivable difference;
- A change in level of at least 5-dB is required before any noticeable change in human response would be expected; and

- A 10-dB change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e., atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING AND FUTURE NOISE AND VIBRATION ENVIRONMENTS

Existing and Surrounding Land Uses

North: Proposed residential developments and farmland border the north side of the project area.

East: Existing single family residential uses border the eastern boundary of the site.

South: Existing single family residential uses border the southern boundary of the site.

West: Existing industrial uses are located west of the project site.

Existing Ambient Noise Levels

To quantify the existing ambient noise environment in the Project Vicinity, a continuous (24-hour) noise level measurement was conducted on the project site on November 10th – November 11th, 2021. The noise measurement location is shown on Figure 3.11-1. The noise level measurement survey results are provided in Table 3.11-2. Appendix B of Appendix F shows the complete results of the noise monitoring survey.

The sound level meters were programmed to collect hourly noise level intervals at each site during the survey. The maximum value (L_{max}) represents the highest noise level measured during an interval. The average value (L_{eq}) represents the energy average of all of the noise measured during an interval. The median value (L_{50}) represents the sound level exceeded 50 percent of the time during an interval.

TABLE 3.11-2: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

SITE	*LOCATION*	*DATE/TIME*	*L_{DN}*	*AVERAGE MEASURED HOURLY NOISE LEVELS, DB*					
				DAYTIME (7AM-10PM)			*NIGHTTIME (10PM-7AM)*		
				L_{EQ}	*L_{50}*	*L_{MAX}*	*L_{EQ}*	*L_{50}*	*L_{MAX}*
Continuous (24-hour) Noise Level Measurements1									
LT-1	East side of Project Area, 17 yds to Airport Way Median	11/10/2021-11/11/2021	75	71	66	88	68	60	85

SOURCE: SAXELBY ACOUSTICS, 2021.

A Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter was used for the ambient noise level measurement survey. The meter was calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

Existing and Future Traffic Noise Environment at Sensitive Receptors

OFF-SITE TRAFFIC NOISE IMPACT ASSESSMENT METHODOLOGY

To predict existing and cumulative noise levels due to traffic, the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions.

Traffic volumes for existing conditions were obtained from the traffic data prepared for the Project (Kittelson & Associates, 2022). Truck percentages and vehicle speeds on the local area roadways were estimated from field observations.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each Project-area roadway segment. Where traffic noise barriers are predominately along a roadway segment, a -5 offset was added to the noise prediction model to account for various noise barrier heights. A -5 to dB offset was also applied where outdoor activity areas are shielded by intervening buildings. In some locations, sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls. However, the traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the Project-area roadway segments analyzed in this report.

Table 3.11-3 shows the existing traffic noise levels in terms of L_{dn} at closest sensitive receptors along each roadway segment. A complete listing of the FHWA Model input data is contained in Appendix C of Appendix F.

TABLE 3.11-3: EXISTING TRAFFIC NOISE LEVELS

ROADWAY	*SEGMENT*	*EXTERIOR TRAFFIC NOISE LEVEL, DB L_{DN}*
Spartan Way	West of I-5	56.3
W Lathrop Road	East of I-5	65.7
W Lathrop Road	East of Airport Way	68.2
Airport Way	North of Lathrop Road	65.7
Airport Way	South of Lathrop Road	62.0
Lathrop Road	West of Airport Way	67.3
Main Street	South of Lathrop Road	64.6
Lathrop Road	West of Hwy 99	64.4
Airport Way	North of Roth Road	61.8
Roth Road	West of Airport Way	57.6
Airport Way	South of Louise Ave.	61.5
Louise Ave.	West of Airport Way	63.8
W Yosemite Ave.	East of Airport Way	66.7
Airport Way	North of W Yosemite Ave.	65.1
Airport Way	South of W Yosemite Ave.	64.4

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM KITTELSON & ASSOCIATES AND SAXELBY ACOUSTICS. 2022.

PREDICTED EXTERIOR TRAFFIC NOISE LEVELS

Implementation of the proposed Project would result in an increase in ADT volumes on the local roadway network, and consequently, an increase in noise levels from traffic sources along affected segments. Tables 3.11-4 and 3.11-5 show the predicted traffic noise level increases on the local roadway network for Existing, Existing + Project, Cumulative No Project, and Cumulative + Project conditions. Appendix C of Appendix F provides the complete inputs and results of the FHWA traffic noise modeling.

TABLE 3.11-4: EXISTING AND EXISTING PLUS PROJECT TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, DB) AT NEAREST SENSITIVE RECEPTORS				
		EXISTING	EXISTING + PROJECT	CHANGE	EX. GP CRITERIA[1] / PROPOSED GP CRITERIA[2]	SIGNIFICANT UNDER EX. GP? / SIGNIFICANT UNDER GP UPDATE?
Spartan Way	West of I-5	56.3	56.3	0.0	>60 dBA	No
					+5 dBA	No
W Lathrop Road	East of I-5	65.7	65.8	0.1	+5-10 dBA	No
					+ 1.5 dBA	No
W Lathrop Road	East of Airport Way	68.2	68.3	0.1	+5-10 dBA	No
					+ 1.5 dBA	No
Airport Way	North of Lathrop Road	65.7	66.3	0.6	+5-10 dBA	No
					+ 1.5 dBA	No
Airport Way	South of Lathrop Road	62.0	62.2	0.2	+5-10 dBA	No
					+ 3 dBA	No
Lathrop Road	West of Airport Way	67.3	67.4	0.1	+5-10 dBA	No
					+ 1.5 dBA	No
Main Street	South of Lathrop Road	64.6	64.6	0.0	+5-10 dBA	No
					+3 dBA	No
Lathrop Road	West of Hwy 99	64.4	64.5	0.1	+5-10 dBA	No
					+ 3 dBA	No
Airport Way	North of Roth Road	61.8	61.9	0.1	+5-10 dBA	No
					+ 3 dBA	No
Roth Road	West of Airport Way	57.6	57.8	0.2	>60 dBA	No
					+ 5 dBA	No
Airport Way	South of Louise Ave.	61.5	61.6	0.1	+5-10 dBA	No
					+ 3 dBA	No
Louise Ave.	West of Airport Way	63.8	63.8	0.0	+5-10 dBA	No
					+ 3 dBA	No
W Yosemite Ave.	East of Airport Way	66.7	66.8	0.1	+5-10 dBA	No
					+ 1.5 dBA	No
Airport Way	North of W Yosemite Ave.	65.1	65.2	0.1	+5-10 dBA	No
					+ 1.5 dBA	No
Airport Way	South of W Yosemite Ave.	64.4	64.5	0.1	+5-10 dBA	No
					+ 3 dBA	No

[1] *EXISTING GP CRITERIA - IN MAKING A DETERMINATION OF IMPACT UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA), A SUBSTANTIAL INCREASE WILL OCCUR IF AMBIENT NOISE LEVELS ARE INCREASED BY 10 DB OR MORE. AN INCREASE FROM 5-10 DB MAY BE SUBSTANTIAL. FACTORS TO BE CONSIDERED IN DETERMINING THE SIGNIFICANCE OF INCREASES FROM 5-10 DB INCLUDE:*

- *THE RESULTING NOISE LEVELS*
- *THE DURATION AND FREQUENCY OF THE NOISE*
- *THE NUMBER OF PEOPLE AFFECTED*
- *THE LAND USE DESIGNATION OF THE AFFECTED RECEPTOR SITES*
- *PUBLIC REACTIONS/CONTROVERSY AS DEMONSTRATED AT WORKSHOPS/HEARINGS, OR BY CORRESPONDENCE*
- *PRIOR CEQA DETERMINATIONS BY OTHER AGENCIES SPECIFIC TO THE PROJECT*

[2] PROPOSED GP CRITERIA - IN MAKING A DETERMINATION OF IMPACT UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA), A SUBSTANTIAL INCREASE WILL OCCUR IF AMBIENT NOISE LEVELS HAVE A SUBSTANTIAL INCREASE. GENERALLY, A 3 DB INCREASE IN NOISE LEVELS IS BARELY PERCEPTIBLE, AND A 5 DB INCREASE IN NOISE LEVELS IS CLEARLY PERCEPTIBLE. THEREFORE, INCREASES IN NOISE LEVELS SHALL BE CONSIDERED TO BE SUBSTANTIAL WHEN THE FOLLOWING OCCURS:

- *WHEN EXISTING NOISE LEVELS ARE LESS THAN 60 DB, A 5 DB INCREASE IN NOISE WILL BE CONSIDERED SUBSTANTIAL;*
- *WHEN EXISTING NOISE LEVELS ARE BETWEEN 60 DB AND 65 DB, A 3 DB INCREASE IN NOISE WILL BE CONSIDERED SUBSTANTIAL;*
- *WHEN EXISTING NOISE LEVELS EXCEED 65 DB, A 1.5 DB INCREASE IN NOISE WILL BE CONSIDERED SUBSTANTIAL.*

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM KITTELSON & ASSOCIATES AND SAXELBY ACOUSTICS. 2022.

TABLE 3.11-5: CUMULATIVE AND CUMULATIVE + PROJECT TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, DB) AT NEAREST SENSITIVE RECEPTORS				
		CUMULATIVE	CUMULATIVE + PROJECT	CHANGE	EX. GP CRITERIA[1] / PROPOSED GP CRITERIA[2]	SIGNIFICANT UNDER EX. GP? / SIGNIFICANT UNDER GP UPDATE?
Spartan Way	West of I-5	64.7	64.7	0.0	+5-10 dBA	No
					+ 3 dBA	No
W Lathrop Road	East of I-5	69.9	69.9	0.0	+5-10 dBA	No
					+ 1.5 dBA	No
W Lathrop Road	East of Airport Way	72.1	72.1	0.0	+5-10 dBA	No
					+ 1.5 dBA	No
Airport Way	North of Lathrop Road	68.8	69.1	0.3	+5-10 dBA	No
					+ 1.5 dBA	No
Airport Way	South of Lathrop Road	65.2	65.3	0.1	+5-10 dBA	No
					+ 1.5 dBA	No
Lathrop Road	West of Airport Way	71.4	71.4	0.0	+5-10 dBA	No
					+ 1.5 dBA	No
Main Street	South of Lathrop Road	65.4	65.5	0.1	+5-10 dBA	No
					+ 1.5 dBA	No
Lathrop Road	West of Hwy 99	67.3	67.4	0.1	+5-10 dBA	No
					+ 1.5 dBA	No
Airport Way	North of Roth Road	65.2	65.2	0.0	+5-10 dBA	No
					+ 1.5 dBA	No
Roth Road	West of Airport Way	60.0	60.1	0.1	+5-10 dBA	No
					+ 3 dBA	No
Airport Way	South of Louise Ave.	65.3	65.3	0.0	+5-10 dBA	No
					+ 1.5 dBA	No
Louise Ave.	West of Airport Way	69.1	69.1	0.0	+5-10 dBA	No
					+ 1.5 dBA	No
W Yosemite Ave.	East of Airport Way	68.7	68.8	0.1	+5-10 dBA	No
					+ 1.5 dBA	No
Airport Way	North of W Yosemite Ave.	68.5	68.5	0.0	+5-10 dBA	No
					+ 1.5 dBA	No
Airport Way	South of W Yosemite Ave.	67.7	67.7	0.0	+5-10 dBA	No
					+ 1.5 dBA	No

[1] *EXISTING GP CRITERIA - IN MAKING A DETERMINATION OF IMPACT UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA), A SUBSTANTIAL INCREASE WILL OCCUR IF AMBIENT NOISE LEVELS ARE INCREASED BY 10 DB OR MORE. AN INCREASE FROM 5-10 DB MAY BE SUBSTANTIAL. FACTORS TO BE CONSIDERED IN DETERMINING THE SIGNIFICANCE OF INCREASES FROM 5-10 DB INCLUDE:*

- *THE RESULTING NOISE LEVELS*
- *THE DURATION AND FREQUENCY OF THE NOISE*
- *THE NUMBER OF PEOPLE AFFECTED*
- *THE LAND USE DESIGNATION OF THE AFFECTED RECEPTOR SITES*
- *PUBLIC REACTIONS/CONTROVERSY AS DEMONSTRATED AT WORKSHOPS/HEARINGS, OR BY CORRESPONDENCE*
- *PRIOR CEQA DETERMINATIONS BY OTHER AGENCIES SPECIFIC TO THE PROJECT*

[2] PROPOSED GP CRITERIA - IN MAKING A DETERMINATION OF IMPACT UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA), A SUBSTANTIAL INCREASE WILL OCCUR IF AMBIENT NOISE LEVELS HAVE A SUBSTANTIAL INCREASE. GENERALLY, A 3 DB INCREASE IN NOISE LEVELS IS BARELY PERCEPTIBLE, AND A 5 DB INCREASE IN NOISE LEVELS IS CLEARLY PERCEPTIBLE. THEREFORE, INCREASES IN NOISE LEVELS SHALL BE CONSIDERED TO BE SUBSTANTIAL WHEN THE FOLLOWING OCCURS:

- *WHEN EXISTING NOISE LEVELS ARE LESS THAN 60 DB, A 5 DB INCREASE IN NOISE WILL BE CONSIDERED SUBSTANTIAL;*
- *WHEN EXISTING NOISE LEVELS ARE BETWEEN 60 DB AND 65 DB, A 3 DB INCREASE IN NOISE WILL BE CONSIDERED SUBSTANTIAL;*
- *WHEN EXISTING NOISE LEVELS EXCEED 65 DB, A 1.5 DB INCREASE IN NOISE WILL BE CONSIDERED SUBSTANTIAL.*

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM KITTELSON & ASSOCIATES AND SAXELBY ACOUSTICS. 2022.

Based upon data in Tables 3.11-4 and 3.11-5, the proposed Project is predicted to result in a maximum traffic noise level increase of 0.6 dB.

EVALUATION OF TRANSPORTATION NOISE ON OVERALL PROJECT SITE

Traffic Noise Levels

Airport Way

Cumulative plus Project traffic noise levels are predicted to be 76 dB L_{dn} at a distance of approximately 90 feet from the centerline of Airport Way, assuming no shielding from intervening buildings or sound walls. The outdoor activity areas of proposed residential uses are located approximately 90 feet from the centerline of Airport Way. Therefore, maximum exterior noise levels of 76 dB L_{dn} are predicted for these uses. The facades of the proposed residential uses are located approximately 105 feet from the centerline of Airport Way, resulting in an exterior noise level of 75 dBA L_{dn}.

CONSTRUCTION NOISE ENVIRONMENT

During the construction of the proposed Project, including roads, water, and sewer lines and related infrastructure, noise from construction activities would add to the noise environment in the Project vicinity. As indicated in Table 3.11-6, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dB at a distance of 50 feet.

TABLE 3.11-6: CONSTRUCTION EQUIPMENT NOISE

TYPE OF EQUIPMENT	*MAXIMUM LEVEL, DB*	
	25 FEET	*50 FEET*
Backhoe	84	78
Compactor	89	83
Compressor (air)	84	78
Concrete Saw	96	90
Dozer	88	82
Dump Truck	82	76
Excavator	87	81
Generator	87	81
Jackhammer	94	89
Pneumatic Tools	91	85

SOURCE: ROADWAY CONSTRUCTION NOISE MODEL USER'S GUIDE. FEDERAL HIGHWAY ADMINISTRATION. FHWA-HEP-05-054. JANUARY 2006.

CONSTRUCTION VIBRATION ENVIRONMENT

The primary vibration-generating activities associated with the proposed Project would happen during construction when activities such as grading, utilities placement, and road construction occur. Table 3.11-7 shows the typical vibration levels produced by construction placement.

TABLE 3.11-7: VIBRATION LEVELS FOR VARIOUS CONSTRUCTION EQUIPMENT

TYPE OF EQUIPMENT	*PEAK PARTICLE VELOCITY @ 25 FEET (INCHES/SECOND)*	*PEAK PARTICLE VELOCITY @ 100 FEET (INCHES/SECOND)*
Large Bulldozer	0.089	0.011
Loaded Trucks	0.076	0.010
Small Bulldozer	0.003	0.000
Auger/Drill Rigs	0.089	0.011
Jackhammer	0.035	0.004
Vibratory Hammer	0.070	0.009
Vibratory Compactor/roller	0.210	0.026

SOURCE: FEDERAL TRANSIT ADMINISTRATION, TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT GUIDELINES, MAY 2006

3.11.2 REGULATORY SETTING

FEDERAL

There are no federal regulations related to noise that apply to the proposed Project.

STATE

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines, Appendix G, indicate that a significant noise impact may occur if a Project exposes persons to noise or vibration levels in excess of local general plans or noise ordinance standards, or cause a substantial permanent or temporary increase in ambient noise levels. CEQA standards are discussed more below under the Thresholds of Significance section.

California State Building Codes

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} or CNEL in any habitable room.

Title 24 also mandates that for structures containing noise-sensitive uses to be located where the L_{dn} or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment

CITY OF MANTECA

The City of Manteca General Plan – Existing (2003) General Plan

The City of Manteca General Plan Noise Element contains goals, policies, and implementation measures for assessing noise impacts within the City. Listed below are the noise goals, policies, and implementation measures that are applicable to the proposed Project (City of Manteca as amended through 2016):

GOALS: NOISE

- N-1. Protect the residents of Manteca from the harmful and annoying effects of exposure to excessive noise.
- N-3. Ensure that the downtown core noise levels remain acceptable and compatible with commercial and higher density residential land uses.
- N-4. Protect public health and welfare by eliminating existing noise problems where feasible, by establishing standards for acceptable indoor and outdoor noise, and by preventing significant increases in noise levels.
- N-5. Incorporate noise considerations into land use planning decisions and guide the location and design of transportation facilities to minimize the effects of noise on adjacent land uses.

POLICIES: NOISE

- N-P-2. New development of residential or other noise-sensitive land uses will not be permitted in noise-impacted areas unless effective mitigation measures are incorporated into the Project design to satisfy the performance standards in Table 9-1 [Table 3.11-8].

TABLE 3.11-8: MAXIMUM ALLOWABLE NOISE EXPOSURE MOBILE NOISE SOURCES

LAND USE[4]	*OUTDOOR ACTIVITY AREAS*[1]	*INTERIOR SPACES*	
		L_{DN}/CNEL, DB	*L_{EQ}/CNEL, DB*[3]
Residential	60[2]	45	--
Transient Lodging	60[2]	45	--
Hospitals, Nursing Homes	60[2]	45	--
Theatres, Auditoriums, Music Halls	--	--	35
Churches, Music Halls	60[2]	--	40
Office Buildings	65	--	45
Schools, Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

NOTES: [1] OUTDOOR ACTIVITY AREAS FOR RESIDENTIAL DEVELOPMENT ARE CONSIDERED TO BE BACKYARD PATIOS OR DECKS OF SINGLE-FAMILY DWELLINGS, AND THE COMMON AREAS WHERE PEOPLE GENERALLY CONGREGATE FOR MULTI-FAMILY DEVELOPMENTS. OUTDOOR ACTIVITY AREAS FOR NON-RESIDENTIAL DEVELOPMENTS ARE CONSIDERED TO BE THOSE COMMON AREAS

WHERE PEOPLE GENERALLY CONGREGATE, INCLUDING PEDESTRIAN PLAZAS, SEATING AREAS, AND OUTSIDE LUNCH FACILITIES. WHERE THE LOCATION OF OUTDOOR ACTIVITY AREAS IS UNKNOWN, THE EXTERIOR NOISE LEVEL STANDARD SHALL BE APPLIED TO THE PROPERTY LINE OF THE RECEIVING LAND USE.
[2] IN AREAS WHERE IT IS NOT POSSIBLE TO REDUCE EXTERIOR NOISE LEVELS TO 60 DB L_{DN} OR BELOW USING A PRACTICAL APPLICATION OF THE BEST NOISE-REDUCTION TECHNOLOGY, AN EXTERIOR NOISE LEVEL OF UP TO 65 L_{DN} WILL BE ALLOWED.
[3] DETERMINED FOR A TYPICAL WORST-CASE HOUR DURING PERIODS OF USE.
[4] WHERE A PROPOSED USE IS NOT SPECIFICALLY LISTED ON THE TABLE, THE USE SHALL COMPLY WITH THE NOISE EXPOSURE STANDARDS FOR THE NEAREST SIMILAR USE AS DETERMINED BY THE CITY.
SOURCE: CITY OF MANTECA GENERAL PLAN, NOISE ELEMENT, TABLE 9-1.

- N-P-3. The City may permit the development of new noise-sensitive uses only where the noise level due to fixed (non-transportation) noise sources satisfies the noise level standards of Table 9-2 [Table 3.11-9]. Noise mitigation may be required to meet Table 9-2 [Table 3.11-9] performance standards.

TABLE 3.11-9: PERFORMANCE STANDARDS FOR STATIONARY NOISE SOURCES OR PROJECTS AFFECTED BY STATIONARY NOISE SOURCES [1,2]

NOISE LEVEL DESCRIPTOR	*DAYTIME (7 AM – 10 PM)*	*NIGHTTIME (10 PM – 7 AM)*
Hourly L_{eq}, dB	50	45
Maximum Level, dB	70	65

NOTES: [1] EACH OF THE NOISE LEVELS SPECIFIED ABOVE SHOULD BE LOWERED BY FIVE (5) DB FOR SIMPLE NOISE TONES, NOISES CONSISTING PRIMARILY OF SPEECH OR MUSIC, OR RECURRING IMPULSIVE NOISES. SUCH NOISES ARE GENERALLY CONSIDERED BY RESIDENTS TO BE PARTICULARLY ANNOYING AND ARE A PRIMARY SOURCE OF NOISE COMPLAINTS.
[2] NO STANDARDS HAVE BEEN INCLUDED FOR INTERIOR NOISE LEVELS. STANDARD CONSTRUCTION PRACTICES SHOULD, WITH THE EXTERIOR NOISE LEVELS IDENTIFIED, RESULT IN ACCEPTABLE INTERIOR NOISE LEVELS.
SOURCE: CITY OF MANTECA GENERAL PLAN, NOISE ELEMENT, TABLE 9-2.

- N-P-5. In accord with the Table 9-2 [Table 3.11-9] standards, the City shall regulate construction-related noise impacts on adjacent uses.

IMPLEMENTATION MEASURES: NOISE

- N-I-1. New development in residential areas with an actual or projected exterior noise level of greater than 60 dB L_{dn} will be conditioned to use mitigation measures to reduce exterior noise levels to less than or equal to 60 dB L_{dn}.
- N-I-3. In making a determination of impact under the California Environmental Quality Act (CEQA), a substantial increase will occur if ambient noise levels are increased by 10 dB or more. An increase from 5-10 dB may be substantial. Factors to be considered in determining the significance of increases from 5-10 dB include:
  - the resulting noise levels
  - the duration and frequency of the noise
  - the number of people affected
  - the land use designation of the affected receptor sites
  - public reactions or controversy as demonstrated at workshops or hearings, or by correspondence
  - prior CEQA determinations by other agencies specific to the project

- N-I-4. Control noise at the source through use of insulation, berms, building design and orientation, buffer space, staggered operating hours and other techniques. Use noise barriers to attenuate noise to acceptable levels.

The City of Manteca General Plan – Proposed General Plan Update

The General Plan includes several policies relevant to public services. It is noted that the currently adopted General Plan is the 2023 General Plan; however, the City is currently undergoing an Update to the General Plan. Both 2023 General Plan policies and proposed General Plan Update policies applicable to the Project are identified below:

2023 GENERAL PLAN (EXISTING)

Policies: Safety

- S-5.1. Incorporate noise considerations into land use, transportation, and infrastructure planning decisions, and guide the location and design of noise-producing uses to minimize the effects of noise on adjacent noise-sensitive land uses, including residential uses and schools.
- S-5.2. Ensure that Downtown noise levels remain acceptable and compatible with a pedestrian-oriented environment and higher density residential land uses.
- S-5.3. Areas within Manteca exposed to existing or projected exterior noise levels from mobile noise sources exceeding the performance standards in Table S-1 shall be designated as noise-impacted areas.
- S-5.4. Require residential and other noise-sensitive development projects to satisfy the noise level criteria in Tables S-1 and S-2.
- S-5.5. Require new stationary noise sources proposed adjacent to noise sensitive uses to be mitigated so as to not exceed the noise level performance standards in Table S-2, or a substantial increase in noise levels established through a detailed ambient noise survey.
- S-5.6. Regulate construction-related noise to reduce impacts on adjacent uses to the criteria identified in Table S-2 or, if the criteria in Table S-2 cannot be met, to the maximum level feasible using best management practices and complying with the MMC Chapter 9.52.
- S-5.7. Where the development of residential or other noise-sensitive land use is proposed for a noise-impacted area or where the development of a stationary noise source is proposed in the vicinity of noise-sensitive uses, an acoustical analysis is required as part of the environmental review process so that noise mitigation may be considered in the project design. The acoustical analysis shall:
  - Be the responsibility of the applicant.
  - Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics.
  - Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions and the predominant noise

sources.

- Estimate existing and projected (20 years) noise levels in terms of the standards of Table S-1 or Table S-2, and compare those levels to the adopted policies of the Noise Element.
- Recommend appropriate mitigation measures to achieve compliance with the adopted policies and standards of the Noise Element.
- Estimate noise exposure after the prescribed mitigation measures have been implemented.
- If necessary, describe a post-project assessment program to monitor the effectiveness of the proposed mitigation measures.

- S-5.8. Apply noise level criteria applied to land uses other than residential or other noise-sensitive uses consistent with noise performance levels of Table S-1 and Table S-2.

- S-5.9. Enforce the Sound Transmission Control Standards of the California Building Code concerning the construction of new multiple occupancy dwellings such as hotels, apartments, and condominiums.

- S-5.10. Ensure that new equipment and vehicles purchased by the City comply with noise level performance standards consistent with the best available noise reduction technology.

- S-5.11. Require the Manteca Police Department to actively enforce requirements of the California Vehicle Code relating to vehicle mufflers and modified exhaust systems.

- S-5.12. For new residential development backing on to a freeway or railroad right-of-way, the developer shall be required to provide appropriate mitigation measures to satisfy the performance standards in Table S-1.

- S-5.13. It is recognized that the City and surrounding areas are considered to be urban in nature and rely upon both the industrial and agricultural economy of the area. Therefore, it is recognized that noise sources of existing uses may exceed generally accepted standards.

- S-5.14. Carefully review and give potentially affected residents an opportunity to fully review any proposals for the establishment of helipads or heliports.

- S-5.15. Recognizing that existing noise-sensitive uses may be exposed to increase noise levels due to circulation improvement projects associated with development under the General Plan and that it may not be feasible to reduce increased traffic noise levels to the criteria identified in Table S-1, the following criteria may be used to determine the significance of noise impacts associated with circulation improvement projects:

  - Where existing traffic noise levels are less than 60 dB Ldn at the outdoor activity areas of noise-sensitive uses, a +5 dB Ldn increase in noise levels due to roadway improvement projects will be considered significant; and
  - Where existing traffic noise levels range between 60 and 65 dB Ldn at the outdoor activity areas of noise-sensitive uses, a +3 dB Ldn increase in noise levels due to

roadway improvement projects will be considered significant; and

- Where existing traffic noise levels are greater than 65 dB Ldn at the outdoor activity areas of noise-sensitive uses, a + 1.5 dB Ldn increase in noise levels due to roadway improvement projects will be considered significant.

- S-5.16. Work with the Federal Railroad Administration and passenger and freight rail operators to reduce exposure to rail and train noise, including establishing train horn "quiet zones" consistent with the federal regulations.

Implementation: Safety

S-5a Require an acoustical analysis that complies with the requirements of S-5.7 where:

- Noise sensitive land uses are proposed in areas exposed to existing or projected noise levels exceeding the levels specified in Table S-1 or S-2.
- Proposed transportation projects are likely to produce noise levels exceeding the levels specified in Table S-1 or S-2 at existing or planned noise sensitive uses.

S-5b Assist in enforcing compliance with noise emissions standards for all types of vehicles, established by the California Vehicle Code and by federal regulations, through coordination with the Manteca Police Department and the California Highway Patrol.

S-5c Update the City's Noise Ordinance (Chapter 9.52) to reflect the noise standards established in this Noise Element and proactively enforce the City's Noise Ordinance, including requiring the following measures for construction:

- Restrict construction activities to the hours of 7:00 a.m. to 7:00 p.m. on Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturdays. No construction shall be permitted outside of these hours or on Sundays or federal holidays, without a specific exemption issued by the City.
- A Construction Noise Management Plan shall be submitted by the applicant for construction projects, when determined necessary by the City. The Construction Noise Management Plan shall include proper posting of construction schedules, appointment of a noise disturbance coordinator, and methods for assisting in noise reduction measures.
- Noise reduction measures may include, but are not limited to, the following:
    a. Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds) wherever feasible.
    b. Except as provided herein, impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used. This muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, if such jackets are

commercially available. this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.

c. Temporary power poles shall be used instead of generators where feasible.

d. Stationary noise sources shall be located as far from adjacent properties as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the City of provide equivalent noise reduction.

e. The noisiest phases of construction shall be limited to less than 10 days at a time. Exceptions may be allowed if the City determines an extension is necessary and all available noise reduction controls are implemented.

f. Delivery of materials shall observe the hours of operation described above.

g. Truck traffic should avoid residential areas to the extent possible.

S-5d In making a determination of impact under the California Environmental Quality Act (CEQA), a substantial increase will occur if ambient noise levels have a substantial increase. Generally, a 3 dB increase in noise levels is barely perceptible, and a 5 dB increase in noise levels is clearly perceptible. Therefore, increases in noise levels shall be considered to be substantial when the following occurs:

- When existing noise levels are less than 60 dB, a 5 dB increase in noise will be considered substantial;
- When existing noise levels are between 60 dB and 65 dB, a 3 dB increase in noise will be considered substantial;
- When existing noise levels exceed 65 dB, a 1.5 dB increase in noise will be considered substantial.

Additional or alternative criteria can be used for determining a substantial increase in noise levels. For instance, if the overall increase in noise levels occurs where no noise-sensitive uses are located, then the City may use their discretion in determining if there is any impact at all. In such a case, the following alternative factors may be used for determining a substantial increase in noise levels:

- the resulting noise levels;
- the duration and frequency of the noise;
- the number of people affected;
- conforming or non-conforming land uses;
- the land use designation of the affected receptor sites;
- public reactions or controversy as demonstrated at workshops or hearings, or by correspondence; and
- prior CEQA determinations by other agencies specific to the project.

S-5e Control noise at the source through use of insulation, berms, building design and orientation, buffer space, staggered operating hours, and similar techniques. Where such techniques would not meet acceptable levels, use noise barriers to attenuate noise associated with new noise sources to acceptable levels.

S-5f Require that all noise-attenuating features are designed to be attractive and to minimize maintenance.

S-5g Evaluate new transportation projects, such as truck routes, rail or public transit routes, and transit stations, using the standards contained in Table S-1. However, noise from these projects may be allowed to exceed the standards contained in Table S-1, if the City Council finds that there are special overriding circumstances.

S-5h Work with the Federal Rail Authority and passenger and freight rail service providers to establish a Quiet Zone at at-grade crossings in the City. Where new development would be affected by the train and rail noise, require project applicants to fund a fair-share of: a) studies associated with the application for a Quiet Zone, and b) alternative safety measures associated with the Quiet Zone (including, but not limited to signage, gates, lights, etc.).

S-5i Work in cooperation with Caltrans, the Union Pacific Railroad, San Joaquin Regional Rail Commission, and other agencies where appropriate to maintain noise level standards for both new and existing projects in compliance with Table S-1.

S-5j The City shall require new residential projects located adjacent to major freeways, truck routes, hard rail lines, or light rail lines to follow the FTA screening distance criteria to ensure that groundborne vibrations to do not exceed acceptable levels.

TABLE S-1: MAXIMUM ALLOWABLE NOISE EXPOSURE FROM MOBILE NOISE SOURCES

Land Use[1]	*Outdoor Activity Areas*[2,3]	*Interior Spaces*	
		Ldn/ CNEL, dBA	*Leq, dBA*[4]
Residential	60	45	-
Motels/Hotels	65	45	-
Mixed-Use	65	45	
Hospitals, Nursing Homes	60	45	-
Theaters, Auditoriums	-	-	35
Churches	60	-	40
Office Buildings	65	-	45
Schools, Libraries, Museums	70	-	45
Playgrounds, Neighborhood Parks	70	-	-
Industrial	75	-	45
Golf Courses, Water Recreation	70	-	-

[1]Where a proposed use is not specifically listed, the use shall comply with the standards for the most similar use as determined by the City.

[2]Outdoor activity areas for residential development are considered to be the back yard patios or decks of single-family units and the common areas where people generally congregate for multi-family developments. Where common outdoor activity areas for multi-family developments comply with the outdoor noise level standard, the standard will not be applied at patios or decks of individual units provided noise-reducing measures are incorporated (e.g., orientation of patio/deck, screening of patio with masonry or other noise-attenuating material). Outdoor activity areas for non-residential developments are the common areas where people generally congregate, including pedestrian plazas, seating areas, and outside lunch facilities; not all residential developments include outdoor activity areas.

[3]In areas where it is not possible to reduce exterior noise levels to achieve the outdoor activity area standard w using a practical application of the best noise-reduction technology, an increase of up to 5 Ldn over the standard will be allowed provided that available exterior noise reduction measures have been implemented and interior noise levels are in compliance with this table

[4]Determined for a typical worst-case hour during periods of use.

TABLE S-2: PERFORMANCE STANDARDS FOR STATIONARY NOISE SOURCES, INCLUDING AFFECTED PROJECTS[1,2,3,4]

NOISE LEVEL DESCRIPTOR	*DAYTIME*	*NIGHTTIME*
	7 AM TO 10 PM	*10 PM TO 7 AM*
Hourly Leq, dBA	55	45

[1]Each of the noise levels specified above should be lowered by 5 dB for simple noise tones, noises consisting primarily of speech or music, or recurring impulsive noises. Such noises are generally considered to be particularly annoying and are a primary source of noise complaints.

[2]No standards have been included for interior noise levels. Standard construction practices should, with the exterior noise levels identified, result in acceptable interior noise levels.

[3]Stationary noise sources which are typically of concern include, but are not limited to, the following:

HVAC Systems	*Cooling Towers/Evaporative Condensers*
Pump Stations	*Lift Stations*
Emergency Generators	*Boilers*
Steam Valves	*Steam Turbines*
Generators	*Fans*
Air Compressors	*Heavy Equipment*
Conveyor Systems	*Transformers*
Pile Drivers	*Grinders*
Drill Rigs	*Gas or Diesel Motors*
Welders	*Cutting Equipment*
Outdoor Speakers	*Blowers*

[4]The types of uses which may typically produce the noise sources described above include but are not limited to: industrial facilities, pump stations, trucking operations, tire shops, auto maintenance shops, metal fabricating shops, shopping centers, drive-up windows, car washes, loading docks, public works projects, batch plants, bottling and canning plants, recycling centers, electric generating stations, race tracks, landfills, sand and gravel operations, and athletic fields.

City of Manteca Municipal Code Noise Ordinance

Section 9.52.030 of the City of Manteca Municipal Code prohibits excessive or annoying noise or vibration to residential and commercial properties in the City. The following general rules are outline in the ordinance:

9.52.030 PROHIBITED NOISES—GENERAL STANDARD

No person shall make, or cause to suffer, or permit to be made upon any public property, public right-of-way or private property, any unnecessary and unreasonable noises, sounds or vibrations which are physically annoying to reasonable persons of ordinary sensitivity or which are so harsh or so prolonged or unnatural or unusual in their use, time or place as to cause or contribute to the unnecessary and unreasonable discomfort of any persons within the neighborhood from which said noises emanate or which interfere with the peace and comfort of residents or their guests, or the operators or customers in places of business in the vicinity, or which may detrimentally or adversely affect such residences or places of business. (Ord. 1374 § 1(part), 2007)

17.58.050 D. EXEMPT ACTIVITIES

8. Construction activities when conducted as part of an approved Building Permit, except as prohibited in Subsection 17.58.050(E)(1) (Prohibited Activities) below.

17.58.050 E. Prohibited Activities

1. Construction Noise. Operating or causing the operation of tools or equipment on private property used in alteration, construction, demolition, drilling, or repair work daily between the hours of 7:00 p.m. and 7:00 a.m., so that the sound creates a noise disturbance across a residential property line, except for emergency work of public service utilities.

VIBRATION STANDARDS

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

The City does not have specific policies pertaining to vibration levels. However, vibration levels associated with construction activities are addressed as potential noise impacts associated with Project implementation.

Human and structural response to different vibration levels is influenced by several factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.11-10 indicates that the threshold for damage to structures ranges from

0.2 to 0.6 peak particle velocity in inches per second (in/sec p.p.v). A threshold of 0.20 in/sec p.p.v. is considered to be a reasonable threshold for short-term construction projects.

TABLE 3.11-10: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

PEAK PARTICLE VELOCITY		*HUMAN REACTION*	*EFFECT ON BUILDINGS*
MM/SEC.	*IN./SEC.*		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of “architectural” damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of “architectural” damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize “architectural” damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic but would cause “architectural” damage and possibly minor structural damage.

SOURCE: CALTRANS. TRANSPORTATION RELATED EARTHBORN VIBRATIONS. TAV-02-01-R9601 FEBRUARY 20, 2002.

3.11.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the Project will have a significant impact related to noise if it will result in:

Would the Project:

a. Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b. Generate excessive groundborne vibration or groundborne noise levels?

c. For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?

Determination of a Significant Increase in Noise Levels

Existing (2003) General Plan Policies

The CEQA guidelines define a significant impact of a Project if it "increases substantially the ambient noise levels for adjoining areas". Implementation Measure N-I-3 of the City of Manteca General Plan Noise Element provides specific guidance for assessing increases in ambient noise, as follows:

In making a determination of impact under the California Environmental Quality Act (CEQA), a substantial increase will occur if ambient noise levels are increased by 10 dB or more. An increase from 5-10 dB may be substantial. Factors to be considered in determining the significance of increases from 5-10 dB include:

- *the resulting noise levels*
- *the duration and frequency of the noise*
- *the number of people affected*
- *the land use designation of the affected receptor sites*
- *public reactions/controversy as demonstrated at workshops/hearings, or by correspondence*
- *prior CEQA determinations by other agencies specific to the Project*

Proposed General Plan Policies

Under the City's proposed General Plan Update, the following policy S-5d will apply when evaluating substantial noise increases:

In making a determination of impact under the California Environmental Quality Act (CEQA), a substantial increase will occur if ambient noise levels increase substantially. Generally, a 3 dB increase in noise levels is barely perceptible, and a 5 dB increase in noise levels is clearly perceptible. Therefore, increases in noise levels shall be considered to be substantial when the following occurs:

- When existing noise levels are less than 60 dB, a 5 dB increase in noise will be considered substantial;
- When existing noise levels are between 60 dB and 65 dB, a 3 dB increase in noise will be considered substantial;
- When existing noise levels exceed 65 dB, a 1.5 dB increase in noise will be considered substantial.

Additional or alternative criteria can be used for determining a substantial increase in noise levels. For instance, if the overall increase in noise levels occurs where no noise-sensitive uses are located, then the City may use their discretion in determining if there is any impact at all. In such a case, the following alternative factors may be used for determining a substantial increase in noise levels:

- the resulting noise levels;
- the duration and frequency of the noise;
- the number of people affected;
- conforming or non-conforming land uses;
- the land use designation of the affected receptor sites;
- public reactions or controversy as demonstrated at workshops or hearings, or by correspondence; and
- prior CEQA determinations by other agencies specific to the Project.

IMPACTS AND MITIGATION MEASURES

Impact 3.11-1: The Proposed Project has the potential to generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. (Less than Significant)

TRAFFIC NOISE INCREASES UNDER EXISTING (2003) GENERAL PLAN STANDARDS

As shown in Tables 3.11-4 and 3.11-5, some noise-sensitive receptors located along the Project-area roadways within and outside of the Project site are currently exposed to exterior traffic noise levels exceeding the City of Manteca 60 dB L_{dn} exterior noise level standard for residential uses. These receptors would continue to experience elevated exterior noise levels with implementation of the proposed Project. For example, sensitive receptors under Existing conditions located adjacent to Airport Way, north of West Lathrop Road experience an exterior noise level of approximately 65.7 dB L_{dn}. Under Existing + Project conditions, exterior traffic noise levels are predicted to be approximately 66.3 dB L_{dn}. Exterior noise levels in both scenarios exceed the City's exterior noise level standard of 60 dB L_{dn}. Under the City's existing General Plan, the Project's contribution of 0.6 dB would not exceed the City's increase criteria of 5-10 dB. Therefore, this would be a **less-than-significant** impact.

TRAFFIC NOISE INCREASES UNDER PROPOSED GENERAL PLAN STANDARDS

The Proposed City of Manteca General Plan Noise Element specifies criteria to determine the significance of traffic noise impacts. An increase in the traffic noise level of 1.5 dB or more would be significant where the pre-Project noise levels are greater than 65 dB L_{dn}, 3.0 dB or more where existing noise levels are between 60-65 dB L_{dn}, and 5 dB or more where existing noise levels are less than 60 dBA L_{dn}.

According to Tables 3.11-4 and 3.11-5, the maximum noise level increase due to Project traffic is predicted to be 0.6 dBA L_{dn}. For this segment of Airport Way, the existing ambient noise level at the nearest sensitive receptor is approximately 65.7 dBA. Therefore, an increase of 1.5 dB would be required to be considered a significant impact. The existing plus project increase of 0.6 dB would be significant under this scenario. All other roadway segments analyzed in the traffic study do not exceed the Proposed General Plan Standards for significant impacts.

Therefore, traffic noise impacts would be ***less-than-significant***.

OPERATIONAL NOISE INCREASES

The proposed Project would include typical residential noise sources which would be compatible with the adjacent existing residential uses (a.k.a. neighborhood traffic, yard equipment, truck deliveries, garbage collected, etc.). Proposed neighborhood parks are located internal to the Project site and would not impact off-site residential uses.

CONSTRUCTION NOISE

During the construction of the Project, including roads, water, sewer lines, and related infrastructure, noise from construction activities would add to the noise environment in the Project vicinity. Existing receptors adjacent to the proposed construction activities are located south and east of the site.

As indicated in Table 3.11-6, activities involved in construction would generate maximum noise levels ranging from 82 to 96 dB L_{max} at a distance of 50 feet. Noise would also be generated during the construction phase by increased truck traffic on area roadways. A significant Project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration and would likely occur primarily during daytime hours.

Construction activities would be temporary in nature and are exempt from noise regulation during the hours of 7:00 AM to 7:00 PM, as outlined in the City's Municipal Code:

> **17.58.050 D. Exempt Activities**
>
> 8. Construction activities when conducted as part of an approved Building Permit, except as prohibited in Subsection 17.58.050(E)(1) (Prohibited Activities) below.
>
> **17.58.050 E. Prohibited Activities**
>
> 1. Construction Noise. Operating or causing the operation of tools or equipment on private property used in alteration, construction, demolition, drilling, or repair work daily between the hours of 7:00 p.m. and 7:00 a.m., so that the sound creates a noise disturbance across a residential property line, except for emergency work of public service utilities.

Therefore, with implementation of MM 3.11-1, temporary construction noise impacts would be reduced to less than significant.

EXTERIOR TRAFFIC NOISE AT PROPOSED USES

Table 3.11-11 shows the predicted traffic noise levels at the proposed residential uses adjacent to the major Project-area arterial roadways and highways. Based upon Tables 3.11-11, exterior noise levels would exceed the City's 60 dBA L_{dn} normally acceptable exterior noise standard. Therefore, use of a physical barrier would be the only feasible method to reduce exterior noise levels to within the City's allowable exterior noise standard range.

Tables 3.11-11 also indicates the noise reduction achieved through property line noise barriers of various heights.

TABLE 3.11-11: CUMULATIVE + PROJECT TRANSPORTATION NOISE LEVELS AT PROPOSED RESIDENTIAL USES – INDELICATO

SEGMENT	APPROXIMATE RESIDENTIAL SETBACK, FEET[1]	PREDICTED NOISE LEVELS, DB L_{DN}[2]						
		NO BARRIER	6' BARRIER	7' BARRIER	8' BARRIER	9' BARRIER	10' BARRIER	11' BARRIER
Airport Way	90	76 dB	70 dB	69 dB	68 dB	66 dB	65 dB	65 dB

NOTES:
[1] SETBACK DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS TO THE CENTER OF RESIDENTIAL BACKYARDS.
[2] THE MODELED NOISE BARRIERS ASSUME FLAT SITE CONDITIONS WHERE ROADWAY ELEVATIONS, BASE OF WALL ELEVATIONS, AND BUILDING PAD ELEVATIONS ARE APPROXIMATELY EQUIVALENT. SOUND BARRIER HEIGHT MAY BE ACHIEVED THROUGH THE USE A WALL AND EARTHEN BERM TO ACHIEVE THE TOTAL HEIGHT (I.E., 6-FOOT WALL ON 2-FOOT BERM IS EQUIVALENT TO AN 8-FOOT-TALL BARRIER).
SOURCE: SAXELBY ACOUSTICS. 2022.

The modeled noise barriers assume flat site conditions where roadway elevations, base of wall elevations, and building pad elevations are approximately equivalent. Appendix D of Appendix F shows the full barrier height calculations.

The data in Table 3.11-11 indicate that a noise barrier greater than 11-feet in height would be required to achieve compliance with the City of Manteca 60 dB L_{dn} exterior noise level standard for the proposed residential uses along Airport Way. It should be noted that Table 9-1 (Table 3.11-8) of the City's General Plan notes that residential uses are conditionally compatible with exterior noise levels of up to 65 dB L_{dn}, assuming that interior noise levels are in compliance with the City's interior noise level standards. Based upon Table 3.11-11, a 10-foot-tall barrier would achieve an exterior noise level of 65 dBA L_{dn} which meets the City's conditionally compatible exterior noise standard of up to 65 dB L_{dn}. The wall height may be achieved through a combination of earthen berm and sound wall.

INTERIOR NOISE IMPACTS AT PROPOSED RESIDENTIAL USES

Modern construction typically provides a 25-dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB L_{dn}, or less, will typically comply with the City of Manteca 45 dB L_{dn} interior noise level standard. Additional noise reduction measures, such as acoustically-rated windows, are generally required for exterior noise levels exceeding 70 dB L_{dn}.

It should be noted that noise barriers do not typically reduce exterior noise levels at second floor locations. The proposed residential uses are predicted to be exposed to unmitigated first-floor exterior transportation noise levels up to 75 dBA L_{dn} at the proposed residential uses along Airport Way. Mitigated first-floor noise levels will be under 65 dBA L_{dn} after construction of sound barriers. The second-floor locations are not expected to receive adequate shielding from the proposed sound walls and may be exposed to noise levels 2-3 dB higher than ground floor receivers. Therefore, noise levels of up to 78 dB L_{dn} are expected at the second-floor facades along Airport Way.

Based upon a 25-dB exterior-to-interior noise level reduction, interior noise levels are predicted to be up to 53 dBA L_{dn} at second floors and 40 dBA L_{dn} at first floors. Accordingly, predicted interior noise levels along the first row of residential uses along Airport Way are predicted to exceed the City's 45 dB L_{dn} interior noise level standard at second floor locations.

Appendix E (See Appendix F of this EIR) shows an estimate of the interior noise control measures required to meet the City's interior noise level standards.

Implementation of the following mitigation measure will ensure that these potential impacts are reduced to a **less than significant** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.11-1a: *Construction activities shall adhere to the requirements of the City of Manteca Municipal Code with respect to hours of operation. This requirement shall be noted in the improvements plans prior to approval by the City's Public Works Department.*

Mitigation Measure 3.11-1b: *All equipment shall be fitted with factory equipped mufflers, and in good working order. This requirement shall be noted in the improvements plans prior to approval by the City's Public Works Department.*

Mitigation Measure 3.11-2: *A 10-foot-tall barrier shall be constructed along the Airport Way frontage, adjacent to proposed Project residential uses, in order to achieve the City's exterior noise standards. Noise barrier walls shall be constructed of concrete panels, concrete masonry units, earthen berms, or any combination of these materials that achieve the required total height. Wood is not recommended due to eventual warping and degradation of acoustical performance. These requirements shall be included in the improvements plans prior to their approval by the City's Public Works Department. Figure 3.11-3 shows the recommended sound wall locations.*

Mitigation Measure 3.11-3: *For the first rows of lots adjacent to the Airport Way right of way, second floor exterior facades with a view of Airport Way would need the following noise control measures:*

- *Windows shall have a sound transmission class (STC) rating of 38.*
- *Interior gypsum at exterior walls shall be 5/8" hung on resilient channels;*
- *Ceiling gypsum shall be 5/8";*
- *Exterior finish shall be stucco, fiber cement lap siding, or system with equivalent weight per square foot;*
- *Mechanical ventilation shall be installed in all residential uses to allow residents to keep doors and windows closed, as desired for acoustical isolation.*
- *As an alternative to the above-listed interior noise control measures, the applicant may provide a detailed analysis of interior noise control measures once building plans become available. The analysis should be prepared by a qualified noise control engineer and shall outline the specific measures required to meet the City of Manteca 45 dB Ldn interior noise level standard.*

Impact 3.11-2: The proposed Project has the potential to generate excessive groundborne vibration or groundborne noise levels. (Less than Significant)

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural damage.

With the exception of vibratory compactors, the Table 3.11-7 data indicate that construction vibration levels anticipated for the Project are less than the 0.2 in/sec threshold at a distance of 25 feet. Use of vibratory compactors within 26 feet of the adjacent buildings could cause vibrations in excess of 0.2 in/sec. Sensitive receptors which could be impacted by construction-related vibrations, especially vibratory compactors/rollers, are located approximately 15 feet, or further, from the Project site.

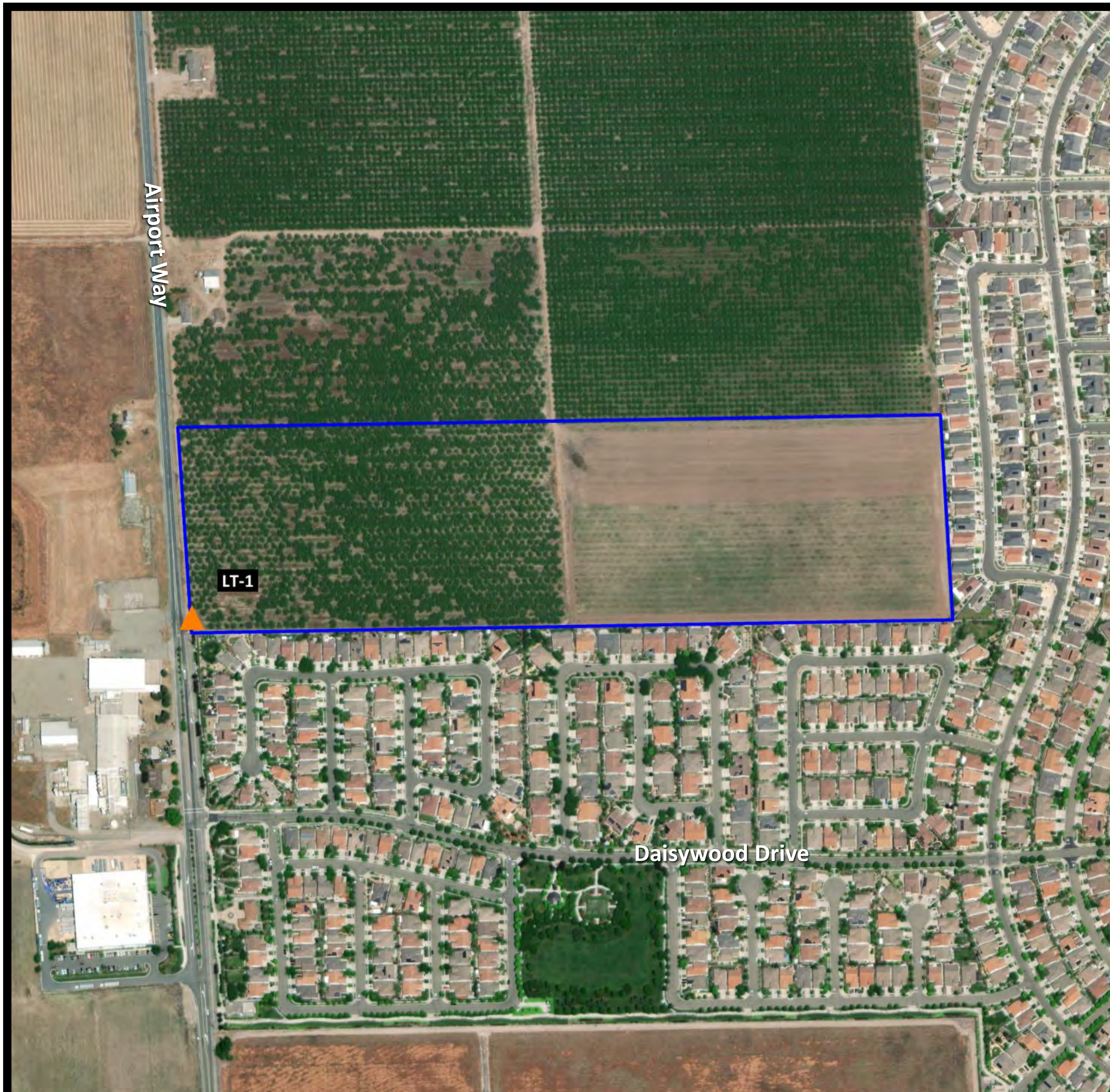
Implementation of the following mitigation measure will ensure that these potential impacts are reduced to a **less than significant** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.11-4: *Any compaction required less than 26 feet from the adjacent residential structures shall be accomplished by using static drum rollers which use weight instead of vibrations to achieve soil compaction. As an alternative to this requirement, pre-construction crack documentation and construction vibration monitoring could be conducted to ensure that construction vibrations do not cause damage to any adjacent structures.*

Impact 3.11-3: For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels. (Less Than Significant)

There are no airports within two miles of the Project vicinity. Therefore, this impact is not applicable to the proposed Project.

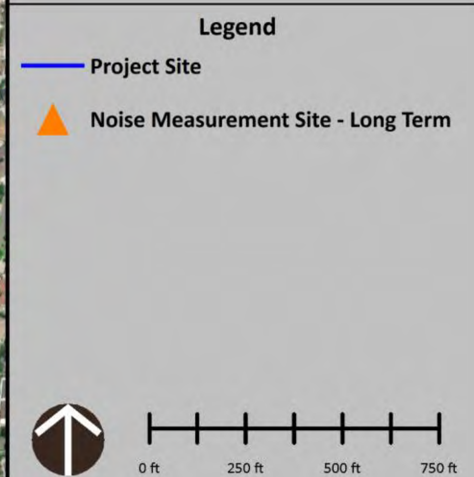


Indelicato Project

City of Manteca, California

Figure 3.11-1

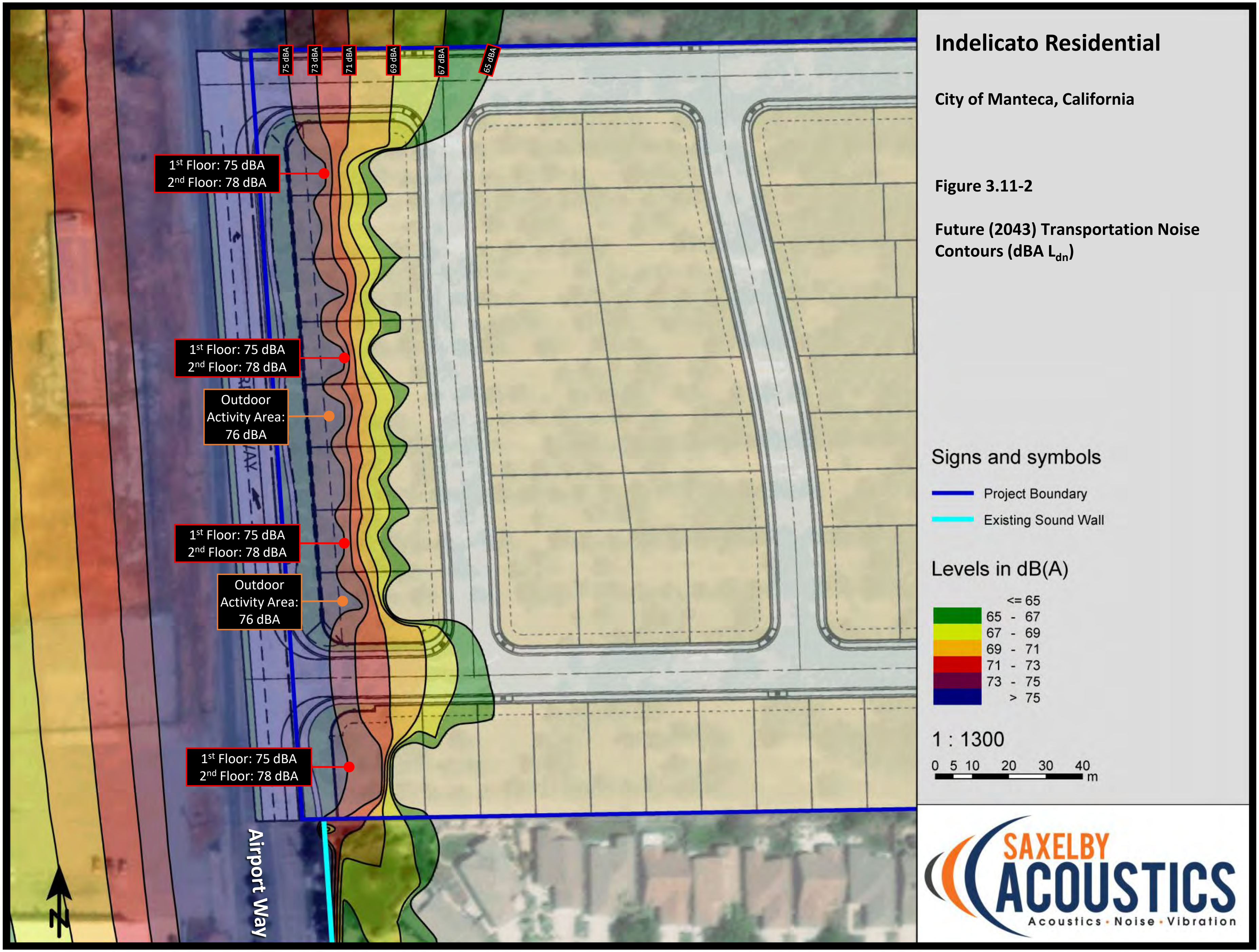
Noise Measurement Sites



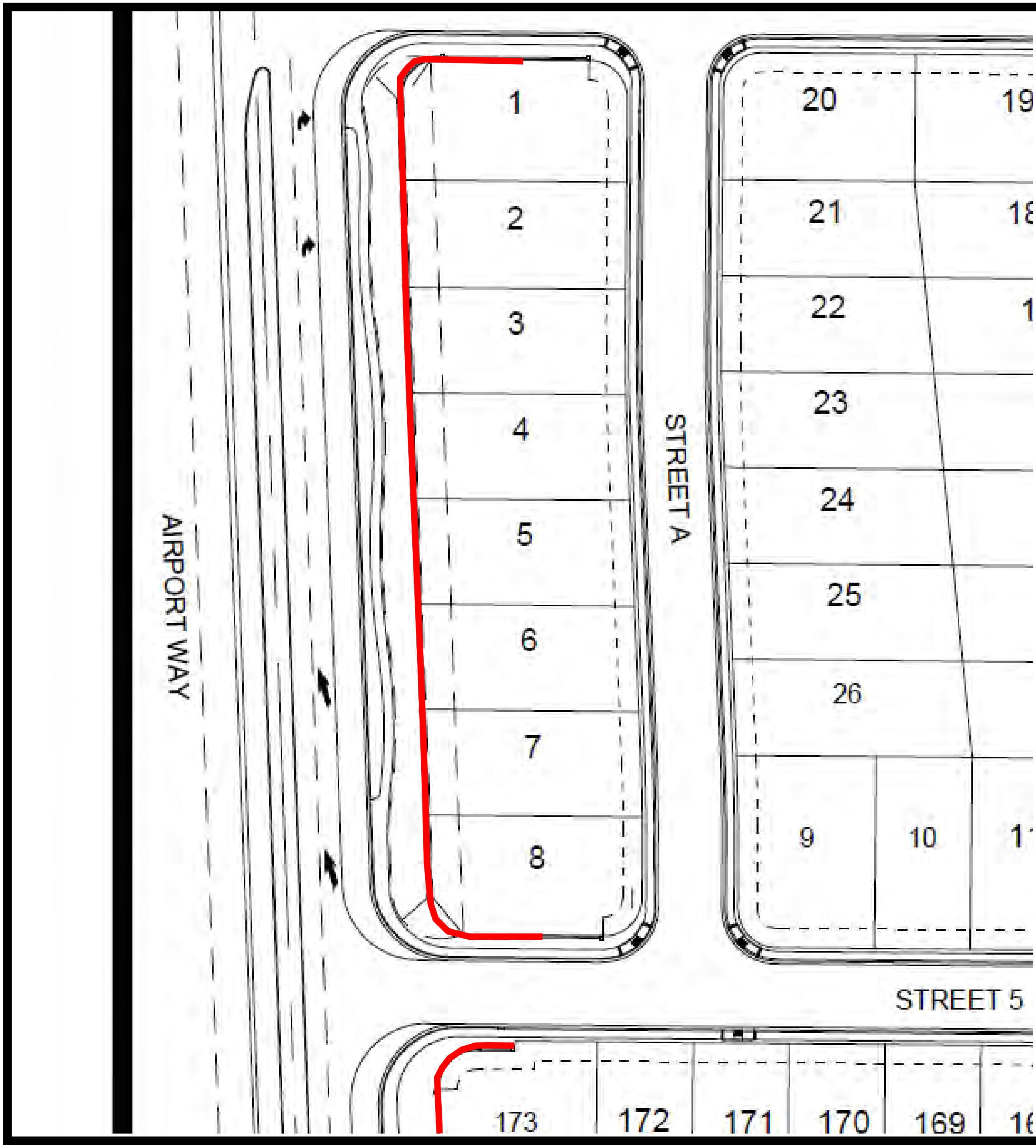
Projection: UTM Zone 10 / WGS84 / meters
Rev. Date: 12/20/2021

SAXELBY ACOUSTICS
Acoustics • Noise • Vibration

This page left intentionally blank.


Indelicato Residential
City of Manteca, California
Figure 3.11-2
Future (2043) Transportation Noise Contours (dBA L_{dn})
75 dBA
73 dBA
71 dBA
69 dBA
67 dBA
65 dBA
1st Floor: 75 dBA
2nd Floor: 78 dBA
1st Floor: 75 dBA
2nd Floor: 78 dBA
Outdoor Activity Area: 76 dBA
1st Floor: 75 dBA
2nd Floor: 78 dBA
Outdoor Activity Area: 76 dBA
1st Floor: 75 dBA
2nd Floor: 78 dBA
Airport Way
N
Signs and symbols
Project Boundary
Existing Sound Wall
Levels in dB(A)
<= 65
65 - 67
67 - 69
69 - 71
71 - 73
73 - 75
> 75
1 : 1300
0 5 10 20 30 40 m
SAXELBY ACOUSTICS
Acoustics · Noise · Vibration

This page left intentionally blank.



Indelicato Residential

City of Manteca, California

Figure 3.11-3

Recommended Sound Wall Locations

Legend

10-Foot Sound Wall

SAXELBY ACOUSTICS
Acoustics · Noise · Vibration

This page left intentionally blank.

Appendix A: Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
ASTC	Apparent Sound Transmission Class. Similar to STC but includes sound from flanking paths and correct for room reverberation. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by +5 dBA and nighttime hours weighted by +10 dBA.
DNL	See definition of Ldn.
IIC	Impact Insulation Class. An integer-number rating of how well a building floor attenuates impact sounds, such as footsteps. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
L(n)	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L50 is the sound level exceeded 50% of the time during the one-hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
NIC	Noise Isolation Class. A rating of the noise reduction between two spaces. Similar to STC but includes sound from flanking paths and no correction for room reverberation.
NNIC	Normalized Noise Isolation Class. Similar to NIC but includes a correction for room reverberation.
Noise	Unwanted sound.
NRC	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
RT60	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
SEL	Sound Exposure Level. SEL is a rating, in decibels, of a discrete event, such as an aircraft flyover or train pass by, that compresses the total sound energy into a one-second event.
SPC	Speech Privacy Class. SPC is a method of rating speech privacy in buildings. It is designed to measure the degree of speech privacy provided by a closed room, indicating the degree to which conversations occurring within are kept private from listeners outside the room.
STC	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations. The STC rating is typically used to rate the sound transmission of a specific building element when tested in laboratory conditions where flanking paths around the assembly don't exist. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

SAXELBY ACOUSTICS
Acoustics · Noise · Vibration

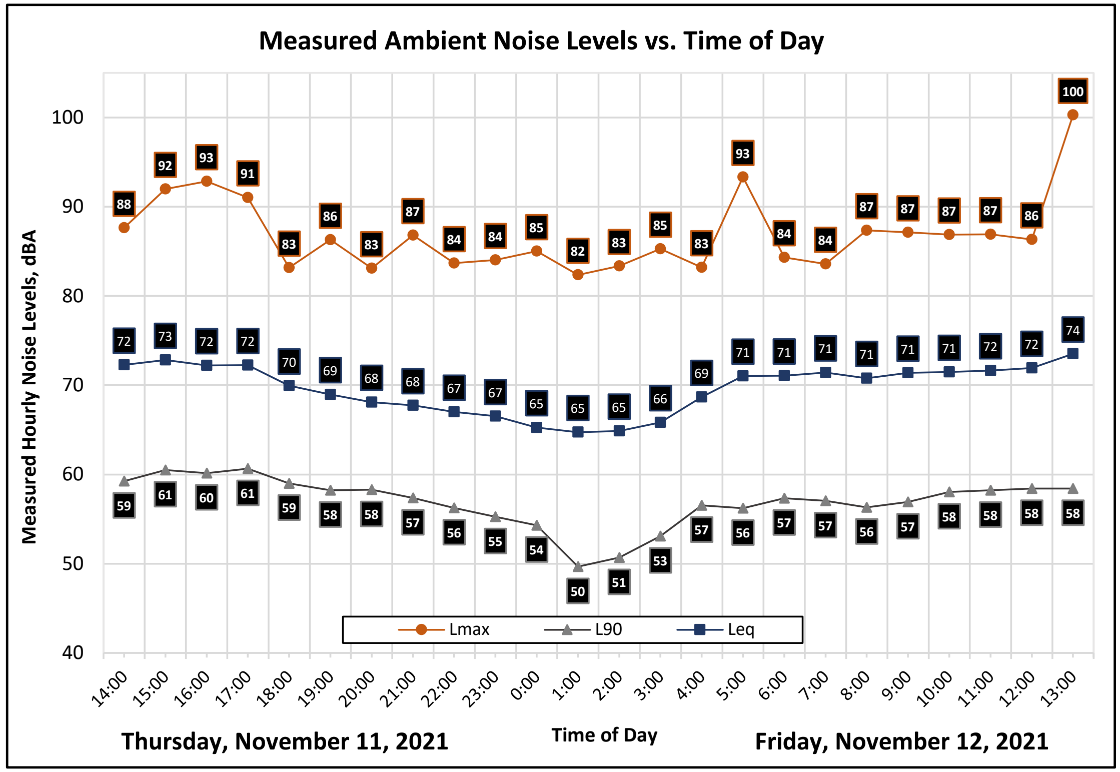
Appendix B: Continuous Ambient Noise Measurement Results

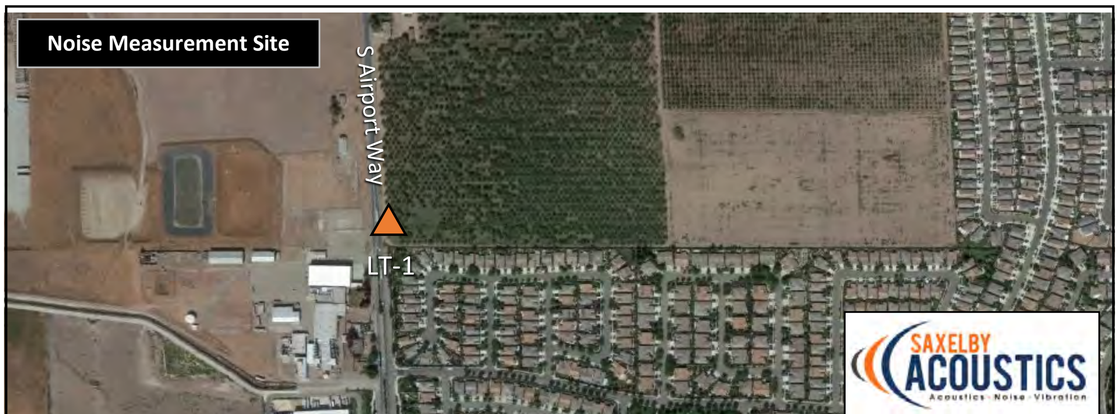
Appendix B1: Continuous Noise Monitoring Results

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Thursday, November 11, 2021	14:00	72	88	69	59
Thursday, November 11, 2021	15:00	73	92	70	61
Thursday, November 11, 2021	16:00	72	93	68	60
Thursday, November 11, 2021	17:00	72	91	69	61
Thursday, November 11, 2021	18:00	70	83	65	59
Thursday, November 11, 2021	19:00	69	86	62	58
Thursday, November 11, 2021	20:00	68	83	62	58
Thursday, November 11, 2021	21:00	68	87	61	57
Thursday, November 11, 2021	22:00	67	84	60	56
Thursday, November 11, 2021	23:00	67	84	60	55
Friday, November 12, 2021	0:00	65	85	58	54
Friday, November 12, 2021	1:00	65	82	58	50
Friday, November 12, 2021	2:00	65	83	58	51
Friday, November 12, 2021	3:00	66	85	58	53
Friday, November 12, 2021	4:00	69	83	60	57
Friday, November 12, 2021	5:00	71	93	63	56
Friday, November 12, 2021	6:00	71	84	65	57
Friday, November 12, 2021	7:00	71	84	67	57
Friday, November 12, 2021	8:00	71	87	64	56
Friday, November 12, 2021	9:00	71	87	65	57
Friday, November 12, 2021	10:00	71	87	66	58
Friday, November 12, 2021	11:00	72	87	67	58
Friday, November 12, 2021	12:00	72	86	68	58
Friday, November 12, 2021	13:00	74	100	68	58

Statistics	Leq	Lmax	L50	L90
Day Average	71	88	66	58
Night Average	68	85	60	54
Day Low	68	83	61	56
Day High	74	100	70	61
Night Low	65	82	58	50
Night High	71	93	65	57
Ldn	75	Day %		79
CNEL	75	Night %		21

Site: LT-1
Project: Indelicato Project
Location: Southern Project Boundary
Coordinates: 37.8338644°, -121.2540654°
Meter: LDL 820-2
Calibrator: CAL200





Appendix C: Traffic Noise Calculation Inputs and Results

Appendix C-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 211010

Description: Indelicato Residential - Existing Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

												Contours (ft.) - No Offset			
Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	60 dBA	65 dBA	70 dBA	Level, dBA
1	Spartan Way	West of I-5	12,240	90	0	10	1.0%	1.0%	35	80	-5	97	45	21	56.3
2	W Lathrop Road	East of I-5	22,040	90	0	10	1.0%	1.0%	35	60	0	144	67	31	65.7
3	W Lathrop Road	East of Airport Way	12,500	80	0	20	1.0%	3.0%	45	65	0	228	106	49	68.2
4	Airport Way	North of Lathrop Road	8,130	80	0	20	1.0%	1.0%	45	60	0	144	67	31	65.7
5	Airport Way	South of Lathrop Road	9,370	90	0	10	1.0%	1.0%	45	90	0	123	57	26	62.0
6	Lathrop Road	West of Airport Way	13,180	90	0	10	1.0%	1.0%	45	50	0	154	71	33	67.3
7	Main Street	South of Lathrop Road	10,870	90	0	10	1.0%	1.0%	40	55	0	111	52	24	64.6
8	Lathrop Road	West of Hwy 99	18,010	90	0	10	1.0%	1.0%	45	45	-5	189	88	41	64.4
9	Airport Way	North of Roth Road	7,560	90	0	10	1.0%	1.0%	45	80	0	106	49	23	61.8
10	Roth Road	West of Airport Way	4,410	90	0	10	1.0%	1.0%	45	50	-5	74	34	16	57.6
11	Airport Way	South of Louise Ave.	12,690	90	0	10	1.0%	1.0%	45	55	-5	150	70	32	61.5
12	Louise Ave.	West of Airport Way	10,370	90	0	10	1.0%	1.0%	40	60	0	108	50	23	63.8
13	W Yosemite Ave.	East of Airport Way	15,140	90	0	10	1.0%	1.0%	45	60	0	169	78	36	66.7
14	Airport Way	North of W Yosemite Ave.	14,040	90	0	10	1.0%	1.0%	40	60	0	132	61	28	65.1
15	Airport Way	South of W Yosemite Ave.	11,850	90	0	10	1.0%	1.0%	40	60	0	118	55	25	64.4

SAXELBY ACOUSTICS

Acoustics · Noise · Vibration

Appendix C-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 211010

Description: Indelicato Residential - Existing Plus Project Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
1	Spartan Way	West of I-5	12,300	90	0	10	1.0%	1.0%	35	80	-5	98	45	21	56.3
2	W Lathrop Road	East of I-5	22,370	90	0	10	1.0%	1.0%	35	60	0	146	68	31	65.8
3	W Lathrop Road	East of Airport Way	12,970	80	0	20	1.0%	3.0%	45	65	0	233	108	50	68.3
4	Airport Way	North of Lathrop Road	9,310	80	0	20	1.0%	1.0%	45	60	0	158	73	34	66.3
5	Airport Way	South of Lathrop Road	9,750	90	0	10	1.0%	1.0%	45	90	0	126	58	27	62.2
6	Lathrop Road	West of Airport Way	13,510	90	0	10	1.0%	1.0%	45	50	0	156	73	34	67.4
7	Main Street	South of Lathrop Road	10,950	90	0	10	1.0%	1.0%	40	55	0	112	52	24	64.6
8	Lathrop Road	West of Hwy 99	18,430	90	0	10	1.0%	1.0%	45	45	-5	192	89	41	64.5
9	Airport Way	North of Roth Road	7,640	90	0	10	1.0%	1.0%	45	80	0	107	50	23	61.9
10	Roth Road	West of Airport Way	4,660	90	0	10	1.0%	1.0%	45	50	-5	77	36	17	57.8
11	Airport Way	South of Louise Ave.	13,000	90	0	10	1.0%	1.0%	45	55	-5	152	71	33	61.6
12	Louise Ave.	West of Airport Way	10,420	90	0	10	1.0%	1.0%	40	60	0	108	50	23	63.8
13	W Yosemite Ave.	East of Airport Way	15,270	90	0	10	1.0%	1.0%	45	60	0	170	79	37	66.8
14	Airport Way	North of W Yosemite Ave.	14,350	90	0	10	1.0%	1.0%	40	60	0	134	62	29	65.2
15	Airport Way	South of W Yosemite Ave.	12,010	90	0	10	1.0%	1.0%	40	60	0	119	55	26	64.5

SAXELBY ACOUSTICS
Acoustics · Noise · Vibration

Appendix C-3

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 211010
Description: Indelicato Residential - Cumulative
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset			Level, dBA
												60 dBA	65 dBA	70 dBA	
1	Spartan Way	West of I-5	85,530	90	0	10	1.0%	1.0%	35	80	-5	356	165	77	64.7
2	W Lathrop Road	East of I-5	57,550	90	0	10	1.0%	1.0%	35	60	0	273	127	59	69.9
3	W Lathrop Road	East of Airport Way	30,740	80	0	20	1.0%	3.0%	45	65	0	415	193	89	72.1
4	Airport Way	North of Lathrop Road	16,600	80	0	20	1.0%	1.0%	45	60	0	232	108	50	68.8
5	Airport Way	South of Lathrop Road	19,400	90	0	10	1.0%	1.0%	45	90	0	199	92	43	65.2
6	Lathrop Road	West of Airport Way	33,500	90	0	10	1.0%	1.0%	45	50	0	286	133	62	71.4
7	Main Street	South of Lathrop Road	13,210	90	0	10	1.0%	1.0%	40	55	0	127	59	27	65.4
8	Lathrop Road	West of Hwy 99	35,720	90	0	10	1.0%	1.0%	45	45	-5	299	139	64	67.3
9	Airport Way	North of Roth Road	16,280	90	0	10	1.0%	1.0%	45	80	0	177	82	38	65.2
10	Roth Road	West of Airport Way	7,690	90	0	10	1.0%	1.0%	45	50	-5	107	50	23	60.0
11	Airport Way	South of Louise Ave.	30,040	90	0	10	1.0%	1.0%	45	55	-5	266	124	57	65.3
12	Louise Ave.	West of Airport Way	34,690	90	0	10	1.0%	1.0%	40	60	0	241	112	52	69.1
13	W Yosemite Ave.	East of Airport Way	23,980	90	0	10	1.0%	1.0%	45	60	0	229	106	49	68.7
14	Airport Way	North of W Yosemite Ave.	30,330	90	0	10	1.0%	1.0%	40	60	0	221	102	48	68.5
15	Airport Way	South of W Yosemite Ave.	25,280	90	0	10	1.0%	1.0%	40	60	0	195	91	42	67.7

SAXELBY ACOUSTICS
Acoustics · Noise · Vibration

Appendix C-4

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 211010
Description: Indelicato Residential - Cumulative Plus Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
1	Spartan Way	West of I-5	85,590	90	0	10	1.0%	1.0%	35	80	-5	356	165	77	64.7
2	W Lathrop Road	East of I-5	57,880	90	0	10	1.0%	1.0%	35	60	0	274	127	59	69.9
3	W Lathrop Road	East of Airport Way	31,210	80	0	20	1.0%	3.0%	45	65	0	419	195	90	72.1
4	Airport Way	North of Lathrop Road	17,780	80	0	20	1.0%	1.0%	45	60	0	243	113	52	69.1
5	Airport Way	South of Lathrop Road	19,780	90	0	10	1.0%	1.0%	45	90	0	202	94	43	65.3
6	Lathrop Road	West of Airport Way	33,830	90	0	10	1.0%	1.0%	45	50	0	288	134	62	71.4
7	Main Street	South of Lathrop Road	13,290	90	0	10	1.0%	1.0%	40	55	0	127	59	27	65.5
8	Lathrop Road	West of Hwy 99	36,140	90	0	10	1.0%	1.0%	45	45	-5	301	140	65	67.4
9	Airport Way	North of Roth Road	16,360	90	0	10	1.0%	1.0%	45	80	0	178	82	38	65.2
10	Roth Road	West of Airport Way	7,940	90	0	10	1.0%	1.0%	45	50	-5	110	51	24	60.1
11	Airport Way	South of Louise Ave.	30,350	90	0	10	1.0%	1.0%	45	55	-5	268	125	58	65.3
12	Louise Ave.	West of Airport Way	34,740	90	0	10	1.0%	1.0%	40	60	0	242	112	52	69.1
13	W Yosemite Ave.	East of Airport Way	24,110	90	0	10	1.0%	1.0%	45	60	0	230	107	50	68.8
14	Airport Way	North of W Yosemite Ave.	30,640	90	0	10	1.0%	1.0%	40	60	0	222	103	48	68.5
15	Airport Way	South of W Yosemite Ave.	25,440	90	0	10	1.0%	1.0%	40	60	0	196	91	42	67.7

SAXELBY ACOUSTICS
Acoustics • Noise • Vibration

Appendix D: Traffic Noise Barrier Calculations

Appendix D-1
FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 211010
Description Indelicato Residential
Roadway Name: Airport Way
Location(s): 1

Noise Level Data:

Year: 2022
Auto L_{dn}, dB: 74
Medium Truck L_{dn}, dB: 64
Heavy Truck L_{dn}, dB: 71

Site Geometry:

Receiver Description: North of W Lathrop Road
Centerline to Barrier Distance (C_1): 75
Barrier to Receiver Distance (C_2): 15
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

		------------------- L_{dn}, dB -------------------				Barrier Breaks Line of Sight to...		
Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
6	6	67	58	66	70	Yes	Yes	Yes
7	7	66	57	65	69	Yes	Yes	Yes
8	8	65	56	64	68	Yes	Yes	Yes
9	9	64	54	63	66	Yes	Yes	Yes
10	10	63	54	61	65	Yes	Yes	Yes
11	11	62	53	60	65	Yes	Yes	Yes
12	12	61	52	60	64	Yes	Yes	Yes
13	13	60	51	59	63	Yes	Yes	Yes
14	14	60	50	58	62	Yes	Yes	Yes

Notes: [1] Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

Appendix E: Interior Noise Reduction Calculations

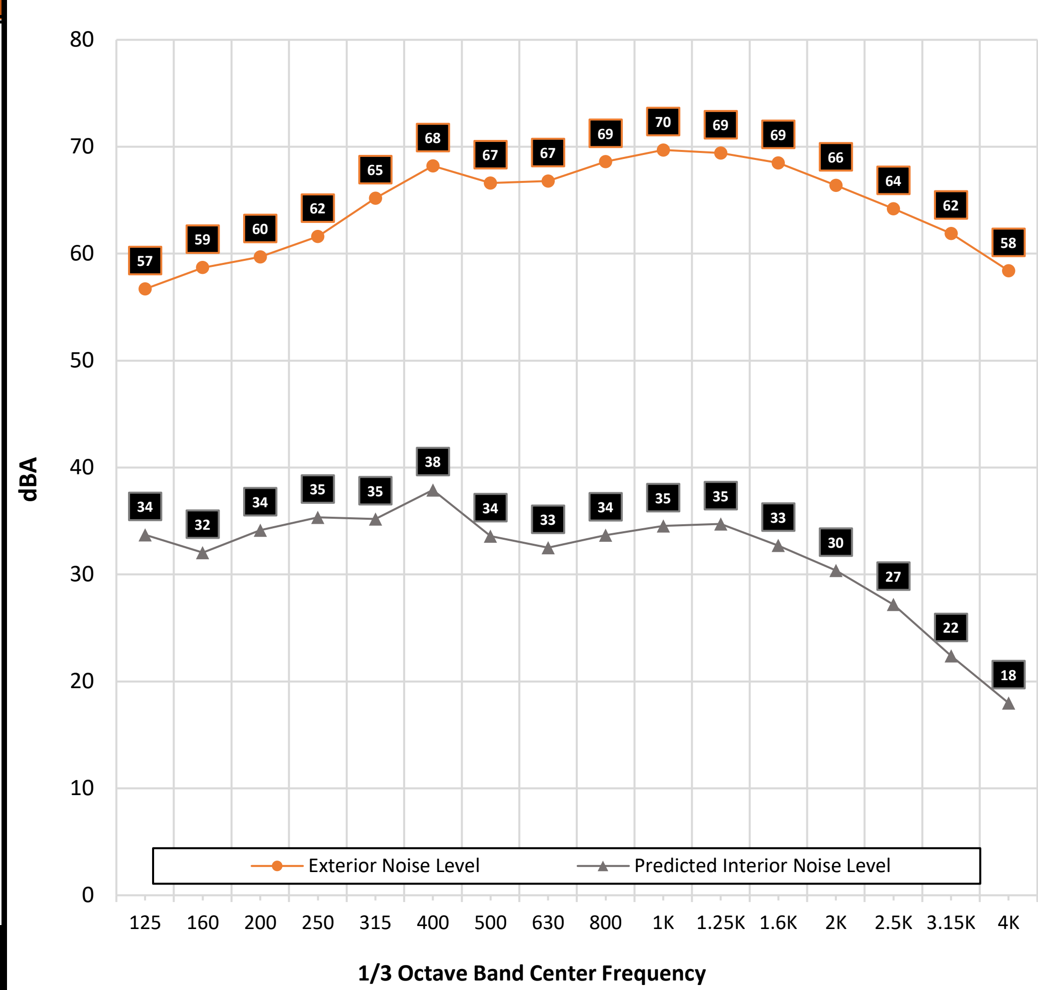
Appendix E1 : Interior Noise Calculation Sheet

Project: **211010 Indelicato Residential**
Room Description: **2nd Floor Bedroom (Airport Way)**

Inputs

Parallel Exterior level, dBA:	78.0 **Ldn**
Correction Factor, dBA:	5
Noise Source:	Arterial Traffic
Room Perimeter, ft:	44
Room Area, ft:	120
Room Height, ft:	9
Transmitting Panel Length, ft:	22
Window Area, ft:	24
Ceiling Finish:	**Gyp Board**
Ceiling, sf:	120
Wall Finish 1:	**Gyp Board**
Wall Finish 1, sf:	372
Wall Finish 2:	**Glass**
Wall Finish 2, sf:	24
Floor:	**Marble or glazed tile**
Floor, sf:	120
Misc. Finish:	**Soft Furnishings**
Misc. Finish, sf:	25
Transmitting Element 1:	**Wall - 1-Coat Stucco, RC 5/8" gyp INSUL**
Element 1, sf:	174
Transmitting Element 2:	**Window - Quiet Home STC 38**
Element 2, sf:	24
Transmitting Element 3:	
Element 3, sf:	
Transmitting Element 4:	
Element 4, sf:	

Predicted Interior Noise Level, dBA: 45
Noise Reduction, dBA: -33



SAXELBY ACOUSTICS
Acoustics · Noise · Vibration

APPENDIX D: TRANSPORTATION IMPACT ANALYSIS REPORT

KITTELSON & ASSOCIATES

KIPER INDELICATO TRANSPORTATION IMPACT ANALYSIS

MANTECA, CA

March 2, 2023
revised March 30, 2023

Kiper Indelicato Transportation Impact Analysis

Manteca, CA

Prepared for:
De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762

Prepared by:
Kittelson & Associates, Inc.
155 Grand Avenue, Suite 505
Oakland, CA 94612
510.839.1742

Project Manager:
Jacob Mirabella

Project Principal:
Mike Aronson. P.E.

Project Analyst:
Spencer Maddox

Project Number 26762

March 2, 2023
Revised March 30, 2023

CONTENTS

LIST OF FIGURES

LIST OF TABLES

Section 1
Introduction and Summary

INTRODUCTION AND SUMMARY

This report presents the findings of the transportation impact analysis (TIA) conducted for the proposed Kiper Homes at Indelicato residential development, located on vacant land along the east side of Airport Way and north of Daisywood Drive in Manteca, California.

INTRODUCTION

PROJECT DESCRIPTION

The proposed Kiper Indelicato residential development (the "Project") would develop primarily vacant land located along the east side of Airport Way and north of Daisywood Drive, as shown in Figure 1. The Project proposes to develop 173 single family residential units. Access would be provided via two driveways along Airport Way, as shown in Figure 2.

SURROUNDING LAND USES

Residential developments have been constructed to the south and east of the Project site. There would be no street connections for vehicle traffic between these adjacent residential areas and the Project. The land north of the Project site is currently vacant. Along the west side of Airport Way in the Project vicinity the surrounding land uses are primarily industrial. A railroad line, extending north and south, exists west of Airport Way, along with a rail yard for loading and unloading box containers.

SCOPE OF TRANSPORTATION IMPACT ANALYSIS

The transportation impact analysis includes two levels of evaluation:

- California Environmental Quality Act (CEQA) transportation analysis
- Local transportation analysis

CEQA Transportation Analysis

The CEQA transportation analysis includes four transportation impact evaluation areas:

a. Conflicts with circulation system programs
b. Vehicle-miles of travel (VMT)
c. Hazards
d. Emergency access

The above list includes the transportation impact areas that are considered in the CEQA environmental documentation for the Project in this study. Other transportation issues would not be part of the environmental evaluation under CEQA but may be considered as part of a local transportation analysis.

Local Transportation Analysis

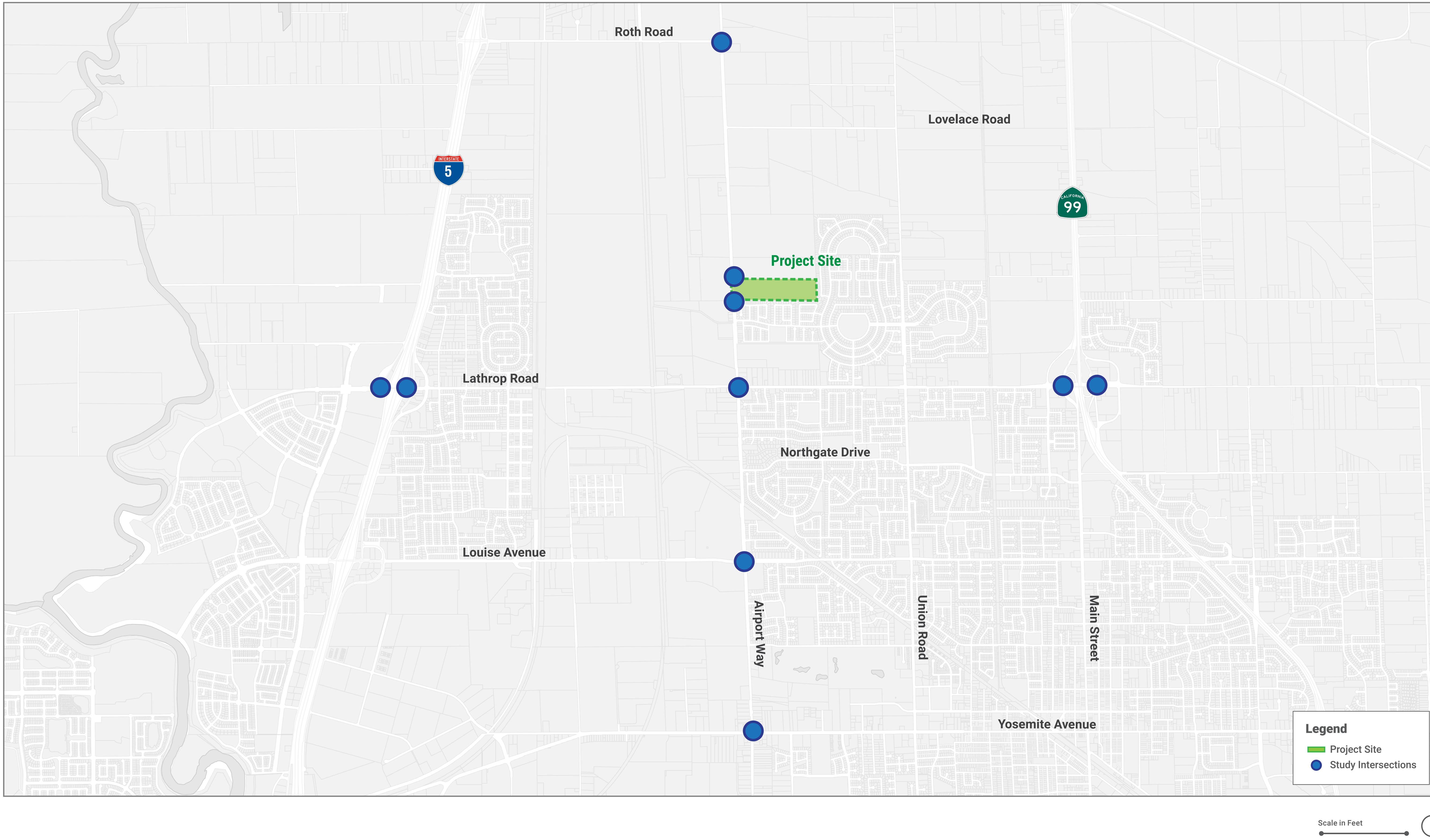
The local transportation analysis evaluates the Project's effects on the transportation system relative to City of Manteca policies and standards. The transportation issues considered in this local transportation analysis include:

- Traffic operations at study intersections
- Site access and circulation
- Parking

Traffic operations were evaluated at eight study intersections (in addition to two proposed Project driveways along Airport Way) as shown in Figure 1 for the following four scenarios:

- Existing (2021) Conditions without Project
- Existing Conditions Plus Project
- Cumulative (2040) Conditions without Project
- Cumulative Conditions plus Project

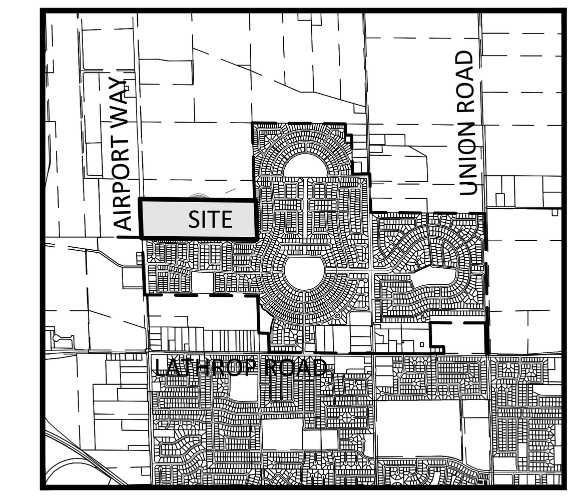
The Cumulative 2040 conditions evaluation considers future development within the City of Manteca consistent with the Manteca General Plan as well as committed transportation improvements.



Roth Road
Lovelace Road
5
99
Project Site
Lathrop Road
Northgate Drive
Louise Avenue
Airport Way
Union Road
Main Street
Yosemite Avenue
Legend
Project Site
Study Intersections
Scale in Feet
0
1,200
North

KIPER HOMES

AT INDELICATO PROPERTY, MANTECA, CA



VICINITY MAP

LEGEND

50' X 100' - 89 LOTS

60' X 100' - 84 LOTS

* = 20' NO PARKING

APN: 204-100-520

ADDRESS: 14050 S AIRPORT WAY MANTECA, CA 95336

MCR ENGINEERING

MCR ENGINEERING, INC.
1242 DUPONT COURT
MANTECA, CA 95336
TEL: (209) 239 - 6229
FAX: (209) 239 - 8839

0 80

LAND DEVELOPMENT CONCEPTUAL PLAN

SUMMARY

CEQA TRANSPORTATION ANALYSIS

- The Kiper Homes at Indelicato Project would not have any signficant impacts on the transportation system in terms of conflicts with plans, VMT, hazards or emergency access.
- The VMT per household for the Project would be 36.2 percent lower than the existing baseline VMT per household in Manteca, lower than the 15 percent threshold recommended by the State of California.

LOCAL TRANSPORTATION ANALYSIS

Intersection Operations

- All study intersections currently operate at levels of service D or better, consistent with City of Manteca General Plan target LOS policy.
- With traffic added to existing conditions by the Project, all study intersections would continue to operate at acceptable level of service D or better, consistent with the City's general plan target LOS policy.
- With 2040 cumulative growth and committed street improvements, multiple study intersections would experience traffic volumes that would exceed weekday AM and PM peak hour capacity for acceptable operations, resulting in unacceptable LOS E and F operations.
- Weekday AM and PM peak hour Project traffic volumes anticipated to be added to the local transportation network plus cumulative traffic volumes are expected to increase average delays at the intersections, typically by 1 to 4 percent.
- Improvements such as additional turn lanes are recommended to provide future cumulative intersection operations that meet the City's general plan policy of LOS D or better.

Site Access and Circulation

- The proposed side-street stop-sign controlled Project driveways along Airport Way are anticipated to provide right-in, right-out access and LOS B operations. Access from the north and to the south will require drivers to complete U-turns at the next signalized intersection on Airport Way.
- Construction of ADA compliant sidewalk along both sides of all internal Project site streets is recommended to provide good pedestrian circulation and access for all pedestrian types.
- Construction of a meandering sidewalk along the Project frontage along the eastside of Airport Way is recommended to connect the neighborhood to the City's existing sidewalk and shared-use path south of the Project site, providing residents an active transportation option. All sidewalk designs should be consistent with local design standards and ADA compliant.
- It is recommended that the Project provide onsite parking consistent with the City's Municipal Code requirements for Single-Family Dwelling Units (2 covered spaces/dwelling).

Section 2
Existing Conditions

EXISTING CONDITIONS

A description of the existing roadway, transit, bicycle, and pedestrian components of the transportation system within the study area is provided in this chapter.

DATA COLLECTION

Intersection turning movement counts were collected on Wednesday, December 8, 2021, during the AM (7:00-9:00 AM) and PM (4:00-6:00PM) peak periods at six study intersections and Tuesday, September 14, 2021, at two study intersections (excluding the Project driveway(s) which do not yet exist). Peak hour traffic count data is shown in **Figure 3**.

Additional information was collected including existing traffic controls, transit service, bicycle and pedestrian facilities, and planned transportation improvements which are described in the following sections.

ROAD NETWORK

The roadway system in the study area consists of arterial roadways and regional freeways that serve local and regional traffic demand.

FREEWAYS & HIGHWAYS

Interstate 5 (I-5) is a six-lane freeway extending north and south along the west side of the City of Manteca. The I-5 freeway extends the length of California and provides regional connectivity between Manteca and Stockton. There are I-5 interchanges at Lathrop Road, approximately 2.5 miles southwest of the Project and at Roth Road approximately 3 miles northwest of the Project site. The I-5 and SR 120 interchange exists at the southwest edge of the City of Manteca and further to the west, I-5 connects to I-205 which then connects to I-580 to Pleasanton, Tracy, Livermore, and the San Francisco Bay area.

State Route 99 (SR 99) is a six-lane highway extending north and south along the east side of the City of Manteca. SR 99 connects to Stockton, Sacramento and Red Bluff north of Manteca and Modesto and other San Joaquin Valley population centers southeast of Manteca. There is a SR 99 interchange at Lathrop Road, approximately 2.5 miles southeast of the Project site.

LOCAL STREETS

Airport Way is classified as an arterial by the City of Manteca. It provides connectivity from Stockton to the north to rural San Joaquin County to the south. It is primarily a two-lane road within the city. Outside Manteca, the facility operates as a two-lane rural highway providing access primarily to rural residential, agricultural and some industrial land uses. The curb-to-curb width is generally about 30-feet, with two 12-foot lanes and two 3-foot shoulders. Street parking is not present along Airport Way in the study area. The posted speed limit is 45 mph.

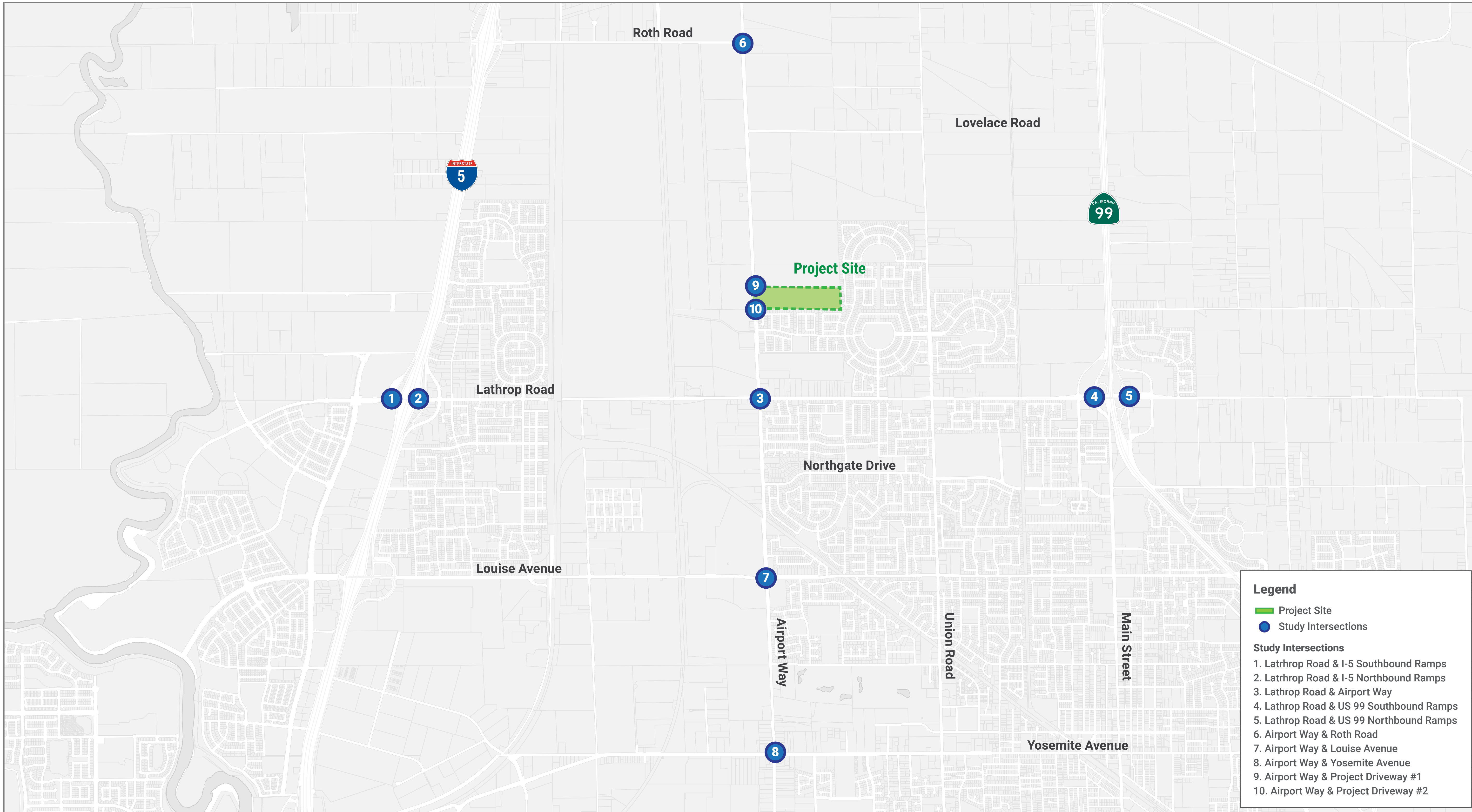


FIGURE 3 | **Existing Peak Hour Traffic Volumes**

(1 of 2)

Louise Avenue is classified as an arterial by the City of Manteca. It provides connectivity from Lathrop to the west to rural San Joaquin County to the east. East of Airport Way, Louise Avenue is a four-lane street with a center turn lane/median island. The curb-to-curb width is generally about 62-feet, with four 10-foot lanes, one 12-foot median, and two 5-foot Class II bike lanes. West of Airport Way, Louise Avenue is a two-lane street. The curb-to-curb width is about 32-feet, with two 13-foot lanes and two 6-foot shoulders. Street parking is not present. The posted speed limit is 40 mph.

Lathrop Road is an arterial roadway in the City of Manteca. It provides connectivity from Manteca into Lathrop. In Lathrop it is named Spartan Way west of I-5. It is a four-lane, divided roadway from the I-5 ramps in Lathrop to Airport Way in Manteca. Lathrop Road is a three-lane roadway (including a two-way left-turn lane) from approximately Airport Way to London Avenue, and is primarily a four-lane, divided roadway between London Avenue and just east of Union Road. From east of Union Road to west of the SR 99 ramps it is again a three-lane roadway (with two-way left-turn lane) and a two-lane, undivided roadway east of the SR 99 ramps in the study area. The roadway cross sections transition between 45- and 65-feet in the study area. The posted speed limit is 35 mph from west of the I-5 ramps to east of 5th Street and 45 mph from east of 5th Street to east of the SR 99 ramps.

TRANSIT SERVICES

The transit system in the study area consists of local bus and regional rail service. Local bus service is provided by Manteca Transit, the San Joaquin Regional Transit District, and the Modesto Area Express. Regional rail service is provided by the Altamont Commuter Express. The closest bus stop to the Project site is served by Manteca Transit Route 3 and located at Chadwick Park approximately 1 and ¼ miles away.

The transit facilities in the study area are discussed below.

MANTECA TRANSIT

Manteca Transit provides bus service in the study area. Manteca Transit bus routes and local bus stops at the time of this study are in **Table 1** and are provided in detail in the **Appendix**.

Table 1: Existing Manteca Transit Weekday Service

Route	Loop Direction	Key Destinations	Peak/Off-Peak Frequency (minutes)
1	Counterclockwise	■ Manteca Transit Center ■ Daniels Street at Stadium Center ■ Spreckles Shopping Area	60/60
2	Clockwise	■ Manteca Transit Center ■ Mission Ridge Shopping Center ■ Promenade Shops at Orchard Valley	60/60
3	Counterclockwise	■ Manteca Transit Center ■ McParland School ■ Louise Avenue ■ Manteca Golf Course	60/60
4	Clockwise	■ Manteca Transit Center ■ McParland School ■ Woodward Avenue ■ Manteca Golf Course	60/60

Source: Manteca Transit Ride Guide / System Map

Manteca Transit provides complementary origin to destination ADA paratransit services Monday-Saturday individuals who are ADA-Certified and are unable to use some or all of the provided fixed route bus services. The Project is located within the Dial-A-Ride program service area which provides service to seniors, persons with disabilities, Medicare card holders, and the general public.

Generally, curbside transit stops in the study area are identified with posted signs and do not include passenger amenities such as a shelter, seating, landscaping, bicycle parking, or pedestrian-scale lighting.

MODESTO AREA EXPRESS (MAX)

The Modesto Area Express (MAX) offers express commuter Service to the Manteca/Lathrop ACE train station from the Modesto Transit Center.

SAN JOAQUIN REGIONAL TRANSIT DISTRICT (RTD)

The San Joaquin Regional Transit District (RTD) provides service between Modesto and Stockton through Manteca via Route 91.

ALTAMONT CORRIDOR EXPRESS (ACE)

The Altamont Corridor Express (ACE) provides service from Stockton to San Jose (in the morning) and from San Jose to Stockton (in the afternoon). The Manteca Transit Center serves as the Lathrop/Manteca stop.

MANTECA TRANSIT CENTER

The Manteca Transit Center provides service to all four bus routes and the San Joaquin RTD Route 91. The ACE Lathrop/Manteca Station provides connection to Altamont Corridor Express (ACE), Modesto Area Express (MAX), and RTD Route 91. The Manteca Transit Shuttle runs between the Manteca Transit Center and the ACE Lathrop/Manteca station five times per day. The Park & Ride Lot provides access to RTD Route 91.

BICYCLE FACILITIES

This section describes the existing designated bicycle facilities in the Project vicinity.

Bicycle facilities are generally categorized into four types, as described below:

- Class I Bikeway (Bike Path). Also known as a shared path or multi-use path, a bike path is a paved right-of-way for bicycle travel that is completely separate from any street or highway.
- Class II Bikeway (Bike Lane). A striped and stenciled lane for one-way bicycle travel on a street or highway. This facility could include a buffered space between the bike lane and vehicle lane and the bike lane could be adjacent to on-street parking.
- Class III Bikeway (Bike Route). A signed route along a street where the bicyclist shares the right-of-way with motor vehicles. This facility can also be designated using a shared-lane marking (sharrow).
- Class IV Bikeway (Separated Bike Lane). A bikeway for the exclusive use of bicycles including a separation required between the separated bikeway and the through vehicular traffic. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

A Class I Shared-Use off-street path currently exists less than ¼ mile south of the Project site extending east-west along Stonebridge Park and connecting to Maple Valley Park, Union Ranch East Park, and the Manteca Tidewater Bikeway. The Manteca Tidewater Bikeway runs north-south adjacent to Northgate Park and connects to downtown and the Manteca Transit Center.

No Class II bike facilities currently exist adjacent to the Project site along Airport Way. However, the City's 2003 Bicycle Master Plan identifies Lathrop Road and Airport Way in the Project vicinity for installation of future Class II bike lanes. The City of Manteca Bicycle Master Plan is included in the Appendix for reference purposes.

PEDESTRIAN FACILITIES

Pedestrian facilities and amenities that support walking currently exist near the Project site. The availability and quality of pedestrian facilities can be qualitatively assessed using the seven key factors as shown in Table 2.

Table 2: Pedestrian Facility Conditions

Factor	Description	Assessment
Sidewalk Availability	Sidewalk availability is core to supporting walkability and safety by separating pedestrians from vehicles and other modes. In addition, it is important that sidewalks are present on <u>both sides</u> of roadways and are available along the entire segment rather than end midblock.	Sidewalks exist along the east side of Airport Way connecting to the southwest corner of the Project site and extending south to connect to the shared-use path approximately ¼ mile to the south. There are sidewalks along both sides of Daiseywood Drive and along most of the south side of Lathrop Road near Airport Way. However, a significant number of sidewalk coverage gaps exist on arterial and collector roads, including Yosemite Avenue, Airport Way, and Louise Avenue west of Airport Way.
Sidewalk Conditions	Cracked, broken, or otherwise damaged sidewalks can pose a safety hazard and discourage walking.	Existing sidewalks nearest to the Project site are generally in good condition, free of cracks or uplifts.
Crosswalk Availability	Marked crosswalks improve safety accommodating pedestrians that need to cross streets. A lack of marked crosswalks could hinder walkability since pedestrians need to travel greater distances to reach a safe marked crossing point. Drivers may also be less likely to yield to pedestrians at intersections with unmarked crossings.	High visibility ladder design crosswalks are provided at major study intersections including Airport Way & Lathrop Road and Airport Way & Louise Avenue. Traditional parallel line crosswalks are provided at Airport Way & Yosemite Avenue, Lathrop Road & I-5 Ramps, and Lathrop Road & SR 99 Ramps. No crosswalks are provided at Airport Way & Roth Road.
Shading	Shading, whether natural or artificial, can encourage walking in areas such as California, particularly the City of Manteca, which is relatively warm and sunny with limited rainfall, especially in the summer.	Natural and artifical shading for pedestrians is generally lacking in the study area due to minimal tree landscaping. However, the existing sidewalk along the east side of Airport Way as well as the shared-use path that connects to Airport Way and extends east-west provides some natural shading via small/medium size trees. Residential and local

Factor	Description	Assessment
		streets in the study area generally offer more shading in the form of street trees and landscaping.
Flat Grade	Steep hills and ravines can discourage walking, especially for pedestrians with limited mobility.	Major streets in the study area are relatively flat, though some rolling hills are present on Louise Avenue, Airport Way, and Yosemite Avenue.
Buffer	Buffers which provide separation between pedestrians and moving vehicles can help improve the walking experience, and can include landscaping, parked vehicles, and bulbouts, which serve to both reduce pedestrian crossing distances at intersections and as traffic calming measures.	In general, arterial roadways in the study area lack buffers, with existing sidewalks typically extending directly to roadway or bicycle lane edges. An exception is the approximately ¼ mile stretch of sidewalk along the east side of Airport Way directly south of the Project Site, which meanders and provides between two feet and 12 feet of separation between pedestrians and motorists. Within residential neighborhoods in the study area, buffers in the form of street landscaping and parked cars are present.
Amenities	In addition to physical facilities that accommodate walking, useful or interesting amenities along sidewalks create a more interesting walking environment, encourage active modes of travel, and increase pedestrian comfort. Amenities can include sidewalk-adjacent retail and restaurants, landscaping, and street furniture.	Pedestrian amenities primarily consist of street landscaping in residential neighborhoods. No sidewalk-adjacent retail, restaurants, or street furniture exists near the Project site.

EXISTING TRAFFIC OPERATIONS

This section provides information on the existing operating conditions for study intersections in the Project vicinity.

LEVEL OF SERVICE METHODOLOGY

Methodologies outlined in the Transportation Research Board's *Highway Capacity Manual* (HCM) are used to evaluate level of service for intersections and described in this section.

Level of Service

Level of service (LOS) describes the operating conditions experienced by persons on a transportation system. For motorized vehicles, level of service is a qualitative measure of the effects of a number of factors, including speed and travel time, traffic interruptions, freedom to maneuver, driving comfort, and convenience. Levels of service are designated LOS "A" through "F," from best to worst, which cover the entire range of traffic operations that might occur. Levels of service A through D generally represent traffic volumes at or less than roadway capacity, while LOS E and F represents conditions where traffic demands exceed capacity and the flow of traffic breaks down, resulting in stop-and-go conditions and long vehicle queues.

The City of Manteca General Plan Policy C-1.2 states that to the extent feasible, the City should strive for a vehicular LOS of D or better during weekday AM and PM peak hours at all streets and intersections, except in the Downtown area. Thus, LOS D or better is assumed as acceptable LOS at study intersections within the City and LOS E or LOS F is assumed as unacceptable operations.

Intersection LOS was analyzed using methodologies described in the 6th Edition of the *Highway Capacity Manual* (HCM 6), as implemented in the analysis software program Synchro 11.

Signalized Intersections

At signalized intersections, the level of service is determined by the weighted average delay for all vehicles entering the intersection during peak hour conditions. The calculated peak hour average total delay per vehicle and level of service for each signalized study intersection are subsequently reported. Table 3 presents the average delay criteria used to determine the level of service at signalized intersections.

Table 3: Level of Service Definition for Signalized Intersections

Level of Service (LOS)	Average Delay (seconds/vehicle)	Description
A	≤ 10	Very Low Delay: This level of service occurs when progression is extremely favorable, and most vehicles arrive during a green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	> 10 and ≤ 20	Minimal Delays: This level of service generally occurs with good progression, short cycle lengths, or both. More vehicles stop than at LOS A, causing higher levels of average delay.
C	> 20 and ≤ 35	Acceptable Delay: Delay increases due to fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level of service. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.
D	> 35 and ≤ 55	Approaching Unstable Operation/Significant Delays: The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume / capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	> 55 and ≤ 80	Unstable Operation/Substantial Delays: These high delay values generally indicate poor progression, long cycle lengths, and high volume / capacity ratios. Individual cycle failures are frequent occurrences.
F	> 80	Excessive Delays: This level, considered unacceptable to most drivers, often occurs with oversaturation (that is, when arrival traffic volumes exceed the capacity of the intersection). It may also occur at high volume / capacity ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Source: *Highway Capacity Manual 6th Edition* (HCM 6)

Unsignalized Intersections

For all-way stop control intersections, the HCM procedures calculate an average control delay per vehicle for each approach and the intersection as a whole, and assign a LOS designation based upon the average intersection delay.

For unsignalized one or two-way stop-controlled intersections, the methodology calculates an average total delay per vehicle for each minor street movement and for the major street left-turn movements based on the availability of adequate gaps in through traffic on the main street. A level of service designation is assigned to individual movements or to combinations of movements in the case of shared lanes, based on delay. It is not unusual for some of the minor street movements to have LOS “D,” “E,” or “F” conditions while the major street movements have LOS “A,” “B,” or “C” conditions. In such a case, the minor street traffic experiences delay that can be substantial for individual minor street vehicles, but the majority of vehicles using the intersection have very little delay.

Table 4 presents the average delay criteria used to determine the level of service at unsignalized intersections.

Table 4: Level of Service Definition for Unsignalized Intersections

Level of Service (LOS)	Average Delay (seconds/vehicle)	Description
A	≤ 10	Very Low Delay
B	> 10 and ≤ 15	Minimal Delays
C	> 15 and ≤ 25	Acceptable Delay
D	> 25 and ≤ 35	Approaching Unstable Operation and/or Significant Delays
E	> 35 and ≤ 50	Unstable Operation and/or Substantial Delays
F	> 50	Excessive Delays

Source: Highway Capacity Manual 6th Edition (HCM 6)
Notes: At two-way stop-controlled intersections, LOS is determined for each minor street movement and major street left turn. At all-way stop-controlled intersections, LOS is determined for each individual approach and for the entire intersections based on average control delay.

Signal Operations

Signal timing sheets for the following signalized intersections on local streets were requested and received from the city:

- Airport Way & Lathrop Road
- Airport Way & Roth Road
- Airport Way & Louise Avenue
- Airport Way & Yosemite Avenue

Caltrans District 10 provided signal timing information for the following state-controlled signalized intersections:

- Lathrop Road & I-5 Southbound Ramps
- Lathrop Road & I-5 Northbound Ramps
- Lathrop Road & SR 99 Southbound Ramps
- Lathrop Road & SR 99 Northbound Ramps

Signal timing sheets are provided in the Appendix.

EXISTING INTERSECTION OPERATIONS

Existing intersection turning movement volumes, lane configurations, and traffic control were used to calculate the levels of service at the study intersections for the weekday AM and PM peak hour conditions (Table 5). Existing conditions intersection geometries (including Project driveways that will be constructed in Plus Project conditions) are summarized and provided in the Appendix. All study intersections operate at an acceptable LOS D or better during the weekday AM and PM peak hours without Project traffic.

Table 5: Intersection Operations, Existing Conditions

No.	Intersection	Traffic Control[2]	Peak Hour	LOS[3] (Delay)[4]
1	Lathrop Road & I-5 Southbound Ramps	Signal	AM	B (18.0)
			PM	C (22.3)
2	Lathrop Road & I-5 Northbound Ramps	Signal	AM	B (13.5)
			PM	C (21.6)
3	Lathrop Road & Airport Way	Signal	AM	C (28.2)
			PM	D (35.9)
4	Lathrop Road & SR 99 Southbound Ramps	Signal	AM	B (19.3)
			PM	C (21.0)
5	Lathrop Road & SR 99 Northbound Ramps	Signal	AM	B (10.5)
			PM	B (10.2)
6	Airport Way & Roth Road	Signal	AM	B (12.4)
			PM	B (13.7)
7	Airport Way & Louise Avenue	Signal	AM	C (26.7)
			PM	D (35.9)
8	Airport Way & Yosemite Avenue	Signal	AM	C (20.3)
			PM	C (34.7)
9	Airport Way & Project Driveway #1[1]	None	AM	N/A
			PM	N/A
10	Airport Way & Project Driveway #2[1]	None	AM	N/A
			PM	N/A

Source: Kittelson & Associates, Inc. 2021.
Notes:
[1] Intersection does not exist without the Project.
[2] Signal = Signalized Intersection, TWSC = Two- or One-Way Stop Control intersection, AWSC = All-Way Stop Control Intersection.
[3] LOS = Level of Service
[4] Delay = Average vehicle delay reported in seconds per vehicle.

Section 3
Regulatory Setting

REGULATORY SETTING

This section summarizes applicable federal, state, regional, local plans, laws, and regulations that are relevant to this analysis. This information provides a context for the discussion related to the Project's consistency with applicable policies, plans, laws, and regulations.

FEDERAL REGULATIONS

This section summarizes federal agencies and laws pertinent to the proposed Project.

FEDERAL HIGHWAY ADMINISTRATION

The Federal Highway Administration (FHWA) is the United States Department of Transportation (DOT) agency responsible for the federally funded roadway system, including the interstate highway network, such as Interstate 5 (I-5) and portions of the primary state highway network.

STATE REGULATIONS

This section summarizes State of California agencies, regulations, and policies that pertain to transportation in Manteca.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

The California Environmental Quality Act (CEQA) Guidelines, Appendix G Environmental Checklist Form describes four recommended categories of impacts related to transportation and traffic. These categories are recommended for formal environmental review of projects and are referenced as appropriate for this TIA.

A project's impact is considered to be significant if it would:

a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and/or pedestrian facilities.

b. Conflict or be inconsistent with CEQA Guideline section 15064.3, subdivision (b).

c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

d. Result in inadequate emergency access.

Significance criteria "b" is related to the implementation of vehicle miles traveled (VMT) as the primary performance metric consistent with Senate Bill 743 as described below.

SENATE BILL 743

Senate Bill 743 (SB 743) was signed into law in September 2013. Senate Bill 743 (Steinberg, 2013) required changes to the California Environmental Quality Act (CEQA) Guidelines regarding the analysis of transportation impacts. The purpose of SB 743 is to promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses.

Prior to the implementation of SB 743, CEQA transportation analyses of individual projects typically determined impacts on the circulation system in terms of roadway delay and/or capacity usage at specific locations, such as street intersections or freeway segments. The SB 743 changes include the elimination of auto delay, level of service (LOS), and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts.

Under SB 743, a project's effect on automobile delay shall not constitute a significant environmental impact. Therefore, level of service (LOS) and other similar vehicle delay or capacity metrics can no longer serve as transportation impact metrics for CEQA analysis. The California Office of Planning and Research (OPR) updated the CEQA Guidelines and provided a final technical advisory in December 2018, which recommends vehicle miles traveled (VMT) as the most appropriate measure of transportation impacts under CEQA. The California Natural Resources Agency certified and adopted the CEQA Guidelines including the Guidelines section implementing SB 743. The changes have been approved by the Office of the Administrative Law and are now in effect.

Revisions to CEQA transportation analysis requirements do not preclude the application of local general plan policies, municipal and zoning codes, conditions of approval, or any other planning requirements through a city's planning approval process. These requirements aim to ensure adequate operation of the transportation system in terms of transportation congestion measures related to vehicular delay and roadway capacity.

CALIFORNIA DEPARTMENT OF TRANSPORTATION

The California Department of Transportation (Caltrans) is the primary State agency responsible for transportation issues. As owner/operator of the State Highway System, Caltrans may review projects and plans as a commenting agency or responsible agency under the California Environmental Quality Act (CEQA). In relation to this role, Caltrans published the Vehicle Miles Traveled-Focused Transportation Impact Study Guide" in May, 2020. This replaced the "Guide for the Preparation of Traffic Impact Studies" (December 2002), which established Measures of Effectiveness based on level of service targets.

Caltrans recommends following the guidance on methods of VMT assessment found in OPR's Technical Advisory. Caltrans comments on a CEQA document may note methodological deviations from those methods and may recommend that significance determinations and mitigations be aligned with state greenhouse gas reduction goals as articulated in OPR's guidance, the California Air Resources Board's Scoping Plan, and related documentation.

Caltrans facilities within the Manteca study area include I-5 and SR 99, as well as the corresponding on- and off-ramps.

For projects that may physically affect facilities under its administration, Caltrans requires encroachment permits before any construction work may be undertaken.

REGIONAL REGULATIONS

This section summarizes regional agencies, plans, and policies that pertain to transportation in Manteca.

SAN JOAQUIN COUNCIL OF GOVERNMENTS REGIONAL CONGESTION MANAGEMENT PROGRAM

The San Joaquin Council of Governments (SJCOG) is responsible for the Regional Congestion Management Program (RCMP). The purpose of the RCMP is to monitor congestion, identify congestion problems, and establish a programming mechanism aimed at reducing congestion. Designation of a regional transportation system supports RCMP monitoring activities and focuses the implementation of the RCMP on a core network of key transportation facilities that facilitate regional travel within San Joaquin County.

The RCMP network includes the following facilities in the Project study area:

- Interstate 5 (I-5)
- State Route 99 (SR 99)
- Airport Way
- Louise Road
- Yosemite Avenue
- Union Road
- Roth Road

The RCMP also designates multimodal corridors where quality of transportation service is monitored for transit, bicycles, pedestrians, and vehicles. The following multimodal corridors are designated in the study area:

- Yosemite Avenue, Airport Way to Northwoods Ave-Commerce Ave
- Lathrop Road, from Airport Way to Crestwood Avenue
- Lathrop Road, from Harlan Road to 7th Street

Prior to 2021, the RCMP included LOS standards for the RCMP network that would affect the evaluation of local development traffic impacts. Consistent with the implementation of SB 743 CEQA streamlining legislation, the 2021 RCMP discontinues the use of LOS for the evaluation of RCMP congestion deficiencies.

The RCMP identifies deficient corridors based on combined speed-based congestion and reliability metrics. None of the deficient corridors identified in the 2021 RCMP are in the Manteca study area.

LOCAL REGULATIONS

This section summarizes City policies and regulations that pertain to transportation in Manteca.

MANTECA GENERAL PLAN

The 2021 update of trhe Manteca General Plan includes the following policies relevant to the transportation evaluation of the Project (Table 6).

Table 6: Selected Manteca General Plan Policies

No.	Policy
C-1.1	Strive to balance levels of service (LOS) for all modes (vehicle, transit, bicycle, and pedestrian) to maintain a high level of access and mobility, while developing a safe, complete, and efficient circulation system. The impact of new development and land use proposals on VMT, LOS, and accessibility for all modes should be considered in the review process.
C-1.2	To the extent feasible, strive for a vehicular LOS of D or better during weekday AM and PM peak hours at all streets and intersections, except in the Downtown area or in accordance with Policy C-1.3.
C-1.3	At the discretion of the City Council or Planning Commission, certain locations may be allowed to fall below the City's LOS standard established by C-1.2 under the following circumstances: ▪ a. Where constructing facilities with enough capacity to provide LOS D is found to be unreasonably expensive. ▪ b. Where conditions are worse than LOS D and caused primarily by traffic from adjacent jurisdictions. ▪ c. Where maintaining LOS D will be a disincentive to use transit and active transportation modes (i.e., walking and bicycling) or to the implementation of transportation or land use improvements that would reduce vehicle travel. Examples include roadway or intersection widening in areas with substantial pedestrian activity or near major transit centers.
C-2.2	Design roadway improvements to occur in a contiguous, orderly fashion and strive to build roadway improvements in advance of new development particularly when addressing existing deficiencies. However, major circulation improvements shall be constructed no later than when abutting lands develop or redevelop, with dedication of right-of-way and construction of improvements, or participation in construction of such improvements, required as a condition of approval.
C-2.3	Require new development to pay a fair share of the costs of street and other transportation improvements based on impacts in conformance with the goals and policies established in this Circulation Element and the Public Facilities Implementation Program (PFIP).
C-2.13	Require development projects to arrange streets in an interconnected block pattern, so that pedestrians, bicyclists, and drivers are not forced onto arterial streets for inter- or intra-neighborhood travel. This approach will also ensure safe and efficient movement of emergency responders and ensure that vehicle miles traveled are minimized within the community. The street pattern shall include measures to provide a high level of connectivity and decrease vehicle miles traveled.

No.	Policy
C-2.14	Residential subdivisions with lots fronting on an existing arterial street shall provide for separate roadway access to the maximum extent feasible, with access to residential lots provided from residential or collector streets. For those properties that currently front arterial streets, consideration should be given to providing separate roadway access as a condition of approval for any redevelopment or subdivision of the property.
C-2.15	Ensure that development and infrastructure projects are designed in a way that provides pedestrian and bicycle connectivity to adjacent neighborhoods and areas (such as ensuring that sound walls, berms, and similar physical barriers are considered and gaps or other measures are provided to ensure connectivity).
C-2.19	In the development of new projects, give special attention to maintaining/ensuring adequate corner-sight distances appropriate for the speed and type of facility, including intersections of city streets and private access drives and roadways.

Source: Manteca General Plan, March 2021, pp, 4-2 to 4-11

TRANSPORTATION IMPACT ANALYSIS REQUIREMENTS

The City of Manteca does not have a document that establishes specific requirements for transportation impact analysis studies. The methodologies and standards used in this TIA are based on the General Plan, state requirements and guidance, prior studies conducted in the City of Manteca, and industry best practices/guidance.

Section 4
CEQA Transportation Analysis

CEQA TRANSPORTATION ANALYSIS

The Project is evaluated for transportation impacts relative to the four impact types in the CEQA checklist:

e. Conflicts with circulation system programs
f. Vehicle-miles of travel (VMT)
g. Hazards
h. Emergency access

CONFLICTS WITH PROGRAMS

The Project would have an impact if it would conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

The Project would be consistent with the City of Manteca General Plan and PFIP in terms of provisions for roadways, bicycle and pedestrian facilities:

- The Project improvements on the east side of Airport Way would not conflict with city plans to provide two northbound through lanes, a bicycle lane, and a sidewalk.
- The Project would provide sidewalks throughout the Project site to enhance local pedestrian circulation and is recommended to construct sidewalk along its Airport Way frontage, consistent with local design standards.
- The Project would not conflict with other road, transit bicycle or pedestrian plans documented by the city.

Impact 1: Less than significant

Mitigation 1: No mitigation required

VEHICLE MILES OF TRAVEL

The Project was assessed for VMT to comply with SB 743 requirements and CEQA Guideline section 15064.3, subdivision (b). The City of Manteca does not have published guidelines for VMT analysis for development projects. The methodology used is similar to a prior Manteca transportation impact study provided as an example[1]. Project VMT per capita was evaluated to determine impact findings based upon the Manteca/Lathrop Travel Demand Model. Should the Project have significant impacts for VMT, appropriate TDM measures would be recommended to reduce Project trips.

SCREENING CRITERIA

The proposed development was evaluated against the screening criteria in the Office of Planning and Research (OPR) Technical Advisory. The following criteria are applicable to residential developments:

---

[1] Fehr & Peers, "Lumina at Machado Ranch – Transportation Analysis," June, 2021

- Small projects – projects consistent with a Sustainable Communities Strategy and local general plan that generate or attract fewer than 110 trips per day.
- Projects near major transit stops – certain projects (residential, retail, office, or a mix of these uses) proposed within ½ mile of an existing major transit stop or an existing stop along a high-quality transit corridor.
- Affordable residential development – a project consisting of a high percentage of affordable housing may be a basis to find a less-than-significant impact on VMT.
- Projects in low VMT areas – residential and office projects that incorporate similar features (i.e., density, mix of uses, transit accessibility) as existing development in areas with low VMT will tend to exhibit similarly low VMT.

This Kiper Indelicato Project would generate more than 110 trips per day, would not be near a major transit stop, would not have a high percentage of affordable housing units, and would not be in an area already designated as a low VMT area. The Project would not meet the screening criteria. Therefore, a VMT analysis is required.

VMT IMPACT CRITERIA

The methodology used in other Manteca studies is based upon a comparison of future VMT conditions with the Project to existing baseline VMT conditions. The calculated residential VMT for the "with Project" scenario is compared with baseline citywide VMT per single family residential household. If the development would generate vehicle travel exceeding 15 percent below the established baseline, there is a significant impact.

The travel model developed for the City of Manteca General Plan Update was used to develop baseline (2019) VMT per single family residential household. The established baseline VMT per single family household is 103.8. Therefore, single family residential projects that exceed 88.2 VMT per household (15 percent below base year levels) would be considered to have significant transportation impacts. Projects that generate less than 88.2 VMT per household would be considered to have a less than significant transportation impact.

PROJECT VMT ANALYSIS

This Kiper Indelicato Project was added to the travel model and the total daily VMT was calculated based on the results summarized in Table 7. The Project VMT per household would be 36.2 percent lower than the baseline VMT per household, which is a greater reduction than the threshold of 15 percent lower than baseline. The Project would not have a significant impact on VMT.

Table 7: Project VMT Evaluation

Scenario	Residential Units	Daily VMT	VMT per Unit
2019 Manteca Baseline	21,226	2,203,915	103.8
2040 Project	173	11,460	66.2
Comparison to Baseline			-36.2%

Source: Kittelson & Associates 2021 based on Manteca/Lathrop Travel Demand Model

Impact 2: Less than significant

Mitigation 2: No mitigation required

HAZARDS

The Project would have an impact if it would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

- The Project proposes to provide site access via two right-in, right-out stop-controlled driveways along the east side of Airport Way. The Project access intersections will be designed and constructed per local design standards and requirements, consistent with accepted design guidelines for safety, and therefore would not be anticipated to introduce hazardous geometric design features. The Project driveways along Airport Way will not be located along a curve and it is anticipated that the provided site distance will be adequate. Connection spacing and site distance adequacy should be confirmed when the detailed site plan is submitted.
- The internal Project streets should be designed to meet the City's geometric design standards to avoid creating hazardous driving conditions.
- The internal Project streets are recommended to provide ADA compliant sidewalk along each side of the roadways so that pedestrians would be separated from vehicle traffic.
- Proposed roadway geometries/cross-sections and design features should be reviewed as part of site plan review to confirm that proposed designs are consistent with the local code and design standards and confirm that design features (such as trees, fountains, on-street parking, etc.) do not limit site distance.

Impact 3: Less than significant

Mitigation 3: No mitigation required

EMERGENCY ACCESS

The Project would have an impact if it would result in inadequate emergency access.

- The Project would provide access to all parcels via two driveways along Airport Way and an interior street system. All streets are recommended to be designed to accommodate emergency vehicles.
- As parcels adjacent to the Project develop in the future, the Project site plan allows for future street connections to the north which would provide additional emergency access routes.

Impact 4: Less than significant

Mitigation 4: No mitigation required

Section 5
Local Transportation Analysis

LOCAL TRANSPORTATION ANALYSIS

The local transportation impact analysis assesses how the study area's transportation system would operate with construction of the proposed Project.

PROJECT TRIP GENERATION

Automobile trip generation by the Project was derived from rates contained in the Institute of Transportation Engineers (ITE) *Trip Generation Manual* 11th Edition.

The proposed Project land use consists of detached single-family homes. The proposed residential development type matches ITE land use code 210 Single-Family Detached Housing which is defined as:

- Single Family Detached Housing (ITE 210) - Single-family detached housing includes any single-family detached home on an individual lot. A typical site surveyed is a suburban subdivision.

Trip generation rates derived from the published ITE fitted curve equations are provided in Table 8. It is anticipated that the roughly 2.85-acre park / basin will primarily be used by residents of this residential development. However, no internal trip capture is assumed for the 2.85-acre park / basin.

Table 8: Trip Generation Rates

Land Use	Unit	Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
			Total	In	Out	Total	In	Out
Single Family Detached Housing (210)	Dwelling Units	9.66	0.71	0.18	0.53	0.96	0.60	0.36

Source: Institute of Transportation Engineers, *Trip Generation Manual*, 11th Edition.
Note: Rates provided for informational purposes and based upon dividing fitted equation results by number of dwelling units.

Table 9 summarizes the ITE trip generation for the 173 residential units to be constructed by this proposed development.

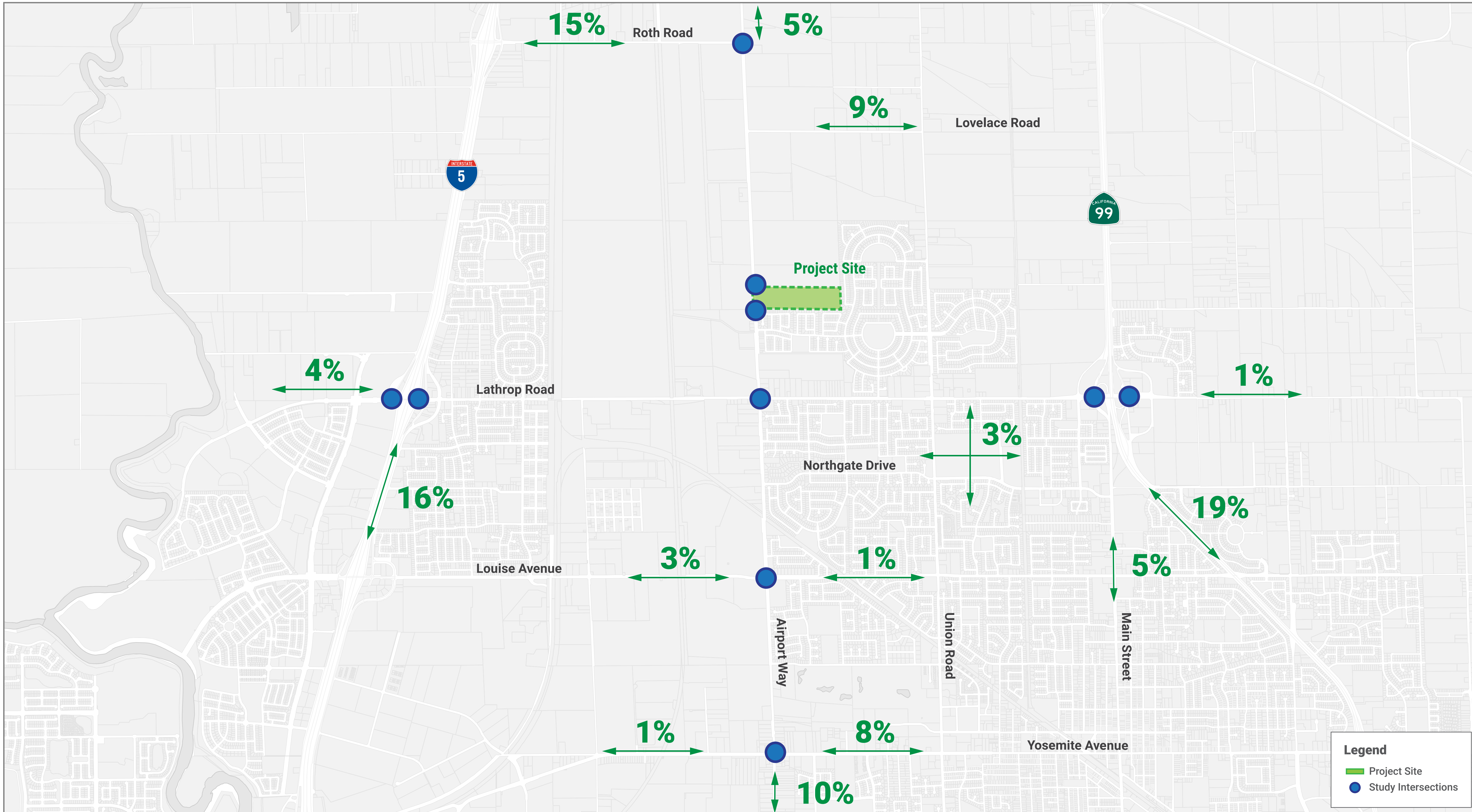
Table 9: Proposed Project Trip Generation

Land Use	Dwelling Units	Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
			Total	In	Out	Total	In	Out
Single Family Detached Housing (210)	173	1,671	123	32	91	166	104	62

Source: Kittelson & Associates, 2021.
Note: ITE fitted curve equations used for weekday daily (R^2=0.95), as well as AM peak hour (R^2=0.90) and PM peak hour (R^2=0.92) of adjacent street traffic. Daily: Ln(T) = 0.92Ln(X)+2.68, AM Peak: Ln(T) = 0.91Ln(X)+0.12, and PM Peak: Ln(T) = 0.94Ln(X)+0.27.

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

Project trip distribution refers to the percentages of trips along routes leading to and from the Project site. The trip distribution was estimated based upon the Manteca/Lathrop Travel Demand Model. The Project was coded into the travel demand model and a "select zone" assignment was used to track the estimated trips to and from the Project site for the weekday AM and PM peak hours. Figure 4 shows the assumed Project trip distribution. Project trip assignment was developed based upon the assumed trip distribution and trip generation estimates and is shown in Figure 5.

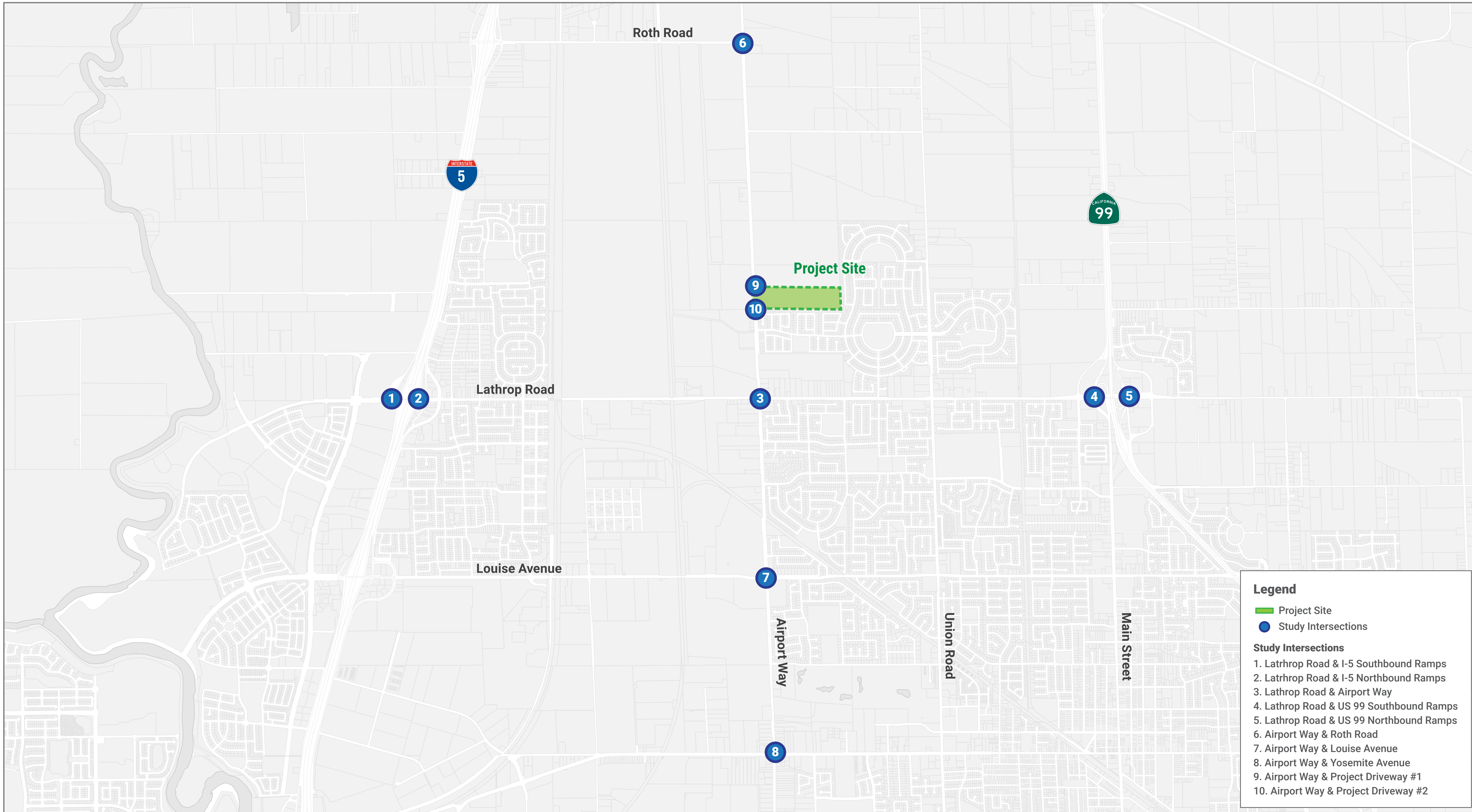


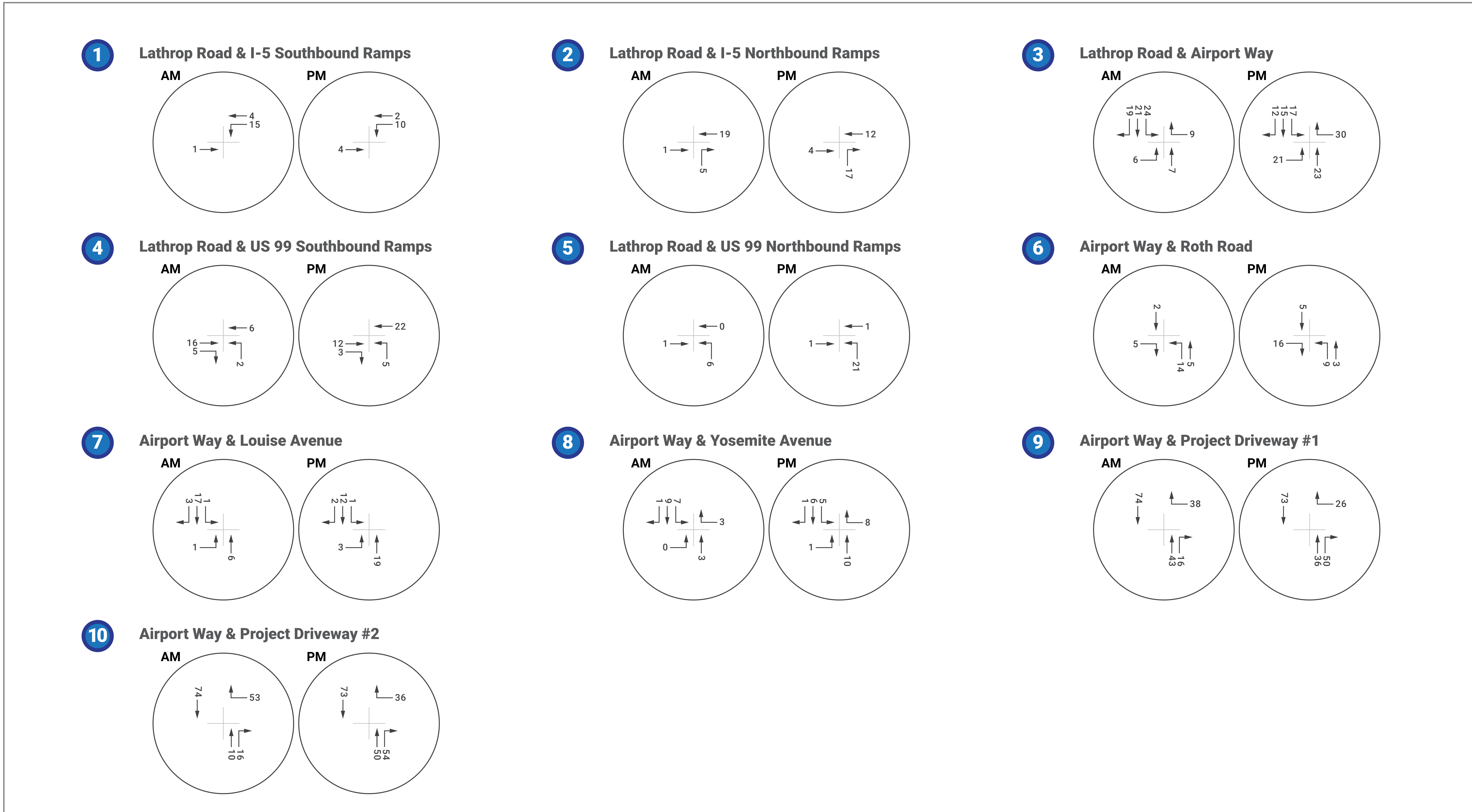
Scale in Feet
0 1,200
North

KITTELSON & ASSOCIATES

Manteca, CA. Kiper Indelicato Property | Traffic Impact Analysis

FIGURE 4 | **Project Trip Distribution**


Roth Road
Lathrop Road
Louise Avenue
Airport Way
Union Road
Main Street
5
99
Project Site
1
2
3
4
5
6
7
8
9
10
Legend
Project Site
Study Intersections
Study Intersections
1. Latrhrop Road & I-5 Southbound Ramps
2. Latrhrop Road & I-5 Northbound Ramps
3. Lathrop Road & Airport Way
4. Lathrop Road & US 99 Southbound Ramps
5. Lathrop Road & US 99 Northbound Ramps
6. Airport Way & Roth Road
7. Airport Way & Louise Avenue
8. Airport Way & Yosemite Avenue
9. Airport Way & Project Driveway #1
10. Airport Way & Project Driveway #2
Scale in Feet
0
1,200
North


1 Lathrop Road & I-5 Southbound Ramps
AM
PM
2 Lathrop Road & I-5 Northbound Ramps
AM
PM
3 Lathrop Road & Airport Way
AM
PM
4 Lathrop Road & US 99 Southbound Ramps
AM
PM
5 Lathrop Road & US 99 Northbound Ramps
AM
PM
6 Airport Way & Roth Road
AM
PM
7 Airport Way & Louise Avenue
AM
PM
8 Airport Way & Yosemite Avenue
AM
PM
9 Airport Way & Project Driveway #1
AM
PM
10 Airport Way & Project Driveway #2
AM
PM

EXISTING PLUS PROJECT TRAFFIC OPERATIONS

Intersection operations were assessed for Existing Plus Project conditions and compared to Existing conditions (Table 10). Existing conditions intersection geometries assumed in these analyses are summarized and provided in the Appendix and the assumed Project driveway control/geometry are described in the Project description section of this report. Existing plus Project vehicle volumes are shown in Figure 6.

All study intersections would operate at LOS D or better with the addition of Project (in Existing Plus Project conditions), consistent with General Plan policies.

Table 10: Intersection Operations, Existing Plus Project

No.	Intersection	Traffic Control[2]	Peak Hour	Existing LOS[3] (Delay)[4]	Existing + Project LOS[3] (Delay)[4]
1	Lathrop Road & I-5 Southbound Ramps	Signal	AM	B (18.0)	B (18.8)
			PM	C (22.3)	C (23.3)
2	Lathrop Road & I-5 Northbound Ramps	Signal	AM	B (13.5)	B (14.0)
			PM	C (21.6)	C (23.5)
3	Lathrop Road & Airport Way	Signal	AM	C (28.2)	C (30.5)
			PM	D (35.9)	D (40.9)
4	Lathrop Road & SR 99 Southbound Ramps	Signal	AM	B (19.3)	B (19.4)
			PM	C (21.0)	C (21.2)
5	Lathrop Road & SR 99 Northbound Ramps	Signal	AM	B (10.5)	B (10.6)
			PM	B (10.2)	B (10.2)
6	Airport Way & Roth Road	Signal	AM	B (12.4)	B (13.1)
			PM	B (13.7)	B (14.1)
7	Airport Way & Louise Avenue	Signal	AM	C (26.7)	C (27.3)
			PM	D (35.9)	D (36.7)
8	Airport Way & Yosemite Avenue	Signal	AM	C (20.3)	C (20.5)
			PM	C (34.7)	C (35.9)
9	Airport Way & Project Driveway #1[1]	SSSC[5]	AM	N/A	B (10.8)
			PM	N/A	B (11.3)
10	Airport Way & Project Driveway #2[1]	SSSC[5]	AM	N/A	B (10.7)
			PM	N/A	B (11.6)

Source: Kittelson & Associates, Inc. 2021.
Notes:
[1] Intersection does not exist without the Project.
[2] Signal = Signalized Intersection, SSSC = Side Street Stop Control intersection, AWSC = All-Way Stop Control Intersection.
[3] LOS = Level of Service
[4] Delay = Average vehicle delay reported in seconds per vehicle.
[5] Right-turn in/right-turn out only.

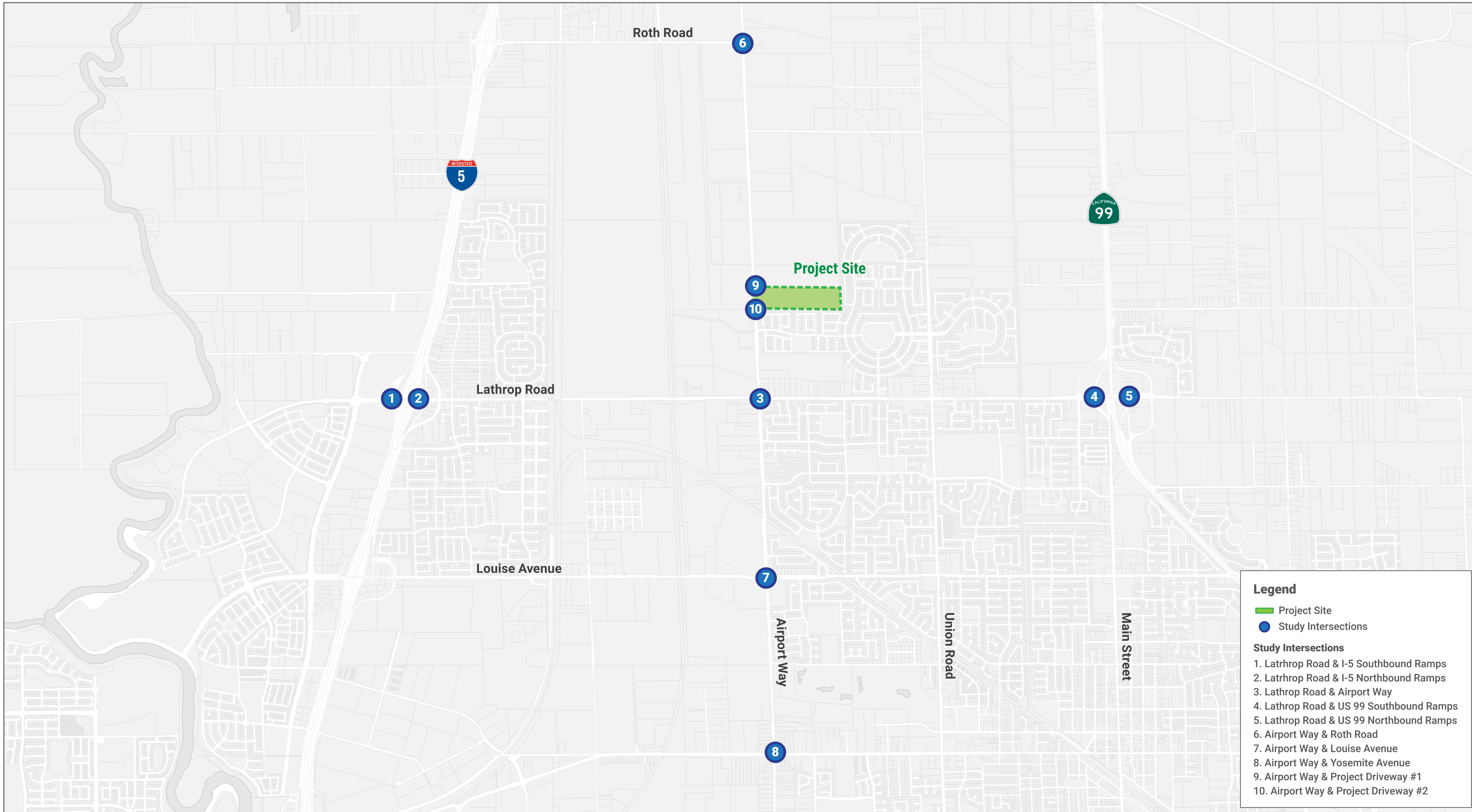
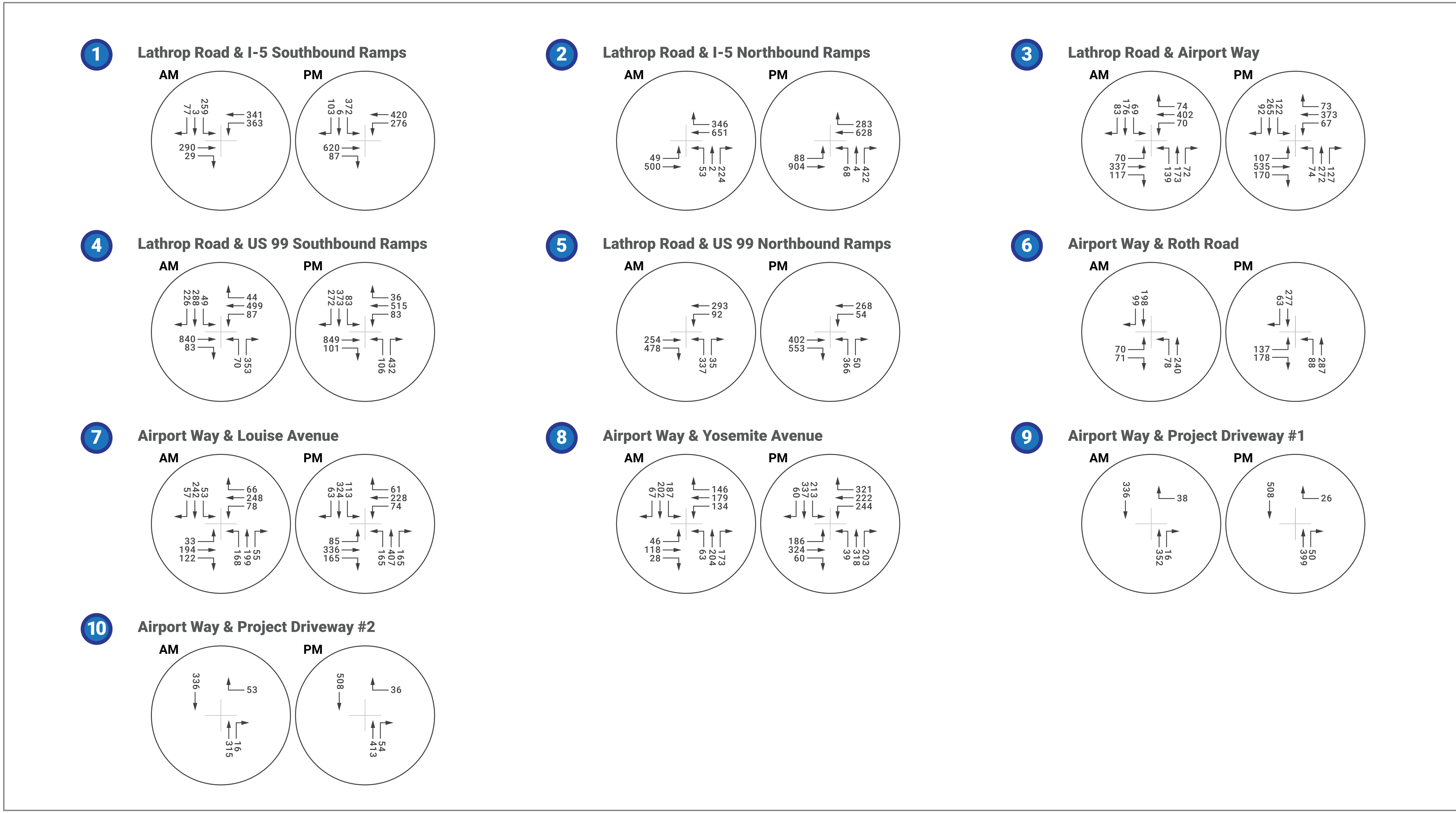


FIGURE 6 | **Existing Plus Project Peak Hour Traffic Volumes**

(1 of 2)


1 Lathrop Road & I-5 Southbound Ramps
AM
77 3 259
341 363
290 29
PM
103 6 372
420 276
620 87
2 Lathrop Road & I-5 Northbound Ramps
AM
346 651
49 500
53 2 224
PM
283 628
88 904
68 4 422
3 Lathrop Road & Airport Way
AM
83 176 69
74 402 70
70 337 117
139 173 72
PM
92 265 122
73 373 67
107 535 170
74 272 127
4 Lathrop Road & US 99 Southbound Ramps
AM
226 288 49
44 499 87
840 83
70 353
PM
272 373 83
36 515 83
849 101
106 432
5 Lathrop Road & US 99 Northbound Ramps
AM
293 92
254 478
337 35
PM
268 54
402 553
366 50
6 Airport Way & Roth Road
AM
99 198
70 71
78 240
PM
63 277
137 178
88 287
7 Airport Way & Louise Avenue
AM
57 242 53
66 248 78
33 194 122
168 199 55
PM
63 324 113
61 228 74
85 336 165
165 407 165
8 Airport Way & Yosemite Avenue
AM
67 202 187
146 179 134
46 118 28
63 204 173
PM
60 337 213
321 222 244
186 324 60
39 318 203
9 Airport Way & Project Driveway #1
AM
336
38
352 16
PM
508
26
399 50
10 Airport Way & Project Driveway #2
AM
336
53
315 16
PM
508
36
413 54

CUMULATIVE TRAFFIC OPERATIONS

The Cumulative and Cumulative Plus Project analysis estimates how the study area's transportation system would operate with growth and changes of the surrounding community by the year 2040. The changes of the surrounding communities and associated traffic changes by 2040 were derived from the Manteca/Lathrop Travel Demand Model. This model includes all approved and reasonably foreseeable growth anticipated in Manteca and the surrounding jurisdictions by 2040.

TRANSPORTATION IMPROVEMENTS

The Cumulative conditions (without Project) assume the following street improvements documented in the Transportation Public Facilities Implementation Plan (PFIP) version effective January 1, 2018.

- Airport Way (between Lathrop Rd. and Yosemite Ave.):
  - 2-lane existing cross section widened to 4-lane cross section with 11 ft lanes and 5 ft bike lanes on both sides (PLATE E-2.03 and 2.07 in PFIP)
- Airport Way (between Yosemite Ave. and Daniels Rd.):
  - 2-lane existing cross section widened to 6-lane cross section with 11 ft lanes and 5 ft bike lanes on both sides (PLATE E-2.06 in PFIP)
- Lathrop Road (between London Avenue and Railroad):
  - 2-lane existing cross section with two-way left-turn lane widened to 4-lane cross section with 11 ft lanes and 5 ft bike lanes on both sides (PLATE E-2.03 in PFIP)
- Lathrop Road (between Union Road and east of SR 99 Ramps):
  - 2-lane existing cross section with two-way left-turn lane (west of SR 99) and 2-lane existing cross section (east of SR 99) widened to 4-lane cross section with 11 ft lanes and 5 ft bike lanes on both sides (PLATE E-2.03 in PFIP)
- Modify the following signalized intersections consistent with Exhibit 3 from the PFIP:
  - Airport Way & Roth Road (INT1)
    - One northbound left-turn lane, two northbound through lanes, one southbound through lane, one shared southbound through/right-turn lane, two eastbound left-turn lanes, two eastbound right-turn lanes.
  - Airport Way & Lathrop Road (INT5)
    - Two northbound left-turn lanes, two northbound through lanes, one northbound right-turn lane, two-southbound left-turn lanes, two southbound through lanes, one southbound right-turn lane, one eastbound left-turn lane, two eastbound through lanes, one eastbound right-turn lane, one westbound left-turn lane, two westbound through lanes, one westbound right-turn lane
  - Airport Way & Louise Avenue (INT6)
    - One northbound left-turn lanes, two northbound through lanes, one northbound right-turn lane, One -southbound left-turn lanes, two southbound through lanes, one southbound right-turn lane, one eastbound left-turn lane, two eastbound through lanes, one eastbound right-turn lane, one westbound left-turn lane, two westbound through lanes, one westbound right-turn lane

- Airport Way & Yosemite Avenue (INT8)
    - One northbound left-turn lanes, two northbound through lanes, one northbound right-turn lane, One -southbound left-turn lanes, two southbound through lanes, one southbound right-turn lane, one eastbound left-turn lane, two eastbound through lanes, one eastbound right-turn lane, two westbound left-turn lanes, two westbound through lanes, one westbound right-turn lane

PFIP plates and exhibits assumed in this study are provided for reference purposes in the Appendix.

TRAFFIC FORECASTS

The traffic forecasts for Cumulative conditions are based on the Manteca/Lathrop Travel Demand Model. The travel model was recently updated in support of the 2021 Manteca General Plan Update and includes future assumptions for land use development and transportation improvements consistent with the General Plan.

Traffic forecasts for specific intersections were based on an incremental adjustment methodology to minimize the effects of differences between the travel model and observed traffic counts. For each study intersection turn movement, the increment was calculated between the model's 2018 base year turn movement and the model's 2040 forecast turn movement. This growth increment was then added to the observed traffic count to create the adjusted intersection turn movements. The adjusted turn movements were then checked to ensure logical growth and continuity between locations.

Traffic volume diagrams are included in the Appendix.

CUMULATIVE INTERSECTION OPERATIONS

Intersection operations were assessed for Cumulative Conditions (2040 growth without the Project). The operations analysis assumes intersection improvements consistent with the information provided in the PFIP as listed above. Cumulative conditions intersection geometries assumed in these analyses are summarized and provided in the Appendix. Cumulative peak hour traffic volumes are shown in Figure 7.

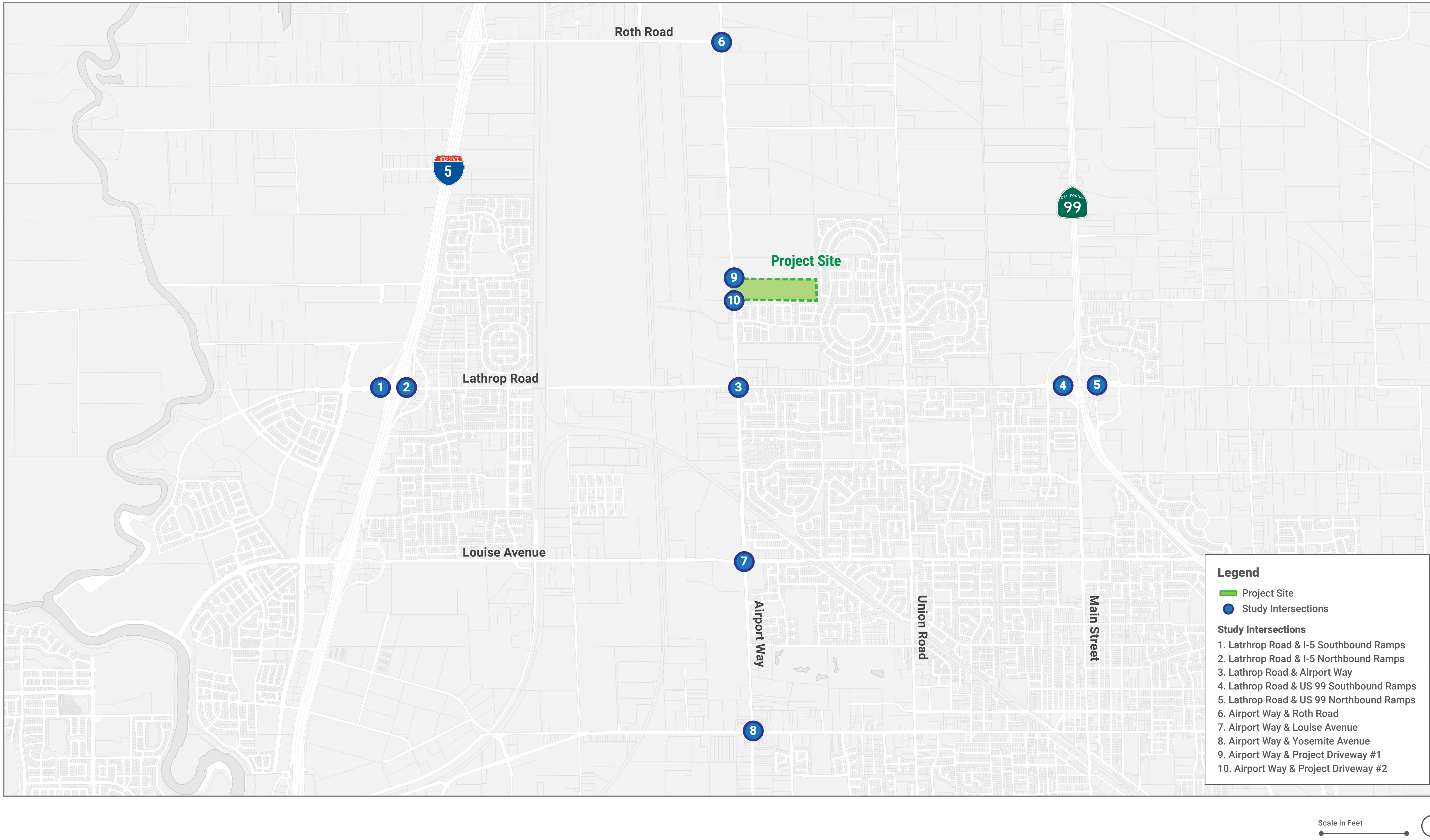
Intersection turning movement volumes, lane configurations, and traffic control were used to calculate the levels of service at the study intersections for the AM and PM peak hours (Table 11). All study intersections operate at an acceptable LOS D or better during the Cumulative Conditions weekday AM and PM peak hours without Project traffic except for the following:

- Lathrop Road & I-5 Southbound Ramps (LOS F during AM and PM peak hours)
- Lathrop Road & I-5 Northbound Ramps (LOS F during AM and PM peak hours)
- Airport Way & Louise Avenue (LOS E during AM and LOS F during PM peak hours)
- Airport Way & Yosemite Avenue (LOS E during AM and LOS F during PM peak hours)

Table 11: Intersection Operations, Cumulative

No.	Intersection	Traffic Control[2]	Peak Hour	LOS[3] (Delay)[4]
1	Lathrop Road & I-5 Southbound Ramps	Signal	AM	F (697.5)
			PM	F (742.7)
2	Lathrop Road & I-5 Northbound Ramps	Signal	AM	F (319.8)
			PM	F (552.3)
3	Lathrop Road & Airport Way	Signal	AM	D (51.7)
			PM	D (50.6)
4	Lathrop Road & SR 99 Southbound Ramps	Signal	AM	C (33.8)
			PM	C (31.2)
5	Lathrop Road & SR 99 Northbound Ramps	Signal	AM	B (13.5)
			PM	B (13.3)
6	Airport Way & Roth Road	Signal	AM	B (12.8)
			PM	B (13.1)
7	Airport Way & Louise Avenue	Signal	AM	E (61.4)
			PM	F (106.5)
8	Airport Way & Yosemite Avenue	Signal	AM	E (58.7)
			PM	F (89.3)
9	Airport Way & Project Driveway #1[1]	None	AM	N/A
			PM	N/A
10	Airport Way & Project Driveway #2[1]	None	AM	N/A
			PM	N/A

Source: Kittelson & Associates, Inc. 2021.
Notes:
[1] Intersection does not exist without the Project.
[2] Signal = Signalized Intersection, TWSC = Two- or One-Way Stop Control intersection, AWSC = All-Way Stop Control Intersection.
[3] LOS = Level of Service
[4] Delay = Average vehicle delay reported in seconds per vehicle.

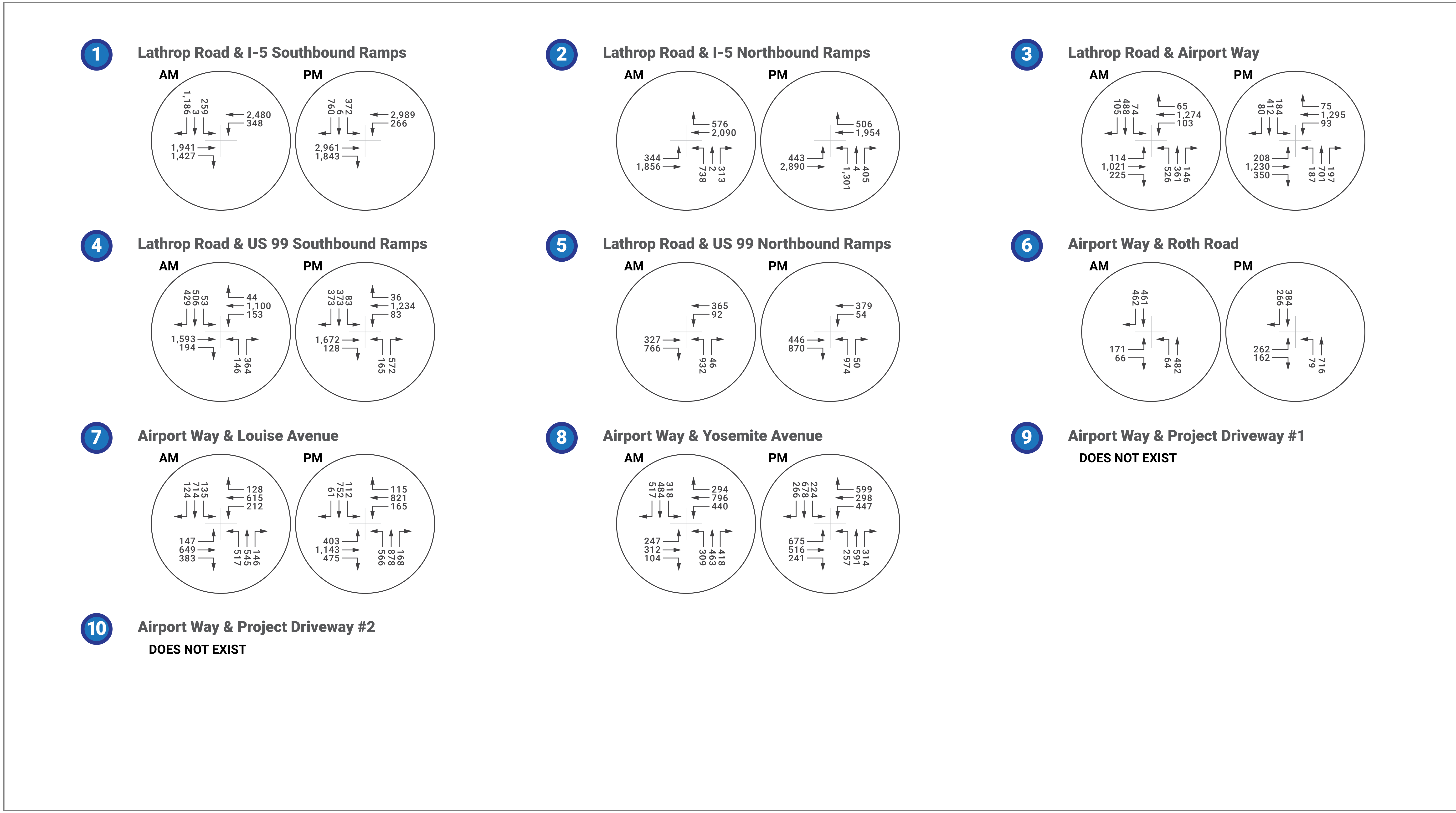


KITTELSON & ASSOCIATES

Manteca, CA. Kiper Indelicato Property | Traffic Impact Analysis

FIGURE 7 | **Cumulative Peak Hour Traffic Volumes**

(1 of 2)



1
Lathrop Road & I-5 Southbound Ramps
AM
1,186
3
259
2,480
348
1,941
1,427
PM
760
6
372
2,989
266
2,961
1,843
2
Lathrop Road & I-5 Northbound Ramps
AM
576
2,090
344
1,856
738
2
313
PM
506
1,954
443
2,890
1,301
4
405
3
Lathrop Road & Airport Way
AM
105
488
74
65
1,274
103
114
1,021
225
526
361
146
PM
80
412
184
75
1,295
93
208
1,230
350
187
701
197
4
Lathrop Road & US 99 Southbound Ramps
AM
429
506
53
44
1,100
153
1,593
194
146
364
PM
373
373
83
36
1,234
83
1,672
128
165
572
5
Lathrop Road & US 99 Northbound Ramps
AM
365
92
327
766
932
46
PM
379
54
446
870
974
50
6
Airport Way & Roth Road
AM
462
461
171
66
64
482
PM
266
384
262
162
79
716
7
Airport Way & Louise Avenue
AM
124
714
135
128
615
212
147
649
383
517
545
146
PM
61
752
112
115
821
165
403
1,143
475
566
878
168
8
Airport Way & Yosemite Avenue
AM
517
484
318
294
796
440
247
312
104
309
463
418
PM
266
678
224
599
298
447
675
516
241
257
591
314
9
Airport Way & Project Driveway #1
DOES NOT EXIST
10
Airport Way & Project Driveway #2
DOES NOT EXIST

CUMULATIVE PLUS PROJECT TRAFFIC OPERATIONS

Intersection operations were assessed for Cumulative (2040 growth without the Project) and Cumulative Plus Project conditions (Table 12). The operations analysis assumes intersection improvements consistent with the information provided in the PFIP as listed above.

Cumulative conditions intersection geometries assumed in these analyses are summarized and provided in the Appendix and the assumed Project driveway control/geometry are described in the Project description section of this report. Cumulative plus Project peak hour traffic volumes are shown in Figure 8.

All study intersections operate at an acceptable LOS D or better during the Cumulative plus Project Conditions weekday AM and PM peak hours except for the following:

- Lathrop Road & I-5 Southbound Ramps (LOS F during AM and PM peak hours)
- Lathrop Road & I-5 Northbound Ramps (LOS F during AM and PM peak hours)
- Airport Way & Louise Avenue (LOS E during AM and LOS F during PM peak hours)
- Airport Way & Yosemite Avenue (LOS E during AM and LOS F during PM peak hours)

Table 12: Intersection Operations, Cumulative Plus Project

No.	Intersection	Traffic Control[2]	Peak Hour	Cumulative LOS[3] (Delay)[4]	Cumulative + Project LOS[3] (Delay)[4]
1	Lathrop Road & I-5 Southbound Ramps	Signal	AM	F (697.5)	F (700.1)
			PM	F (742.7)	F (743.9)
2	Lathrop Road & I-5 Northbound Ramps	Signal	AM	F (319.8)	F (323.7)
			PM	F (552.3)	F (557.7)
3	Lathrop Road & Airport Way	Signal	AM	D (51.7)	D (52.5)
			PM	D (50.6)	D (53.9)
4	Lathrop Road & SR 99 Southbound Ramps	Signal	AM	C (33.8)	C (34.1)
			PM	C (31.2)	C(31.7)
5	Lathrop Road & SR 99 Northbound Ramps	Signal	AM	B (13.5)	B (13.6)
			PM	B (13.3)	B (13.4)
6	Airport Way & Roth Road	Signal	AM	B (12.8)	B (13.4)
			PM	B (13.1)	B (13.5)
7	Airport Way & Louise Avenue	Signal	AM	E (61.4)	E (62.2)
			PM	F (106.5)	F (107.8)
8	Airport Way & Yosemite Avenue	Signal	AM	E (58.7)	E (62.0)
			PM	F (89.3)	F (96.9)
9	Airport Way & Project Driveway #1[1]	SSSC[5]	AM	N/A	B (10.9)
			PM	N/A	B (13.5)
10	Airport Way & Project Driveway #2[1]	SSSC[5]	AM	N/A	B (10.9)
			PM	N/A	B (13.9)

Source: Kittelson & Associates, Inc. 2021.
Notes:
[1] Intersection does not exist without the Project.
[2] Signal = Signalized Intersection, SSSC = Side Street Stop Control intersection, AWSC = All-Way Stop Control Intersection.
[3] LOS = Level of Service
[4] Delay = Average vehicle delay reported in seconds per vehicle.[5] Right-turn in/right-turn out only.

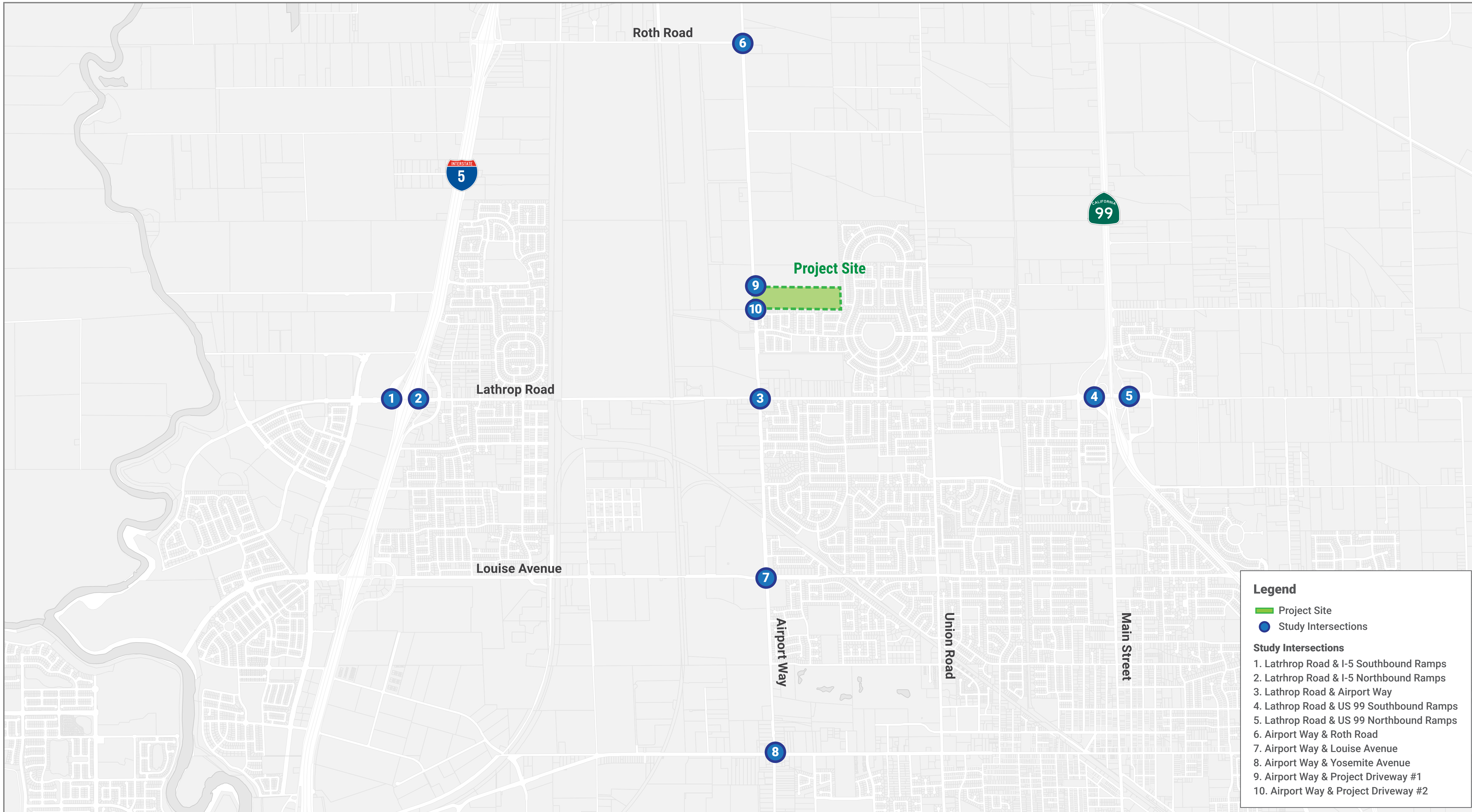
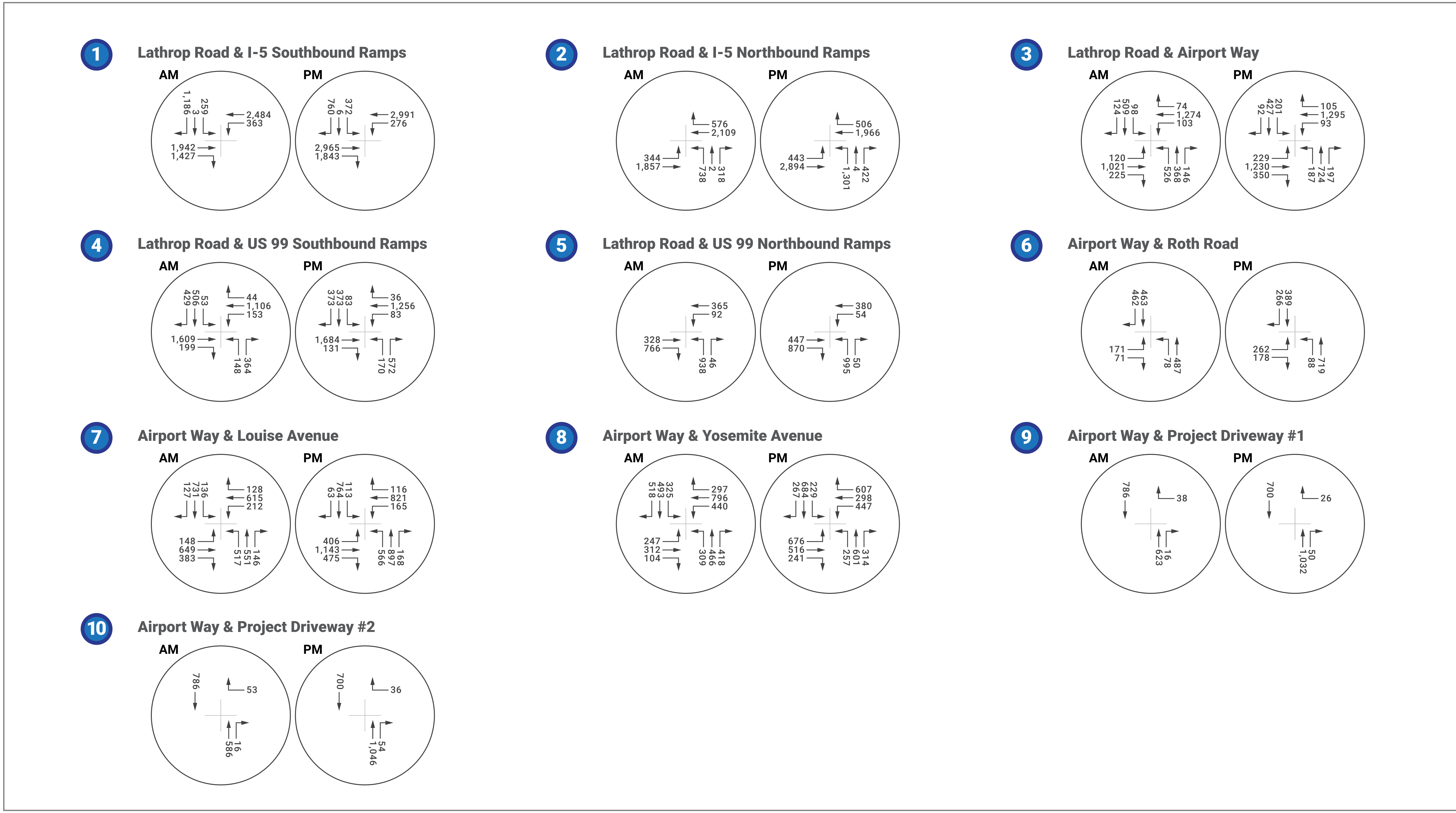


FIGURE 8 | **Cumulative Plus Project Peak Hour Traffic Volumes**

(1 of 2)



1 Lathrop Road & I-5 Southbound Ramps
AM
1,186 3 259
2,484 363
1,942 1,427
PM
760 6 372
2,991 276
2,965 1,843
2 Lathrop Road & I-5 Northbound Ramps
AM
576 2,109
344 1,857
738 2 318
PM
506 1,966
443 2,894
1,301 4 422
3 Lathrop Road & Airport Way
AM
124 509 98
74 1,274 103
120 1,021 225
526 368 146
PM
92 427 201
105 1,295 93
229 1,230 350
187 724 197
4 Lathrop Road & US 99 Southbound Ramps
AM
429 506 53
44 1,106 153
1,609 199
148 364
PM
373 373 83
36 1,256 83
1,684 131
170 572
5 Lathrop Road & US 99 Northbound Ramps
AM
365 92
328 766
938 46
PM
380 54
447 870
995 50
6 Airport Way & Roth Road
AM
462 463
171 71
78 487
PM
266 389
262 178
88 719
7 Airport Way & Louise Avenue
AM
127 731 136
128 615 212
148 649 383
517 551 146
PM
63 764 113
116 821 165
406 1,143 475
566 897 168
8 Airport Way & Yosemite Avenue
AM
518 493 325
297 796 440
247 312 104
309 466 418
PM
267 684 229
607 298 447
676 516 241
257 601 314
9 Airport Way & Project Driveway #1
AM
786
38
623 16
PM
700
26
1,032 50
10 Airport Way & Project Driveway #2
AM
786
53
586 16
PM
700
36
1,046 54

The travel model indicates large increases in traffic volumes on Airport Way and the intersecting roads for the 2040 forecast year. Therefore, many of the intersections would have demands that exceed the committed capacity resulting in LOS F conditions at multiple study intersections.

Based on the analyses, the Project is anticipated to increase delays but not change the LOS at any study intersection in Cumulative Plus Project conditions. Most of the changes in average delay caused by Project traffic would be in the range of 1 to 2 percent in the AM peak hour and 0 to 4 percent in the PM peak hour.

Recommended Intersection Improvements

The following improvements are recommended to provide future intersection operations consistent with the General Plan Policy C-1.2 which specifies that the city shall strive for LOS D operations outside the Downtown area.

Lathrop Road and I-5 Ramps

These freeway ramp intersections are located within the City of Lathrop, southwest of the Project site. The San Joaquin Council of Governments has identified the need for Lathrop Road and I-5 interchange improvements to accommodate the anticipated traffic increases. In particular, significant growth in traffic is anticipated by the Central Lathrop Specific Plan Area and other planned developments located west of I-5 in the City of Lathrop. Construction of future interchange improvements are currently unfunded and draft concepts have been presented to the public. The Cumulative Plus Project with Improvements analyses presented in this study evaluated the Lathrop Road & I-5 intersections with potential improvements identified in concept layouts presented to the public and shown in Figure 9. The conceptual improvements include:

- Lathrop Road widened to eight lanes at the interchange; and
- Loop on-ramps will be constructed to eliminate left-turns onto I-5.

At the Lathrop Road and I-5 SB Off-Ramps, the eastbound approach is assumed to have 4 through lanes and one dedicated right turn lane. The westbound approach is assumed to have three through lanes and one dedicated right turn lane. The southbound approach is assumed to have two dedicated right turn lanes and two dedicated left turn lanes. At the Lathrop Road and I-5 NB Ramps, the eastbound approach is assumed to have 3 through lanes and two dedicated right turn lanes. The westbound approach is assumed to have three through lanes and one dedicated right turn lane. The northbound approach is assumed to have three dedicated left turn lanes and one dedicated right turn lane.

This configuration is anticipated to provide LOS D or better operations with Cumulative Plus Project traffic volumes.

Figure 9: I-5 & Lathrop Road Future Alignment Concept Layout

Airport Way and Louise Avenue

The PFIP indicates that Louise Avenue and Airport Way will have two through lanes in each direction along with exclusive right-turn lanes and left-turn lanes for each approach. These improvements would alleviate future traffic congestion and improve delays; however, deficient LOS would persist during weekday AM and PM peak hour conditions. It is also recommended that all approaches at the intersection be widened to provided dual left-turn lanes in place of the existing single left-turn lanes.

Airport Way and Yosemite Avenue

The PFIP indicates that Airport Way will have two through lanes in each direction along with exclusive right-turn and left-turn lanes for all approaches. The westbound approach will have two left-turn lanes. These improvements would reduce future traffic congestion and improve delays; however, deficient LOS would persist during weekday AM and PM peak hour conditions. It is also recommended that the northbound, southbound, and eastbound approaches at the intersection be widened to provided dual left-turn lanes in place of the existing single left-turn lanes.

Implementation of the recommended improvements described above is anticipated to result in acceptable operations at all previously deficient study intersections. Analysis results for the recommended improvements are summarized in Table 13 below.

Table 13: Intersection Operations, Cumulative Plus Project with Recommended Improvements

No.	Intersection	Traffic Control[2]	Peak Hour	Cumulative + Project LOS[3] (Delay)[4]
1	Lathrop Road & I-5 Southbound Ramps	Signal	AM	D (48.8)
			PM	C (34.7)
2	Lathrop Road & I-5 Northbound Ramps	Signal	AM	B (18.5)
			PM	C (31.0)
3	Lathrop Road & Airport Way	Signal	AM	D(49.6)
			PM	D(48.5)
7	Airport Way & Louise Avenue	Signal	AM	C (33.2)
			PM	D (53.2)
8	Airport Way & Yosemite Avenue	Signal	AM	D (47.7)
			PM	D (51.3)

Source: Kittelson & Associates, Inc. 2021.
Notes:
[1] Intersection does not exist without the Project.
[2] Signal = Signalized Intersection, TWSC = Two- or One-Way Stop Control intersection, AWSC = All-Way Stop Control Intersection.
[3] LOS = Level of Service
[4] Delay = Average vehicle delay reported in seconds per vehicle.

Improvement Phasing ("Trigger") Analysis

An analysis of the timeframe when improvements would be required was prepared for the following study intersections that are forecasted to operate at deficient LOS in the future:

- Lathrop Road & I-5 Southbound Ramps
- Lathrop Road & I-5 Northbound Ramps
- Airport Way & Louise Avenue
- Airport Way & Yosemite Avenue

Each of the above intersections are estimated to operate at acceptable LOS in existing conditions with project traffic, but operations are anticipated to degrade to deficient LOS in the future (with and without project traffic). This trigger analysis was prepared to estimate at what year in the future the LOS at each study intersection would be expected to change from acceptable LOS D to deficient LOS E. Detailed results are provided in the Appendix.

A linear growth relationship is assumed in this analysis between existing plus project and cumulative plus project traffic volumes for failure year determination purposes. The results of this analysis indicate the following:

- Lathrop Road & I-5 SB Ramps operations are estimated to degrade to deficient LOS E by the year 2024.
- Lathrop Road & I-5 NB Ramps operations are estimated to degrade to deficient LOS E by the year 2024.
- Airport Way & Louise Avenue operations are estimated to degrade to deficient LOS E by the year 2034.
- Airport Way & Yosemite Avenue operations are estimated to degrade to deficient LOS E by the year 2034.

Note that the failure years estimated in this section are based on a number of assumptions which could vary depending on the state of the local economy, development conditions and approvals within the City of Manteca, and the inherent variability of traffic patterns. It is recommended that the city monitor operating conditions as growth occurs to determine the most appropriate year for implementation of improvements.

Interstate 5 and Lathrop Road Ramp Intersections

There are no deficient operations projected at the intersections of the I-5 SB and NB Ramps with Lathrop Road under Existing (LOS B/C - AM/PM) or Existing plus Project (LOS B/C - AM/PM) conditions. Under cumulative conditions (2040), without or with the Kiper Indelicato Project, these I-5 ramp intersections would operate at LOS F without planned improvements, with the potential for degradation to LOS E by 2024. The main sources of traffic impacting these ramps under the cumulative scenario would be the Central Lathrop Specific Plan Area and other planned developments located west of I-5 in the City of Lathrop.

The conceptual plan for the interchange improvement includes widening Lathrop Road to eight lanes at the interchange; and constructing loop on-ramps to eliminate left-turns onto I-5. This configuration is anticipated to provide LOS D or better operations with Cumulative Plus Project traffic volumes.

The Lathrop Road & I-5 SB and NB ramp intersections are part of the state highway system and are controlled by Caltrans. Local jurisdictions work with the San Joaquin Council of Governments (SJCOG) and Caltrans to prioritize projects within the San Joaquin County Regional Transportation Plan (RTP). The Lathrop Road & I-5 facility is included in the SJCOG RTP (Project SJ07-2004) as a full Interchange reconstruction with an environmental approval date listed at 2029 and scheduled to be open to traffic by 2035. The RTP estimate of the cost of the full interchange reconstruction is $39M.

Because the ramp intersections could operate at LOS E by year 2024 without or with the Project, Caltrans and SJCOG should consider interim improvements at this interchange in the near term to accommodate cumulative traffic growth by 2024 prior to the completion of the full interchange improvements in 2035. It is noted that the 2024 traffic growth estimate, based on the assumption of constant growth to 2040, may be high if economic conditions slow or delay development in the areas of the Central Lathrop Specific Plan.

The proposed Project is responsible for paying a regional traffic impact fee (RTIF) for their share of regional traffic. SJCOG uses RTIFs to fund projects after programming the projects into the RTP. The Project would therefore contribute a proportionate amount to the interchange improvements.

PROJECT SITE CIRCULATION

The Project site plan was evaluated in terms of access, circulation, and parking.

PROJECT ACCESS

The Project proposes to provide two right-in, right-out side-street stop-controlled access points along the east side of Airport Way. Each Project driveway along Airport Way is recommended to provide one westbound right turn only lane. Northbound access to the site is anticipated to be provided via a shared through/right lane from Airport Way. Traffic entering the site from the north or exiting the site to the south would be expected to proceed to the next signalized intersection on Airport Way and complete a U-turn. As noted in the traffic operations analysis, each side-street stop-controlled access point would provide acceptable traffic operations in Existing Plus Project and Cumulative Plus Project conditions. Future development of parcels to the north of the Project site may provide the opportunity for additional access points, however, Project ingress/egress in this study and analyses is only assumed via the two driveways documented in this report.

Sidewalks are recommended to be provided along both sides of all streets within the Project site consistent with the City's policies and design standards. In addition, it is recommended that the Project construct a portion of sidewalk along the east side of Airport Way adjacent to the Project site, connecting to the existing meandering sidewalk south of the Project site.

EMERGENCY ACCESS

The Project proposes to provide two right-in, right-out only access points along Airport Way and additional connections are anticipated north of the site when the vacant land north of the site is developed.

The proposed onsite street widths range between 50 and 60 feet and are proposed to accommodate a single vehicle travel lane in each direction and allow on-street parking. It is recommended that the detailed site plan be reviewed when provided to confirm that adequate turning space for larger emergency vehicles will be provided.

PARKING

The Manteca Municipal Code 17.52.050 includes the following requirements for single-family residential uses:

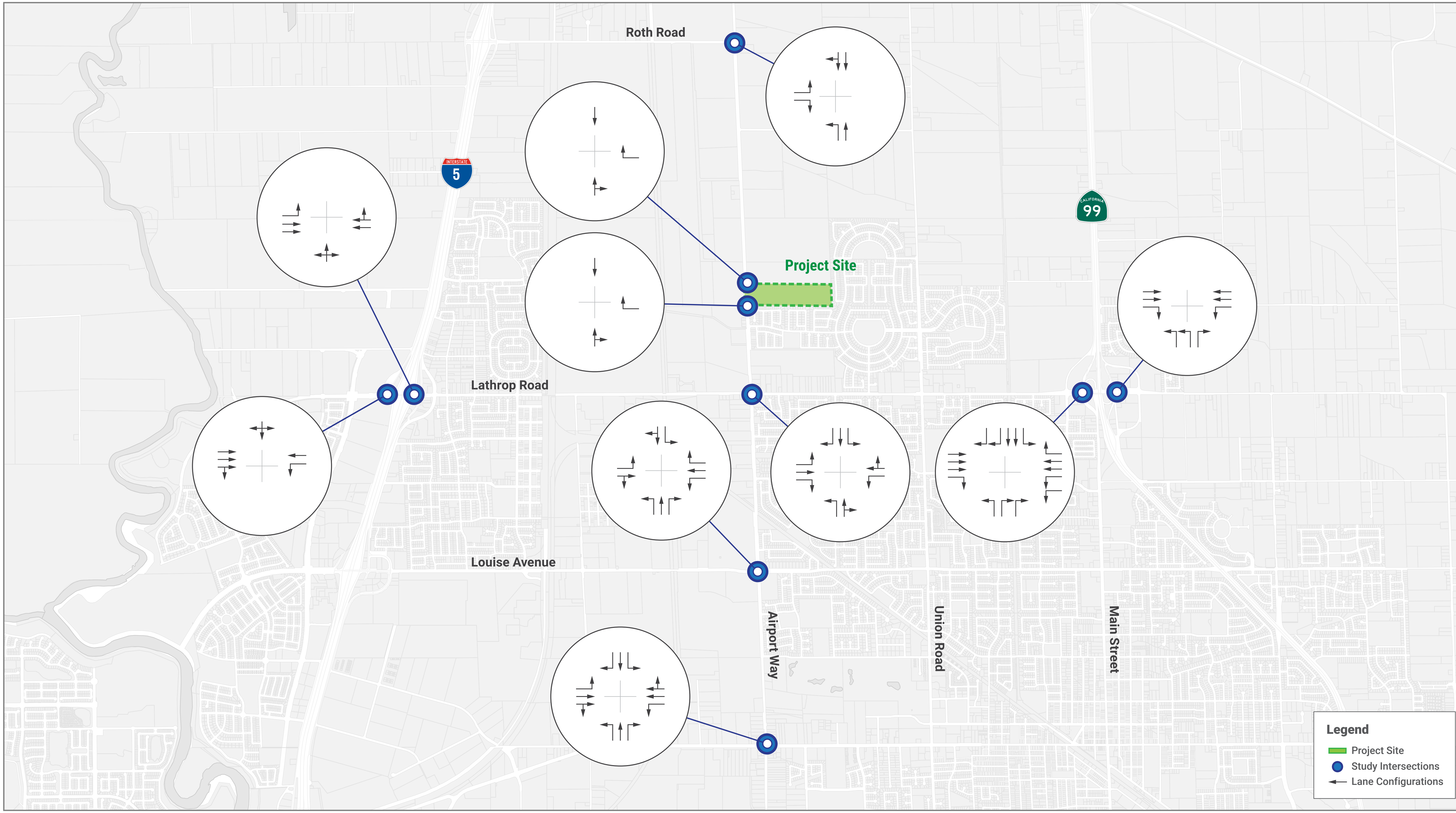
- Single-Family Dwelling Unit: 2 covered spaces/dwelling
- Small-Lot Single Family: 1 covered space/dwelling

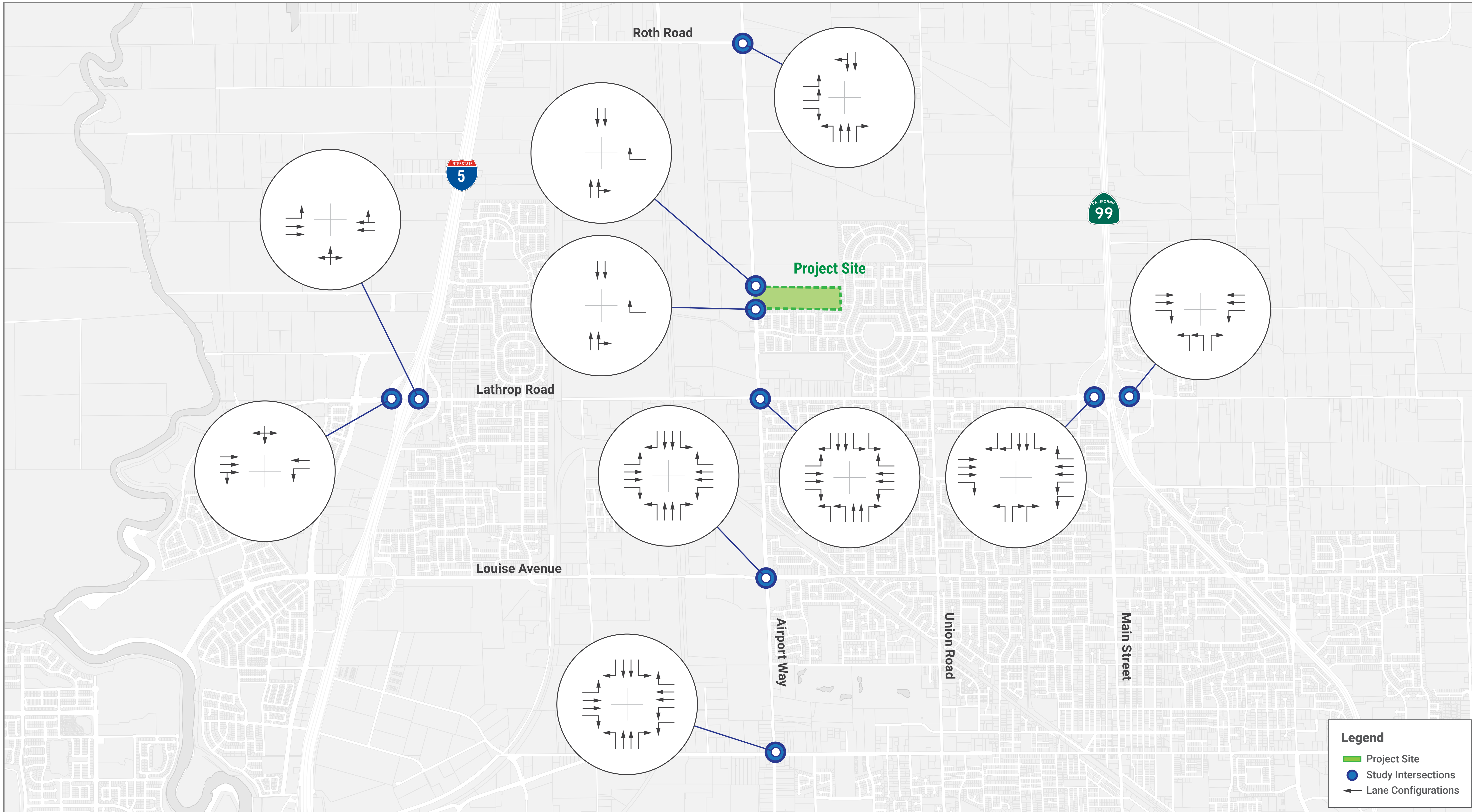
To satisfy Municipal Code requirements, it is recommended that parking be provided consistent with the Single-Family Dwelling Unit (2 covered spaces/dwelling) requirement. On-street parking is anticipated along the internal streets, consistent with similar nearby residential developments.

Section 6
Appendix

APPENDIX

EXISTING AND CUMULATIVE INTERSECTION GEOMETRIES


Roth Road
Lathrop Road
Louise Avenue
Project Site
Airport Way
Union Road
Main Street
5
99
Legend
Project Site
Study Intersections
Lane Configurations
Scale in Feet
0
1,200
North



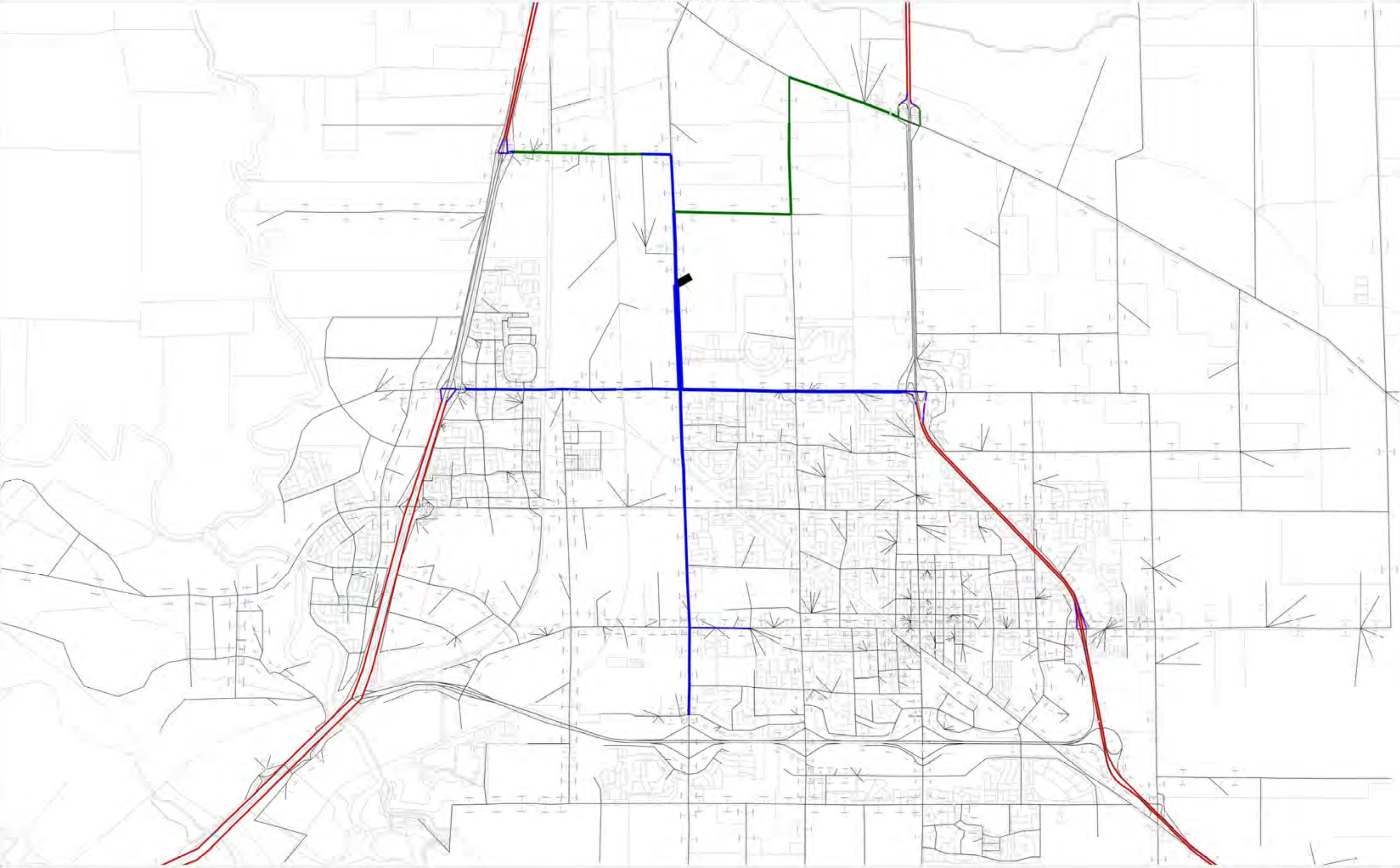
KITTELSON & ASSOCIATES

Manteca, CA. Kiper Indelicato Property | Traffic Impact Analysis

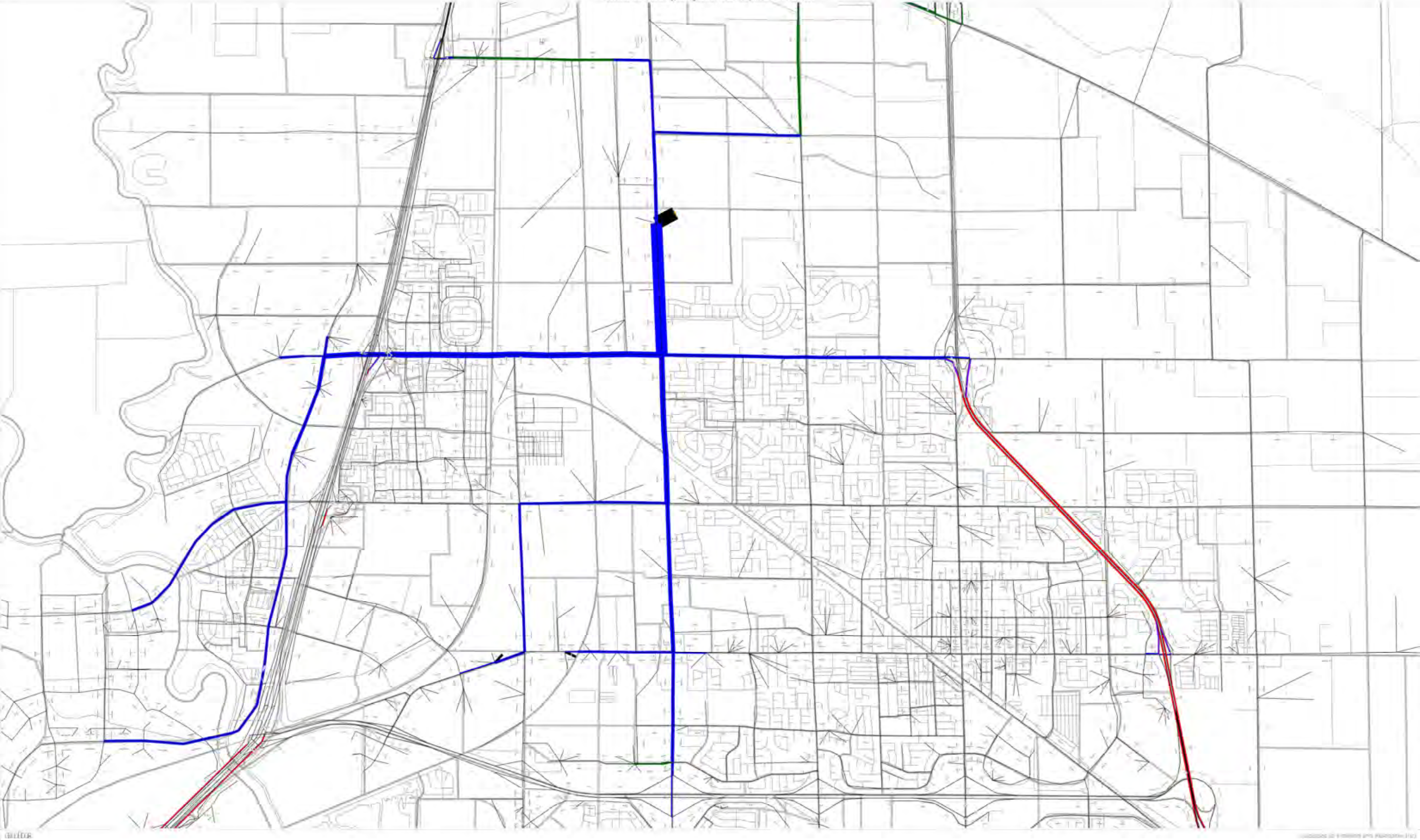
Cumulative Lane Configurations

TRAVEL DEMAND MODEL SELECT ZONE PLOTS

MANTECA TRAVEL MODEL
/019 with Kiper Indelicato Project
Select Link: Black=Daily, Orange = AM Peak Hour, Blue = PM Peak Hour



MANTECA TRAVEL MODEL
2040 with Kiper Indelicato Project
Select Link: Black=Daily, Orange = AM Peak Hour, Blue = PM Peak Hour

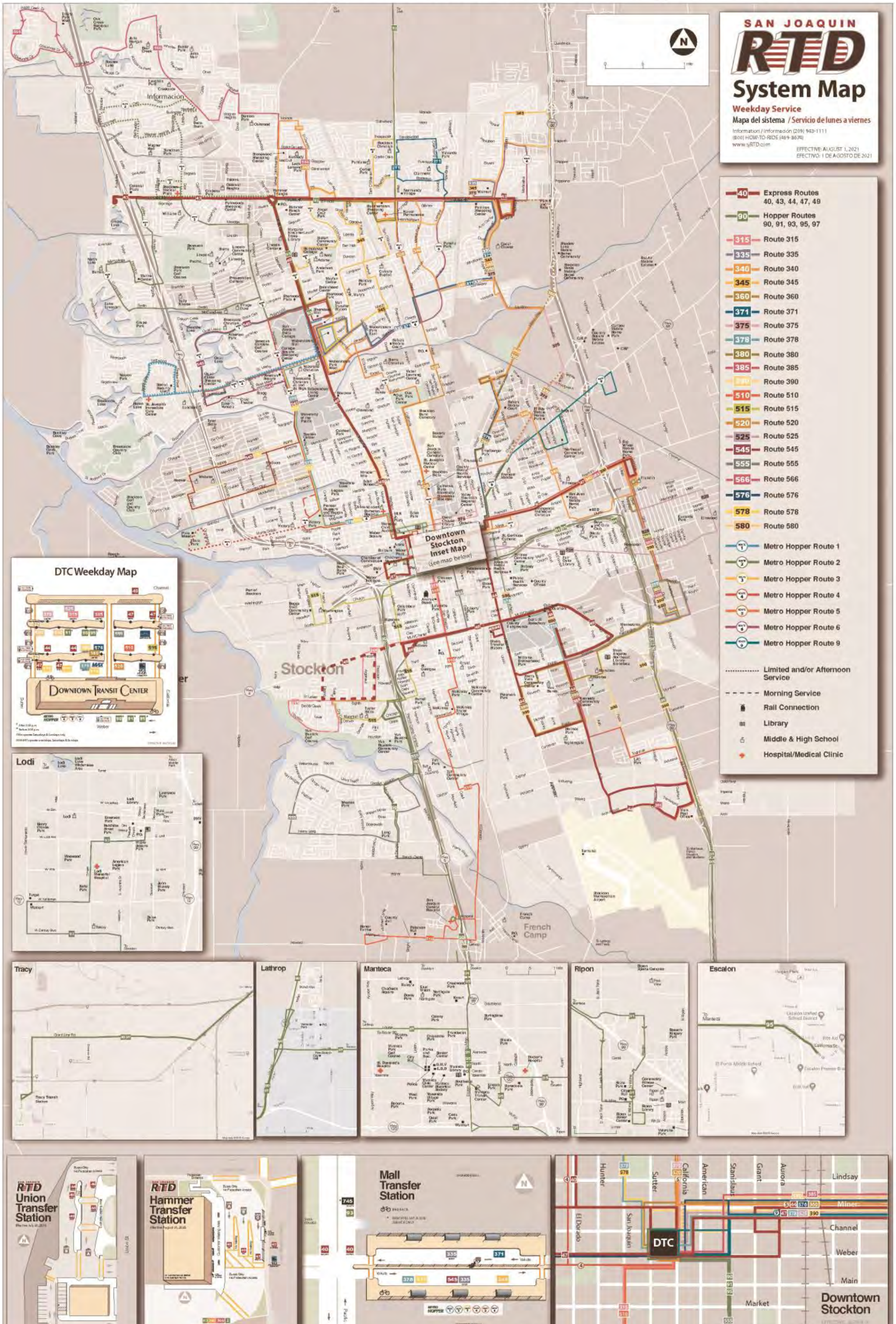


TRANSIT ROUTE AND STOP INFORMATION

SAN JOAQUIN RTD WEEKDAY SYSTEM MAP

EFFECTIVE: AUGUST 1, 2021

Mapa del sistema de lunes a viernes / efectivo: 1 de agosto de 2021



If information is needed in another language, contact (209) 943-1111 / Si necesita información en otro idioma, llame a (209) 943-1111 / ប្រសិនបើត្រូវការព័ត៌មានជាភាសាផ្សេង សូមទូរស័ព្ទមក (២០៩) ៩៤៣-១១១១ / 如果需要其他语言的信息，请联系 (209) 943-1111 / Yog cov ntaub ntawv xav tau ua lwm hom lus, hu rau (209) 943-1111 / Kung kailangan ang impormasyon sa ibang wika, makipag-ugnayansa (209) 943-1111 / Nếu quý vị cần thông tin bằng một ngôn ngữ khác, vui lòng gọi số, (209) 943-1111

manteca transit

Ride Guide

Guía de información

Effective January 20, 2020

Fixed Routes, Dial A-Ride & ADA Paratransit

209.456.8888

711

www.mantecatransit.com

How to Use This Guide

This guide provides everything you need to know to ride Manteca Transit bus routes. Here's how to use it:

1. Use the systemwide map to identify the route or routes that connect the places you wish to travel between.

2. The maps will show major destinations and timepoints along the route. The locations where transfers can be made will also be shown on the route map.

3. The timetables shows when the bus serves each bus stops along the route. The timepoints are shown on the top of the timetable and read from left to right.

4. Then read down from the timepoint where you will be boarding to see what times the bus will serve that stop. Continue to read right to see when it will reach your destination stop. Read to the down to see when the bus will operate.

5. The bus also serves many other stops in between the timepoints. Use the timepoint before your stop to estimate the time the bus will reach your stop and then be at the stop, five (5) minutes early as travel times may vary.

6. Please note that not all trips operate on Saturday. The timetable will indicate which trips run on Saturday.

7. Need assistance in planning your trip?
Download the Vamos Mobility app to plan transit travel around San Joaquin and Stanislaus counties. The app plans routes across all transit agencies and county boundaries. Transit services include scheduled bus and rail, Dial-A-Ride, and Van Go. Visit www.mantecatransit.com and use the trip planner powered by Google.Call (209) 456-8888.

Riding Manteca Transit

Service Area

Manteca Transit provides fixed route, demand response and Americans with Disabilities (ADA) complementary paratransit transit services throughout the City of Manteca and to/from the Lathrop/Manteca ACE Station.

Transit and Customer Service Hours

- Monday-Friday: 6 a.m. to 7 p.m.
- Saturday: 9 a.m. to 4 p.m.
- See timetables for details on exact times.

Customer service is available at the Manteca Transit Center, 220 Moffat Boulevard and via telephone, Monday through Saturday between 8 a.m. and 5 p.m. by calling (209) 456-8888.

Sunday and Holiday Schedule

No transit service is provided on Sundays and on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

Manteca Transit is Your Bus System

We hope to hear from you! We want your bus ride to be perfect every time. We welcome your comments, compliments, complaints or suggestions.

Visit us online: www.mantecatransit.com
Email: transitadmin@ci.manteca.ca.us
Call us: Transit Supervisor at (209) 456-8775
Fax us: (209) 923-8930
Write or visit us: Manteca Transit Center, 220 Moffat Boulevard, Manteca, CA 95336 (Routes 1, 2, 3, 4 and Dial-A-Ride comes to the facility).

This rider's guide and all transit Information is available in alternative and accessible languages and/or accessible formats. Please call (209) 456-8888 TDD & TTY users; 711 through the relay service, or email: transitadmin@ci.manteca.ca.us to request for these formats.

Reasonable Modification Policy:

It is the policy of the City of Manteca to provide reasonable modification to persons with disabilities when riding Manteca Transit services. For specific details on requesting reasonable modification, please call (209) 456-8888 TDD & TTY users; 711 through the relay service, or email: transitadmin@ci.manteca.ca.us.

Title VI of the Civil Rights Act of 1964:

It is the policy of the City of Manteca and its contractors to comply with Title VI of the Civil Rights Act of 1964. Transportation services will be provided without regard to race, color, national origin, age, gender or disability. For more information, or to file a complaint, contact the City of Manteca as defined above or the FTA Office of Civil Rights, Attention: Title VI Program. Coordinator, East Building – 5th Floor TCR, 1200 New Jersey Avenue SE, Washington, DC 20590. All matters will be investigated.

Enjoy the Ride!

Welcome Aboard!

Welcome aboard Manteca Transit, the City of Manteca's transit service! Manteca Transit provides three types of transit services for your convenience. These services include:

- Manteca Transit fixed route service that operates within the City of Manteca along four routes originating at Manteca Transit Center with connections to San Joaquin Regional Transit District (RTD).
- Manteca Transit Dial-A-Ride service that operates within the City of Manteca for seniors, persons with disabilities, Medicare card holders and the general public.
- Manteca Transit ADA Complementary Paratransit Service that operates within the City of Manteca within a ¾ mile radius of all routes for those with a disability that prevents the use of fixed route transit independently or access a bus stop independently.

We want to thank you for joining us and hope you Enjoy the Ride!

Fare Information: *(Fares effective November 1, 2006)*

Fixed Route Bus Fares -

Fare Category	Adult (18-61)	Youth (2-18 years old)	Seniors (62 & Older), Persons with Disabilities & Medicare Card Holders
One Way Fare	$ 1.00	$ .75	$ .50
10-Ride Pass	$ 9.00	$ 7.00	$ 4.50
(Valid for 10 rides with no expiration date. Passenger would need to request a transfer.)			
31 Day Pass	$ 35.00	$ 28.00	$ 28.00
(Valid for 31 consecutive days from for date of pass activation for unlimited use for the period.)			

Dial-A-Ride & ADA Complementary Paratransit Fares -

Manteca Transit Dial-A-Ride & ADA Complementary Paratransit Fares

- **For ADA Eligible Passengers**
- **Persons with Disabilities**
- **Seniors Age 62 Years Old and Older**
- **Medicare Card Holders**

One Way (Passenger & Companion)	$ 2.00
10-Ride Pass	$ 20.00
(Valid for 10 rides with no expiration date. Passenger would need to request a transfer.)	
31 Day Pass	$ 60.00
(Valid for 31 consecutive days from for date of pass activation for unlimited use for the period.)	

Fare Notes

- When using a Manteca Transit Fixed Route 31-Day Pass, no additional fare is required for Manteca Transit Dial-A-Ride service on Saturday or to/from the ACE Station.
- Children under 2 ride free. Up to two children per adult. Additional children pay discount fare.
- Employees of City of Manteca and Transit Division and transit operations contractor can ride free.
- One personal care attendant (PCA) ride free. All other companions pay appropriate fare.
- Acceptable IDs for youth, seniors (age 62 years old and older) and persons with disabilities fare passengers include: Manteca Transit Discount Fare ID Card, other transit agency discount cards, state issued ID cards, Medicare card with photo ID, school ID, birth certificate or a document with proof of age. To obtain a Manteca Transit Discount Fare ID Card, please call (209) 456-8888 for additional details.

Passes

Passes can be purchased:

- Mobile Ticketing App: EZHub available in the Vamos Mobility app. Passengers can access the Vamos app by downloading it on the Apple App Store or Google Play.
- In Person: Manteca Transit Center, 220 Moffat Blvd., Manteca or Panteca Parks and Recreation Department, 252 Magnolia St., Manteca (cask or check).
- On the Bus: cash only.

All passes are non-refundable, non-replaceable, and non-transferable.

Transfers

Main Transfer points:

1. Manteca Transit Center, 220 Moffat Blvd., Manteca.
2. Manteca City Hall near Cherry Lane and Center St. and Stadium Center Shopping Area.

Additionally, passengers can transfer between buses at locations where two or more Manteca Transit routes meet.

Transfers are free and valid for 2 hours and can only be used on another Manteca Transit Route. Passengers may also transfer from Dial-A-Ride to any Manteca Transit fixed route for free.

About Manteca Transit

Manteca Transit is a service of the City of Manteca, Public Works Department, Transit Division and transit services are provided under contract to National Express Transit Corporation of Lisle, Illinois.

How to Ride Manteca Transit

Bus Stops:

Manteca Transit buses only stop at signed bus stops. A complete bus stop list for each route is available on our website at www.mantecatransit.com.

Catching the Bus:

Be at the bus 5 minutes before the scheduled departure. Make sure the Bus Operator can see you. Check the headsign on the front of the bus to insure you board the correct route.

Paying your Fare:

Be ready to pay your fare or present your pass when you board. Exact fare only. Bus Operators cannot make change. Should you overpay, a change card will be issued for future use.

Exiting the Bus:

When you see your destination or transfer point, signal the bus operator, by pulling the cord near the window, or calling out "next stop". Please provide enough notice, so that the Bus Operator can stop safely. If you are not familiar with the area, ask for assistance.

Bicycles:

Bicycle racks are located on the front of all Manteca Transit fixed route buses. Racks are available on a first come-first served basis. Riders are responsible for loading and unloading bicycles, and use the racks at their own risk. Bicycles may be brought on board buses on a space available basis, however, passengers may be bumped due to passenger demands or use of the wheelchair space by a mobility device. Please let the Bus Operator know when you need to load or unload a bike. After you remove your bicycle, please lift the rack up and step away from the bus. The City of Manteca or its contractors assumes no responsibility for damage or loss to the bicycle.

Animals on Manteca Transit:

Service animals are welcome. Other non-service animals such as pets are not permitted.

Lost and Found:

If you leave an item on a Manteca Transit bus, please call (209) 456-8888 to see if it has been retrieved. The City of Manteca or its contractors are not responsible for lost or stolen items on board its vehicles. Items not retrieved within 30 days will be disposed of.

Travel Training:

In an effort to provide greater independence and increase mobility options for senior citizens and people with disabilities, travel training offers instruction on how to use fixed-route public transportation. Contact Access San Joaquin order to schedule your training and receive a free 10-ride pass upon completion. Access San Joaquin can be reached at 209-242-9965.

Security:

The City of Manteca values your safety when riding Manteca Transit buses. Cameras are equipped on all buses and at the Manteca Transit Center. If you see something unusual…say something to the Bus Operator, call 911 or contact Manteca Police at (209) 456-8101.

Bicycle Lockers:

Bicycle lockers are available for rent at the Manteca Transit Center. Call (209) 456-8775 or visit www.mantecatransit.com for more details.

Rules for Riding Manteca Transit Fixed Route & Dial-A-Ride

Please observe the following rules when riding buses or waiting at a bus stop, transit center or office:

- No smoking on buses, inside transit facilities or within 20 feet of the opening of a window or door at transit facilities.
- Shirts and shoes must be worn at all times.
- Eating is prohibited on all Manteca Transit buses. Drinking of nonalcoholic beverages is permitted from enclosed spill-proof containers.
- Consumption of alcoholic beverages is not permitted on public transit buses under Federal law.
- No standing in front of the white or yellow "standee" line, in doorways or stepwells while the bus is in motion.
- If you are sitting in one of the front seats, be prepared to give up your seat as a courtesy to seniors and persons with disabilities.
- No unnecessary conversation or interference with Bus Operator for safety reasons.
- Spitting, urinating or defecating on the bus or at bus stops is prohibited.
- No fighting, using vulgar or offensive language, pushing, shouting, or any behavior that disturbs or endangers other passengers.
- All audio devices require the use of headphones. Amplified music is not allowed on buses or at transit facilities.
- No flammable, hazardous materials or weapons shall be allowed on board the bus (except oxygen).
- No large object that cannot be held by the passenger or placed under seat. Passengers are allowed up to five shopping bags, luggage or packages.
- Bus Operators cannot enter a person's home.
- Strollers and shopping carts that can be folded and placed out of the aisles are allowed.
- Passengers must have a destination when riding Manteca Transit buses. After one round trip, passengers may be requested to leave the bus by the Bus Operator at the nearest transit center or major transfer point.
- All passengers must pay a fare when boarding Manteca Transit buses or they may be refused boarding.
- Posting of flyers, pamphlets or brochures on Manteca Transit buses or transit facilities are not allowed.
- Contact the City's Transit Division at (209) 456-8775 or email: transitadmin@ci.manteca.ca.us in regard to advertising on Manteca Transit buses or facilities or to rent the Manteca Transit Center.
- A person who commits an assault or battery upon a transit operator with a deadly weapon or presents the ability to use a deadly weapon is subject to a felony.
- The City of Manteca Police, security guard, authorized personnel or its transit operations contractor reserve the right to refuse service to passengers and/or suspend passengers who demonstrate disruptive and unsafe behavior or violate any of the rules and regulations presented above.
- Not paying the established fare or misuse of passes with the intent to evade fare payment is illegal.
- The above rules are enforced under the California Penal Code Section 640. Violation of the rules may result in the suspension of ride, a $250 fine and/or six months of community service.

Special Services for Persons with Disabilities and Seniors

Eligibility to Ride Manteca Transit Dial-A-Ride & ADA Paratransit

To be eligible to ride Manteca Transit Dial-A-Ride, you must be 62 years of age or older, have a disability that does not meet ADA definition, have a Medicare card or for priority service, have a disability that prevents you from riding Manteca Transit fixed route bus service or accessing a bus stop.

Individuals with a certified disability, seniors (age 62+) and Medicare participants must be certified to utilize the Dial-a-Ride services. Download the Dial-a-Ride application at http://www.acess-sj.com or call Access San Joaquin 209-242-9965. An Application can also be obtained by calling Manteca Transit at (209) 456-8888, downloading one from mantecatransit.com or visiting the Manteca Transit Center.

ADA Complementary Paratransit certification process is done by Access San Joaquin. Passengers receive an in-person functional assessment. Once ADA-certified, you will have ridership privileges within each jurisdiction in San Joaquin County based on that agency's ADA fare structure. Please call Access San Joaquin Mobility Eligibility Center (209) 943-1111 to schedule an in-person appointment or visit http://www.access-sj.com for more information

How Can I Get a Ride?

To make a reservation, call (209) 456-888 1 to 14 days in advance during reservation hours. before the time you need to be picked up. After hours, you can leave a telephone message. Please provide the following information:

- Your name, home address and telephone number.
- Address where you are to be picked up.
- Address where you want to go.
- When you want to be picked up or appointment time if applicable.
- How many will be traveling.
- If you need a return trip.
- If you have a special need.
- If you will be using a mobility device.
- If you will be traveling with a bicycle.

The dispatcher will give you an estimated time of pick up. Please be ready as **Manteca Transit Dial-A-Ride may arrive any time during the scheduled 30-minute window.** If you no longer need a ride, call Manteca Transit at least one hour in advance to cancel or you will be subject to a "No Show". Too many no-Shows within a limited duration will cause suspension from riding Manteca Transit for limited time period. Contact Manteca Transit for more specifics on the "No Show" policy.

Can I Get Regularly Scheduled Trips?

Passengers whom have a permanent weekly schedule, may request a permanent pick up time on a space available, first-come, first-served basis. Passengers must call in advance to cancel the scheduled trip(s), if needed.

Accessibility

All Manteca Transit vehicles are fully equipped with mobility aid ramp and a mobility aid securement area with space for two to four mobility aids. The Bus Operator will provide assistance with normal boarding or exiting, mobility device securement and operation of the ramp Bus Operators are required to secure all mobility aids before the bus can depart.

Passengers using a scooter may be asked to transfer to a seat on the bus. All mobility aids must be able to fit within the allocated space, have working brakes and cannot exceed the capacity of the ramp (with the passenger and mobility aid). If the mobility aid cannot fit the ramp platform, the passenger will not be able to ride. Mobility aids with leaking batteries or fluids will not be allowed to board.

All Manteca Transit fixed route buses can kneel by lowering the front platform for easier boarding for passengers with mobility limitations. Please let the Bus Operator know if you need to use the bus kneeling feature upon boarding or exiting. If necessary, Bus Operators for Dial-A-Ride can provide assistance to help seniors and persons with disabilities board or alight buses.

¡Bienvenido a bordo!

¡Bienvenido a Manteca Transit, el servicio de tránsito de la Ciudad de Manteca! Manteca Transit brinda tres tipos de servicios de tránsito para su conveniencia. Estos servicios incluyen:

- Servicio de ruta fija de Manteca Transit que opera dentro de la ciudad de Manteca a lo largo de cuatro rutas que se originan en el Centro de tránsito de Manteca con conexiones al Distrito de tránsito regional (RTD) de San Joaquín.
- Servicio Dial-A-Ride de Manteca Transit que opera dentro de la ciudad de Manteca para personas mayores, personas con discapacidades, titulares de tarjetas de Medicare y el público en general.
- Servicio de paratránsito complementario ADA de Manteca Transit que opera dentro de la ciudad de Manteca dentro de un radio de ¾ millas de todas las rutas para aquellas personas con discapacidad que impide el uso de tránsito de ruta fija de forma independiente o accede a una parada de autobús de forma independiente.

¡Queremos agradecerle por unirse a nosotros y esperamos que disfrute el viaje!

Pases

Los pases se pueden comprar:

- Aplicación de venta de entradas móvil: disponible en la aplicación Vamos Mobility. Los pasajeros pueden acceder al La aplicación Vamos descargándola de la App Store de Apple o Google Play.
- En persona: Manteca Transit Center, 220 Moffat Blvd., Departamento de Parques y Recreación de Manteca o Panteca, 252 Magnolia St., Manteca (barril o cheque).
- En el autobús: solo en efectivo.

Todos los pases son no reembolsables, no reemplazables ni transferibles.

Transbordes

Puntos de transferencia principales:

1. Centro de tránsito de Manteca, 220 Moffat Blvd., Manteca, Ayuntamiento de Manteca
2. Cherry Lane y Center St. y el área comercial Stadium Center.

Además, los pasajeros pueden hacer transbordos entre los autobuses en lugares donde se encuentran dos o más rutas de Manteca Transit.

Los traslados son gratuitos y válidos por 2 horas y solo se pueden utilizar en otra ruta de tránsito de Manteca. Los pasajeros también pueden trasladarse de Dial-A-Ride a cualquier ruta fija de Manteca Transit gratis.

Cómo conducir el tránsito de Manteca

Paradas de autobus:

Los autobuses de Manteca Transit solo paran en las paradas de autobús firmadas. Una lista completa de paradas de autobús para cada ruta está disponible en nuestro sitio web en www.mantecatransit.com.

Coger el autobús:

Estar en el autobús 5 minutos antes de la salida programada. Asegúrese de que el operador del autobús pueda verlo. Verifique el letrero en la parte delantera del autobús para asegurarse de abordar la ruta correcta.

Pagando su tarifa:

Prepárese para pagar su tarifa o presente su pase cuando aborde. Tarifa exacta solamente. Los operadores de autobuses no pueden hacer cambios. Si paga en exceso, se emitirá una tarjeta de cambio para uso futuro.

Saliendo del autobús:

Cuando vea su destino o punto de transferencia, señale al operador del autobús, tirando del cable cerca de la ventana o llamando "próxima parada". Por favor, avise con suficiente antelación para que el operador del autobús pueda detenerse de manera segura. Si no está familiarizado con el área, solicite asistencia.

Bicicletas:

Los estantes para bicicletas se encuentran en la parte delantera de todos los autobuses de ruta fija de Manteca Transit. Los bastidores están disponibles por orden de llegada. Los pasajeros son responsables de cargar y descargar bicicletas, y usan los estantes bajo su propio riesgo. Se pueden llevar bicicletas a bordo de los autobuses según el espacio disponible, sin embargo, los pasajeros pueden ser golpeados debido a las demandas de los pasajeros o al uso del espacio para sillas de ruedas por un dispositivo de movilidad. Informe al operador del autobús cuando necesite cargar o descargar una bicicleta. Después de quitar su bicicleta, levante el estante y aléjese del autobús. La Ciudad de Manteca o sus contratistas no asumen ninguna responsabilidad por daños o pérdidas a la bicicleta.

Animales en tránsito de Manteca:

Los animales de servicio son bienvenidos. No se permiten otros animales que no sean de servicio, como mascotas.

Objetos perdidos:

Si deja un artículo en un autobús de Manteca Transit, llame al (209) 456-8888 para ver si se ha recuperado. La Ciudad de Manteca o sus contratistas no son responsables por artículos perdidos o robados a bordo de sus vehículos. Los artículos no recuperados dentro de los 30 días serán eliminados.

Entrenamiento de viaje:

En un esfuerzo por proporcionar una mayor independencia y aumentar las opciones de movilidad para las personas mayores y las personas con discapacidad, la capacitación en viajes ofrece instrucciones sobre cómo usar el transporte público de ruta fija. Comuníquese con la orden de Access San Joaquin para programar su capacitación y recibir un pase de 10 viajes gratis al finalizar. Se puede llegar a Access San Joaquin al 209-242-9965.

Seguridad:

La ciudad de Manteca valora su seguridad cuando viaja en los autobuses de Manteca Transit. Las cámaras están equipadas en todos los autobuses y en el Centro de tránsito de Manteca. Si ve algo inusual ... dígale algo al operador del autobús, llame al 911 o comuníquese con la policía de Manteca al (209) 456-8101.

Casilleros de bicicletas:

Los armarios para bicicletas están disponibles para alquilar en el Centro de Tránsito Manteca. Llame al (209) 456-8775 o visite www.mantecatransit.com para más detalles.

Servicios especiales para personas con discapacidades y personas mayores

Elegibilidad para viajar Manteca Transit Dial-A-Ride y ADA Paratransit

Para ser elegible para viajar en Manteca Transit Dial-A-Ride, debe tener 62 años de edad o más, tener una discapacidad que no cumpla con la definición ADA, tener una tarjeta de Medicare o servicio prioritario, tener una discapacidad que le impida viajar. Servicio de autobús de ruta fija Manteca Transit o acceso a una parada de autobús. Las personas con una discapacidad certificada, las personas mayores (mayores de 62 años) y los participantes de Medicare deben estar certificados para utilizar los servicios Dial-a-Ride. Descargue la aplicación Dial-a-Ride en http://www.acess-sj.com o llame a Access San Joaquin (209) 943-1111. También se puede obtener una solicitud llamando a Manteca Transit al (209) 456-8888, descargando una de mantecatransit.com o visitando el Centro de tránsito de Manteca. El proceso de certificación complementaria de paratránsito de la ADA lo realiza Access San Joaquin. Los pasajeros reciben una evaluación funcional en persona. Una vez que obtenga la certificación ADA, tendrá privilegios de pasajero dentro de cada jurisdicción en el condado de San Joaquin según la estructura de tarifas ADA de esa agencia. Llame al Centro de elegibilidad de movilidad Access San Joaquin (209) 943-1111 para programar una cita en persona o visite http://www.access-sj.com para obtener más información.

¿Cómo puedo obtener un paseo?

Para hacer una reserva, llame al (209) 456-8888 con 1 a 14 días de anticipación durante el horario de reserva. antes de la hora en que debe ser recogido. Después de horas, puede dejar un mensaje telefónico. Por favor provea la siguiente información:

- Su nombre, domicilio y número de teléfono.
- Dirección donde debe ser recogido.
- Dirección a donde quieres ir.
- Cuando desee que lo recojan o la hora de la cita, si corresponde.
- ¿Cuántos viajarán?
- Si necesita un viaje de regreso.
- Si tiene una necesidad especial.
- Si va a utilizar un dispositivo de movilidad.
- Si va a viajar con una bicicleta.

El despachador le dará un tiempo estimado de recogida. Esté preparado ya que **Manteca Transit Dial-A-Ride puede llegar en cualquier momento durante el plazo programado de 30 minutos**. Si ya no necesita transporte, llame a Manteca Transit con al menos una hora de anticipación para cancelar o estará sujeto a un "No Show". Demasiadas ausencias dentro de una duración limitada causarán la suspensión de viajar en Manteca Transit por un período de tiempo limitado. Comuníquese con Manteca Transit para obtener más detalles sobre la política de "No presentación".

¿Puedo obtener viajes programados regularmente?

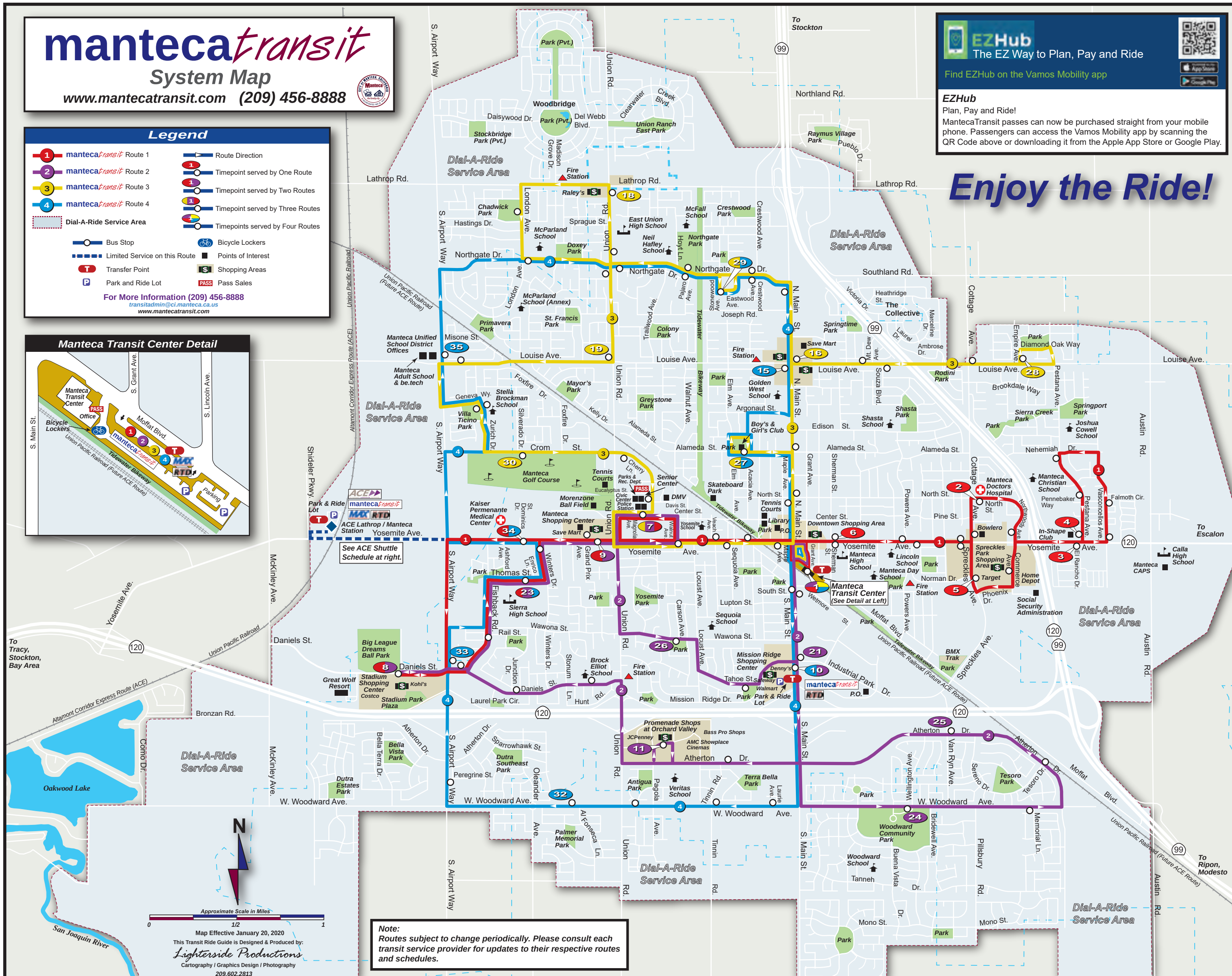
Los pasajeros que tienen un horario semanal permanente, pueden solicitar un horario de recogida permanente en un espacio disponible, por orden de llegada. Los pasajeros deben llamar con anticipación para cancelar los viajes programados, si es necesario.

Accesibilidad

Todos los vehículos de Manteca Transit están completamente equipados con una rampa de ayuda de movilidad y un área de seguridad de ayuda de movilidad con espacio para dos o cuatro ayudas de movilidad. El operador del autobús proporcionará asistencia con el abordaje o la salida normal, la seguridad del dispositivo de movilidad y la operación de la rampa. Los operadores del autobús deben asegurar todas las ayudas de movilidad antes de que el autobús pueda partir. A los pasajeros que usan un scooter se les puede pedir que se transfieran a un asiento en el autobús. Todas las ayudas de movilidad deben poder caber dentro del espacio asignado, tener frenos de trabajo y no pueden exceder la capacidad de la rampa (con el pasajero y la ayuda de movilidad). Si la ayuda de movilidad no puede caber en la plataforma de la rampa, el pasajero no podrá viajar. Las ayudas de movilidad con fugas de baterías o fluidos no podrán abordar. Todos los autobuses de ruta fija Manteca Transit pueden arrodillarse bajando la plataforma delantera para facilitar el abordaje de los pasajeros con limitaciones de movilidad. Informe al operador del autobús si necesita usar la función de arrodillamiento del autobús al subir o bajar. Si es necesario, los operadores de autobuses para Dial-A-Ride pueden proporcionar asistencia para ayudar a las personas mayores y las personas con discapacidad a abordar o bajar de los autobuses.

Título VI de la Ley de Derechos Civiles de 1964:

La política de la Ciudad de Manteca y sus contratistas es cumplir con el Título VI de la Ley de Derechos Civiles de 1964. Los servicios de transporte se proporcionarán sin distinción de raza, color, nacionalidad, edad, sexo o discapacidad. Para obtener más información o presentar una queja, comuníquese con la Ciudad de Manteca como se define anteriormente o con la Oficina de Derechos Civiles del TLC, Atención: Programa Título VI. Coordinador, East Building - 5th Floor TCR, 1200 New Jersey Avenue SE, Washington, DC 20590. Todos los asuntos serán investigados.



mantecatransit & nextbus

Real Time Information is here!

You can now find out where your bus is and when it will arrive at your bus stop on your computer, mobile device (with web access), and by phone using the Interactive Voice Response (IVR) by calling (209) 665-3901. The system uses NextBus software and the Global Positioning System (GPS) tracking satellites combined with Manteca Transit bus schedule information to provide accurate arrival information for all bus stops in our fixed route bus system.

Real Time Bus Tracker: www.nextbus.com/manteca-transit. Select Agency - manteca transit

Connections to Other Transportation Services

Contact the following providers listed below for transportation options outside the City of Manteca:

- **Dibs**: 1-800-52-SHARE – www.dibsmyway.com.
Ridesharing and vanpooling information for San Joaquin County.
- **San Joaquin Regional Transit District (RTD):** 1-800-HOW-TO-RIDE – www.sjRTD.com.
Operates County Hopper, Commuter and specialized services to/from Manteca to other areas of San Joaquin County, as well as Alameda and Santa Clara counties.
- **Altamont Corridor Express (ACE):** 1-800-411-RAIL – www.acerail.com.
Operates commuter rail service between Stockton and San Jose. Station is located at: 17800 Shideler Parkway, Lathrop, CA 95330. ACE is also a part of the Amtrak San Joaquins Thruway network. Visit www.amtrak.com or call 1-800-USA-RAIL for more details.
- **Modesto Area Express (MAX):** (209) 521-1274 – www.modestoareaexpress.com.
Operates express bus service between Modesto and Lathrop/Manteca ACE Station and the Manteca Transit Center, Monday-Friday during commuter hours.

mantecatransit

Dial-A-Ride & ADA Paratransit Services Monday-Saturday

Manteca Transit ADA Complementary Paratransit service is a origin to destination transportation service for individuals who are ADA-Certified and are unable to use some or all of the fixed route bus services. Manteca Transit ADA Complementary Paratransit services provides comparable sservice to the regular fixed route system in terms of trips schedules during the same times and within three-quarters of a mile of the fixed route service.

Manteca Transit Dial-A-Ride service operates within the City of Manteca for seniors, persons with disabilities, and Medicare cardholders.

Monday through Friday Service Hours

Priority service for ADA certified, first come, first served basis for Dial-A-Ride riders from 6 a.m. to 7 p.m. (last reservations at 5 p.m.)

Saturday Service Hours

Dial-A-Ride Demand Response Services and Paratransit service operates during the same days and hours as the regular fixed route service. Priority Service for ADA certified, first come, first served basis for Dial-A-Ride riders from 9 a.m. to 4 p.m.

Please call at least 2 hours in advance up to 14 days in advance for a reservation. If you no longer need service, please cancel you trip as soon as possible, but no less than 1 day in advance by calling (209) 456-8888.

Connections to RTD County Hopper for route deviation trips outside of Manteca is possible for those whom have Paratranist certification.

mantecatransit SHUTTLE TO ACE

Morning Shuttle to ACE Station Schedule

Shuttle to ACE Train #	Leave Transit Center (1)	Arrive - Lathrop / Manteca ACE Station	*ACE Trains Depart to South Bay Area*	Depart - Lathrop / Manteca ACE Station	Arrive Transit Center (1)
5	6:40	6:55	6:59	6:59	7:14
7	7:23	7:38	7:51	7:39	7:54

Afternoon Shuttle to ACE Station Schedule

Shuttle to ACE Train #	Leave Transit Center (1)	Arrive - Lathrop / Manteca ACE Station	*ACE Trains Arrives from South Bay Area*	Depart - Lathrop / Manteca ACE Station	Arrive Transit Center (1)
4	**5:05**	**5:20**	**5:23**	**5:23**	**5:43**
6	**6:05**	**6:20**	**6:23**	**6:23**	**6:43**
8	**7:05**	**7:20**	**7:23**	**7:23**	**7:43**

Avoid parking at the ACE Station!
Take the ACE Shuttle from the Manteca Transit Center to the ACE Station.

The Shuttle meets trains #5 & #7 in the morning and trains #4, #6 & #8 in the evening.

Only $1.00 to ride each way with discounts for youth, seniors and persons with disabilities.

Please consult the ACE Schedule for times of arrivals and departures from; Tracy, Vasco Rd., Livermore, Pleasanton, Fremont, Great America and Santa Clara.

mantecatransit — Route 1 (Ruta 1) Weekday & Saturday Schedule
(Horario de días de Semana y Sábados)

Transit Center (1)	North St. at Cottage Ave. (2)	Yosemite Ave. at El Rancho Dr. (3)	Pestana Ave. at Yosemie Ave. (4)	Spreckles Ave. at Norman Dr. (5)	Yosemite Ave. at Sherman St. (6)	Center St. at Magnolia Ave. (7)	Yosemite Ave. at St. Dominics Dr. (34)	Daniels St. at (Stadium Center) (8)	Thomas St. at Enrico Ln. (23)	Yosemite Ave. at Union Rd. (9)	Transit Center (1)
6:00	6:06	6:09	6:14	6:19	6:23	6:29	6:32	6:39	6:42	6:46	6:54
7:00	7:06	7:09	7:14	7:19	7:23	7:29	7:32	7:39	7:42	7:46	7:54
8:00	8:06	8:09	8:14	8:19	8:23	8:29	8:32	8:39	8:42	8:46	8:54
9:00	9:06	9:09	9:14	9:19	9:23	9:29	9:32	9:39	9:42	9:46	9:54
10:00	10:06	10:09	10:14	10:19	10:23	10:29	10:32	10:39	10:42	10:46	10:54
11:00	11:06	11:09	11:14	11:19	11:23	11:29	11:32	11:39	11:42	11:46	11:54
12:00	**12:06**	**12:09**	**12:14**	**12:19**	**12:23**	**12:29**	**12:32**	**12:39**	**12:42**	**12:46**	**12:54**
1:00	**1:06**	**1:09**	**1:14**	**1:19**	**1:23**	**1:29**	**1:32**	**1:39**	**1:42**	**1:46**	**1:54**
2:00	**2:06**	**2:09**	**2:14**	**2:19**	**2:23**	**2:29**	**2:32**	**2:39**	**2:42**	**2:46**	**2:54**
3:00	**3:06**	**3:09**	**3:14**	**3:19**	**3:23**	**3:29**	**3:32**	**3:39**	**3:42**	**3:46**	**3:54**
4:00	**4:06**	**4:09**	**4:14**	**4:19**	**4:23**	**4:29**	**4:32**	**4:39**	**4:42**	**4:46**	**4:54**
5:00	**5:06**	**5:09**	**5:14**	**5:19**	**5:23**	**5:29**	**5:32**	**5:39**	**5:42**	**5:46**	**5:54**
6:00	**6:06**	**6:09**	**6:14**	**6:19**	**6:23**	**6:29**	**6:32**	**6:39**	**6:42**	**6:46**	**6:54**

Saturday Service is Shaded in Gray *(El Servicio del Sábado está Sombreado en Gris)*

Times shown in BOLD are P.M. (Los tiempos mostrados en color mas oscuro son P.M.)

mantecatransit — Route 2 (Ruta 2) Weekday & Saturday Schedule
(Horario de días de Semana y Sábados)

Transit Center (1)	Main St. at Mission Ridge Dr. (10)	Woodward Ave. at Wellington Ave. (24)	Atherton Dr. at Van Ryn Ave. (25)	Promenade Shops at Orchard Valley (11)	Daniels St. at (Staduim Center) (8)	Thomas St. at Enrico Ln. (23)	Yosemite Ave. at Union Rd. (9)	Center St. at Magnolia Ave. (7)	Wawona St. at Carson Ave. (26)	Main St. at Industrial Park Dr. (21)	Transit Center (1)
6:00	6:03	6:06	6:11	6:15	6:26	6:29	6:32	6:34	6:38	6:41	6:45
7:00	7:03	7:06	7:11	7:15	7:26	7:29	7:32	7:34	7:38	7:41	7:45
8:00	8:03	8:06	8:11	8:15	8:26	8:29	8:32	8:34	8:38	8:41	8:45
9:00	9:03	9:06	9:11	9:15	9:26	9:29	9:32	9:34	9:38	9:41	9:45
10:00	10:03	10:06	10:11	10:15	10:26	10:29	10:32	10:34	10:38	10:41	10:45
11:00	11:03	11:06	11:11	11:15	11:26	11:29	11:32	11:34	11:38	11:41	11:45
12:00	**12:03**	**12:06**	**12:11**	**12:15**	**12:26**	**12:29**	**12:32**	**12:34**	**12:38**	**12:41**	**12:45**
1:00	**1:03**	**1:06**	**1:11**	**1:15**	**1:26**	**1:29**	**1:32**	**1:34**	**1:38**	**1:41**	**1:45**
2:00	**2:03**	**2:06**	**2:11**	**2:15**	**2:26**	**2:29**	**2:32**	**2:34**	**2:38**	**2:41**	**2:45**
3:00	**3:03**	**3:06**	**3:11**	**3:15**	**3:26**	**3:29**	**3:32**	**3:34**	**3:38**	**3:41**	**3:45**
4:00	**4:03**	**4:06**	**4:11**	**4:15**	**4:26**	**4:29**	**4:32**	**4:34**	**4:38**	**4:41**	**4:45**
5:00	**5:03**	**5:06**	**5:11**	**5:15**	**5:26**	**5:29**	**5:32**	**5:34**	**5:38**	**5:41**	**5:45**
6:00	**6:03**	**6:06**	**6:11**	**6:15**	**6:26**	**6:29**	**6:32**	**6:34**	**6:38**	**6:41**	**6:45**

Saturday Service is Shaded in Gray *(El Servicio del Sábado está Sombreado en Gris)*

Times shown in BOLD are P.M. (Los tiempos mostrados en color mas oscuro son P.M.)

mantecatransit — Route 3 (Ruta 3) Weekday & Saturday Schedule
(Horario de días de Semana y Sábados)

Transit Center (1)	Alameda St. at Acacia Ave. (27)	Empire Ave. at Loiuse Ave. (28)	Main St. at Louise Ave. (16)	Eastwood Ave. at Stonewood Ave. (29)	Union Rd. at Lathrop Rd. (18)	Union Rd. at Louise Ave. (19)	Crom St. at Silverado St. (30)	Center St. at Magnolia Ave. (7)	Transit Center (1)
6:00	6:06	6:13	6:18	6:21	6:25	6:31	6:37	6:39	6:48
7:00	7:06	7:13	7:18	7:21	7:25	7:31	7:37	7:39	7:48
8:00	8:06	8:13	8:18	8:21	8:25	8:31	8:37	8:39	8:48
9:00	9:06	9:13	9:18	9:21	9:25	9:31	9:37	9:39	9:48
10:00	10:06	10:13	10:18	10:21	10:25	10:31	10:37	10:39	10:48
11:00	11:06	11:13	11:18	11:21	11:25	11:31	11:37	11:39	11:48
12:00	**12:06**	**12:13**	**12:18**	**12:21**	**12:25**	**12:31**	**12:37**	**12:39**	**12:48**
1:00	**1:06**	**1:13**	**1:18**	**1:21**	**1:25**	**1:31**	**1:37**	**1:39**	**1:48**
2:00	**2:06**	**2:13**	**2:18**	**2:21**	**2:25**	**2:31**	**2:37**	**2:39**	**2:48**
3:00	**3:06**	**3:13**	**3:18**	**3:21**	**3:25**	**3:31**	**3:37**	**3:39**	**3:48**
4:00	**4:06**	**4:13**	**4:18**	**4:21**	**4:25**	**4:31**	**4:37**	**4:39**	**4:48**
5:00	**5:06**	**5:13**	**5:18**	**5:21**	**5:25**	**5:31**	**5:37**	**5:39**	**5:48**
6:00	**6:06**	**6:13**	**6:18**	**6:21**	**6:25**	**6:31**	**6:37**	**6:39**	**6:48**

Saturday Service is Shaded in Gray *(El Servicio del Sábado está Sombreado en Gris)*

Times shown in BOLD are P.M. (Los tiempos mostrados en color mas oscuro son P.M.)

mantecatransit — Route 4 (Ruta 4) Weekday Only Schedule
(Sólo días de Semana)

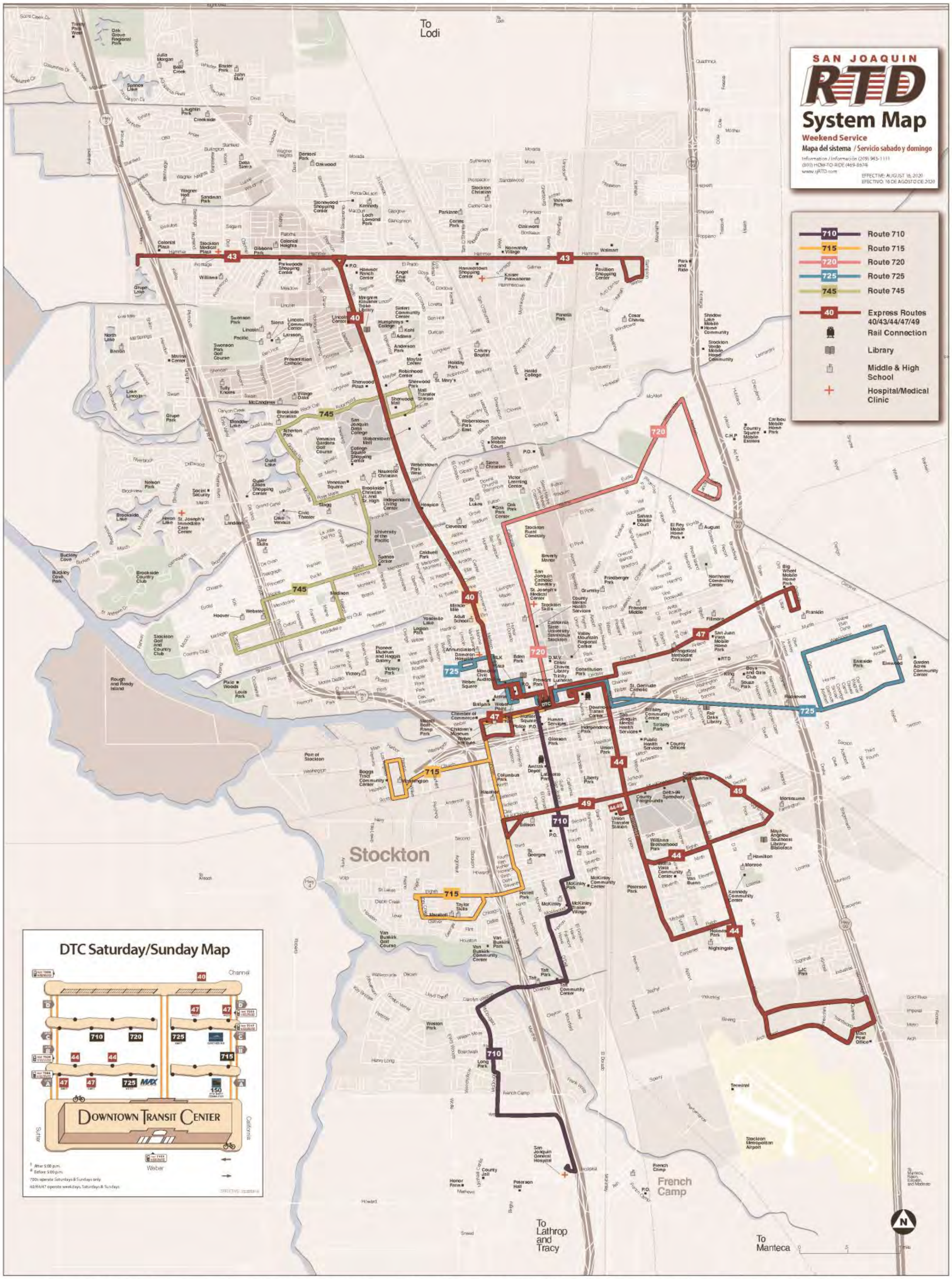
Transit Center (1)	Main St. at Mission Ridge Dr. (10)	Woodward Ave. at Al Fonseca Ln. (32)	Airport Wy' at Daniels St. (33)	Thomas St. at Enrico Ln. (23)	Yosemite Ave. at St. Dominics Dr. (34)	Airport Wy. at Louise Ave. (35)	Eastwood Ave. at Stonewood Ave. (29)	Main St. at Louise Ave. (15)	Alameda St. at Acacia Ave. (27)	Transit Center (1)
6:00	6:03	6:09	6:12	6:18	6:21	6:29	6:36	6:40	6:42	6:52
7:00	7:03	7:09	7:12	7:18	7:21	7:29	7:36	7:40	7:42	7:52
8:00	8:03	8:09	8:12	8:18	8:21	8:29	8:36	8:40	8:42	8:52
9:00	9:03	9:09	9:12	9:18	9:21	9:29	9:36	9:40	9:42	9:52
10:00	10:03	10:09	10:12	10:18	10:21	10:29	10:36	10:40	10:42	10:52
11:00	11:03	11:09	11:12	11:18	11:21	11:29	11:36	11:40	11:42	11:52
12:00	**12:03**	**12:09**	**12:12**	**12:18**	**12:21**	**12:29**	**12:36**	**12:40**	**12:42**	**12:52**
1:00	**1:03**	**1:09**	**1:12**	**1:18**	**1:21**	**1:29**	**1:36**	**1:40**	**1:42**	**1:52**
2:00	**2:03**	**2:09**	**2:12**	**2:18**	**2:21**	**2:29**	**2:36**	**2:40**	**2:42**	**2:52**
3:00	**3:03**	**3:09**	**3:12**	**3:18**	**3:21**	**3:29**	**3:36**	**3:40**	**3:42**	**3:52**
4:00	**4:03**	**4:09**	**4:12**	**4:18**	**4:21**	**4:29**	**4:36**	**4:40**	**4:42**	**4:52**
5:00	**5:03**	**5:09**	**5:12**	**5:18**	**5:21**	**5:29**	**5:36**	**5:40**	**5:42**	**5:52**
6:00	**6:03**	**6:09**	**6:12**	**6:18**	**6:21**	**6:29**	**6:36**	**6:40**	**6:42**	**6:52**

Times shown in BOLD are P.M. (Los tiempos mostrados en color mas oscuro son P.M.)

SAN JOAQUIN RTD WEEKEND SYSTEM MAP

EFFECTIVE: AUGUST 16, 2020

Mapa del sistema de sábado y domingo / efectivo: 16 de agosto de 2020

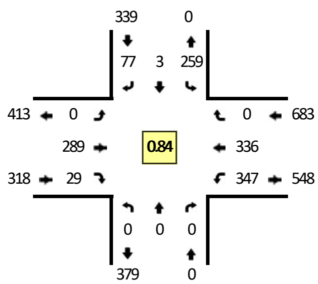


If information is needed in another language, contact (209) 943-1111 / Si necesita información en otro idioma, llame a (209) 943-1111 / ប្រសិនបើត្រូវការព័ត៌មានជាភាសាផ្សេង សូមទំនាក់ទំនង (២០៩) ៩៤៣-១១១១ / 如果需要其他语言的信息，请联系 (209) 943-1111 / Yog cov ntaub ntawv xav tau ua lwm hom lus, hu rau (209) 943-1111 / Kung kailangan ang impormasyon sa ibang wika, makipag-ugnayansa (209) 943-1111 / Nếu quý vị cần thông tin bằng một ngôn ngữ khác, vui lòng gọi số, (209) 943-1111

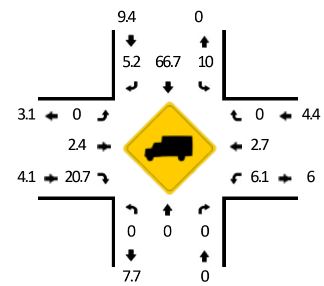
EXISTING TRAFFIC COUNT DATA

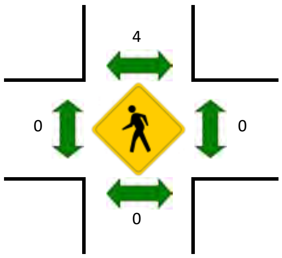
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

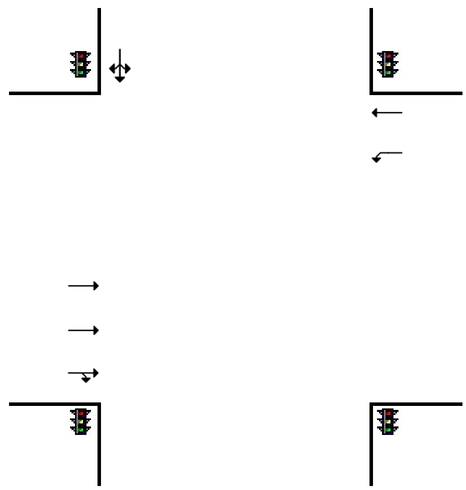
LOCATION: 3. I-5 SB Ramps -- W Lathrop Rd | **QC JOB #:** 15637105
CITY/STATE: Lathrop, CA | **DATE:** Wed, Dec 8 2021

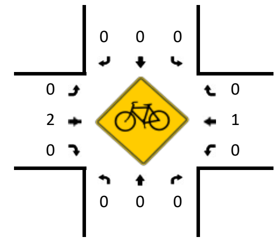


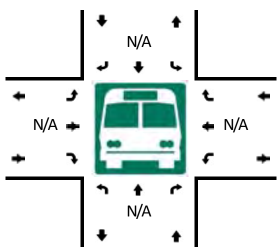
Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 7:35 AM -- 7:50 AM

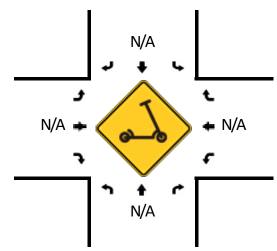












5-Min Count Period Beginning At	3. I-5 SB Ramps (Northbound)				3. I-5 SB Ramps (Southbound)				W Lathrop Rd (Eastbound)				W Lathrop Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	21	0	14	0	0	12	2	0	17	7	0	0	73	
7:05 AM	0	0	0	0	24	2	9	0	0	7	3	0	41	10	0	0	96	
7:10 AM	0	0	0	0	16	1	2	0	0	8	0	0	17	11	0	0	55	
7:15 AM	0	0	0	0	21	0	6	0	0	8	1	0	36	12	0	0	84	
7:20 AM	0	0	0	0	37	0	9	0	0	11	0	0	27	11	0	0	95	
7:25 AM	0	0	0	0	23	0	8	0	0	19	1	0	29	19	0	0	99	
7:30 AM	0	0	0	0	23	0	5	0	0	16	4	0	27	15	0	0	90	
7:35 AM	0	0	0	0	37	0	7	0	0	19	3	0	34	22	0	0	122	
7:40 AM	0	0	0	0	26	0	11	0	0	32	4	0	37	30	0	0	140	
7:45 AM	0	0	0	0	20	1	11	0	0	27	5	0	43	29	0	0	136	
7:50 AM	0	0	0	0	15	0	5	0	0	26	3	0	29	33	0	0	111	
7:55 AM	0	0	0	0	20	1	8	0	0	18	2	0	37	22	0	0	108	1209
8:00 AM	0	0	0	0	15	0	6	0	0	23	1	0	36	45	0	0	126	1262
8:05 AM	0	0	0	0	22	0	4	0	0	23	4	0	32	26	0	0	111	1277
8:10 AM	0	0	0	0	22	0	7	0	0	27	1	0	22	18	0	0	97	1319
8:15 AM	0	0	0	0	21	0	8	0	0	21	0	0	21	28	0	0	99	1334
8:20 AM	0	0	0	0	20	0	3	0	0	25	1	0	16	23	0	0	88	1327
8:25 AM	0	0	0	0	21	0	5	0	0	22	3	0	13	35	0	0	99	1327
8:30 AM	0	0	0	0	20	1	2	0	0	26	2	0	27	25	0	0	103	1340
8:35 AM	0	0	0	0	29	0	3	0	0	30	2	0	22	30	0	0	116	1334
8:40 AM	0	0	0	0	16	0	4	0	0	21	5	0	26	25	0	0	97	1291
8:45 AM	0	0	0	0	15	1	6	0	0	17	2	0	21	27	0	0	89	1244
8:50 AM	0	0	0	0	16	0	4	0	0	9	4	0	25	19	0	0	77	1210
8:55 AM	0	0	0	0	14	2	4	0	0	17	1	0	17	18	0	0	73	1175

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	332	4	116	0	0	312	48	0	456	324	0	0	1592
Heavy Trucks	0	0	0		24	4	8		0	4	4		20	0	0		64
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	8	0		0	4	0		12
Scooters																	

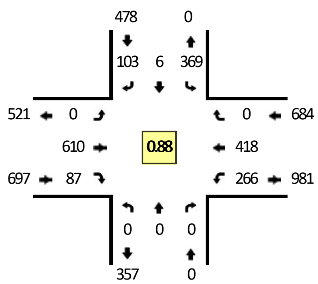
Comments:

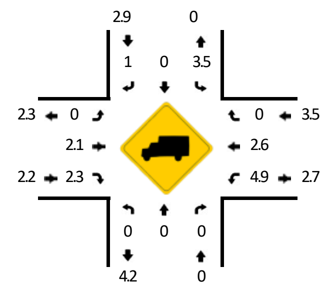
Report generated on 12/20/2021 4:06 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

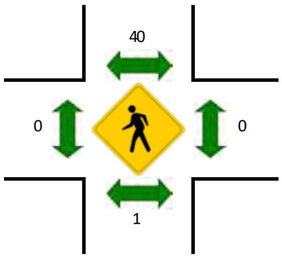
LOCATION: 3. I-5 SB Ramps -- W Lathrop Rd
CITY/STATE: Lathrop, CA

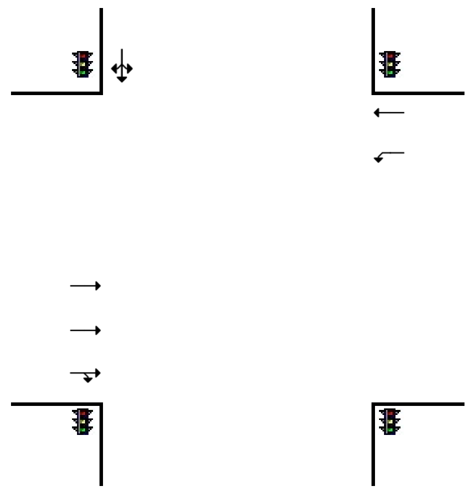
QC JOB #: 15637106
DATE: Wed, Dec 8 2021

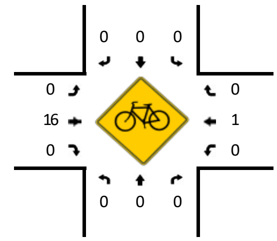
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:05 PM -- 4:20 PM

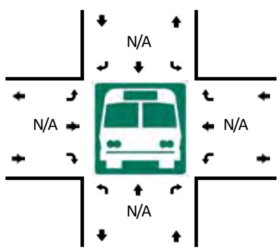


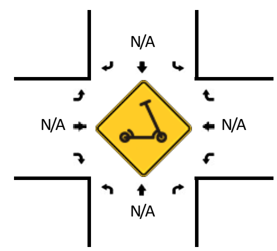












5-Min Count Period Beginning At	3. I-5 SB Ramps (Northbound)				3. I-5 SB Ramps (Southbound)				W Lathrop Rd (Eastbound)				W Lathrop Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	31	0	9	0	0	36	4	0	27	65	0	0	172	
4:05 PM	0	0	0	0	27	0	12	0	0	70	3	0	32	37	0	0	181	
4:10 PM	0	0	0	0	22	0	12	0	0	72	5	0	17	33	0	0	161	
4:15 PM	0	0	0	0	23	1	11	0	0	84	16	0	11	38	0	0	184	
4:20 PM	0	0	0	0	27	2	7	0	0	76	10	0	19	37	0	0	178	
4:25 PM	0	0	0	0	23	1	7	0	0	50	17	0	17	26	0	1	142	
4:30 PM	0	0	0	0	34	0	10	0	0	51	8	0	24	34	0	0	161	
4:35 PM	0	0	0	0	30	1	6	0	0	36	8	0	32	38	0	0	151	
4:40 PM	0	0	0	0	37	1	7	0	0	43	6	0	20	14	0	0	128	
4:45 PM	0	0	0	0	34	0	5	0	0	42	3	0	16	27	0	1	128	
4:50 PM	0	0	0	0	41	0	5	0	0	26	5	0	28	34	0	0	139	
4:55 PM	0	0	0	0	40	0	12	0	0	24	2	0	21	35	0	0	134	1859
5:00 PM	0	0	0	0	25	0	2	0	0	30	3	0	22	26	0	0	108	1795
5:05 PM	0	0	0	0	31	0	7	0	0	38	8	0	25	27	0	0	136	1750
5:10 PM	0	0	0	0	36	0	10	0	0	21	4	0	9	23	0	0	103	1692
5:15 PM	0	0	0	0	46	1	9	0	0	37	5	0	22	23	0	0	143	1651
5:20 PM	0	0	0	0	26	1	12	0	0	27	6	0	19	36	0	0	127	1600
5:25 PM	0	0	0	0	38	0	11	0	0	36	3	0	29	28	0	0	145	1603
5:30 PM	0	0	0	0	34	0	13	0	0	33	4	0	21	21	0	1	127	1569
5:35 PM	0	0	0	0	31	1	12	0	0	28	3	0	17	37	0	0	129	1547
5:40 PM	0	0	0	0	35	0	9	0	0	21	4	0	15	30	0	0	114	1533
5:45 PM	0	0	0	0	27	0	12	0	0	33	1	0	11	39	0	0	123	1528
5:50 PM	0	0	0	0	31	0	5	0	0	32	3	0	21	42	0	0	134	1523
5:55 PM	0	0	0	0	34	0	10	0	0	26	3	0	25	17	0	0	115	1504

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	288	4	140	0	0	904	96	0	240	432	0	0	2104
Heavy Trucks	0	0	0		12	0	0		0	4	4		16	0	0		36
Buses																	
Pedestrians		4				100				0				0			104
Bicycles	0	0	0		0	0	0		0	52	0		0	0	0		52
Scooters																	

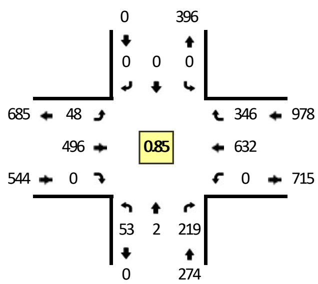
Comments:

Report generated on 12/20/2021 4:06 PM

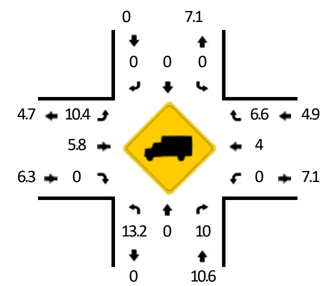
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

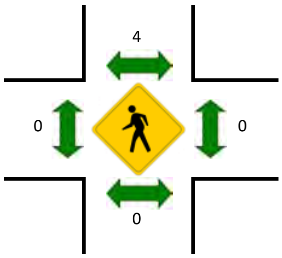
Type of peak hour being reported: Intersection Peak — Method for determining peak hour: Total Entering Volume

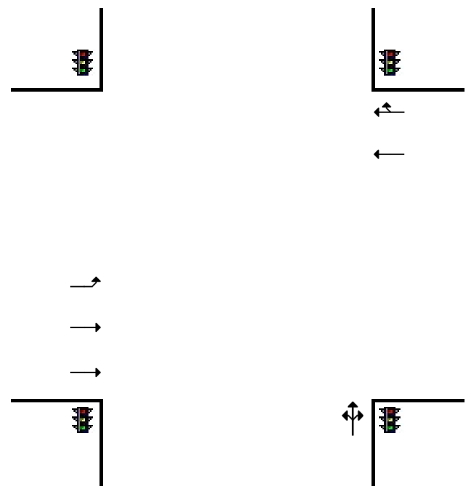
LOCATION: 2. I-5 NB Ramps -- W Lathrop Rd — **QC JOB #:** 15637103
CITY/STATE: Lathrop, CA — **DATE:** Wed, Dec 8 2021

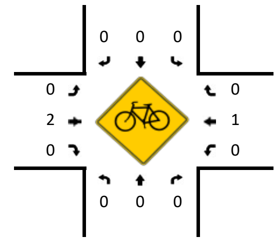


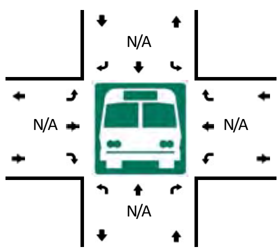
Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 7:35 AM -- 7:50 AM

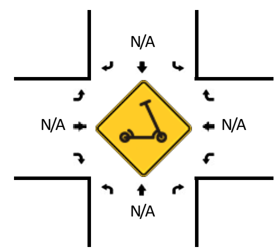












5-Min Count Period Beginning At	2. I-5 NB Ramps (Northbound)				2. I-5 NB Ramps (Southbound)				W Lathrop Rd (Eastbound)				W Lathrop Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	4	1	10	0	0	0	0	0	4	29	0	0	0	27	17	0	92	
7:05 AM	2	0	15	0	0	0	0	0	3	28	0	0	0	42	22	0	112	
7:10 AM	2	0	17	0	0	0	0	0	2	22	0	0	0	34	25	0	102	
7:15 AM	3	0	17	0	0	0	0	0	2	26	0	0	0	35	26	0	109	
7:20 AM	3	0	18	0	0	0	0	0	4	46	0	0	0	42	21	0	134	
7:25 AM	5	1	6	0	0	0	0	0	3	35	0	0	0	42	24	0	116	
7:30 AM	2	1	19	0	0	0	0	0	4	37	0	0	0	34	28	0	125	
7:35 AM	6	0	25	0	0	0	0	0	3	51	0	0	0	59	41	0	185	
7:40 AM	2	0	18	0	0	0	0	0	3	55	0	0	0	61	34	0	173	
7:45 AM	3	0	26	0	0	0	0	0	5	43	0	0	0	57	35	0	169	
7:50 AM	1	0	23	0	0	0	0	0	2	39	0	0	0	64	35	0	164	
7:55 AM	4	0	15	0	0	0	0	0	8	28	0	0	0	61	32	0	148	1629
8:00 AM	2	0	13	0	0	0	0	0	1	39	0	0	0	70	30	0	155	1692
8:05 AM	4	0	11	0	0	0	0	0	2	44	0	0	0	63	24	0	148	1728
8:10 AM	3	0	20	0	0	0	0	0	10	38	0	0	0	29	30	0	130	1756
8:15 AM	4	1	19	0	0	0	0	0	3	36	0	0	0	39	22	0	124	1771
8:20 AM	4	0	8	0	0	0	0	0	4	38	0	0	0	37	27	0	118	1755
8:25 AM	8	0	18	0	0	0	0	0	5	43	0	0	0	45	17	0	136	1775
8:30 AM	12	1	23	0	0	0	0	0	2	42	0	0	0	47	19	0	146	1796
8:35 AM	5	1	14	0	0	0	0	0	5	57	0	0	0	34	13	0	129	1740
8:40 AM	4	5	15	0	0	0	0	0	3	32	0	0	0	55	18	0	132	1699
8:45 AM	6	0	25	0	0	0	0	0	1	29	0	0	0	37	19	0	117	1647
8:50 AM	1	0	21	0	0	0	0	0	1	28	0	0	0	37	12	0	100	1583
8:55 AM	3	0	18	0	0	0	0	0	3	27	0	0	0	35	12	0	98	1533

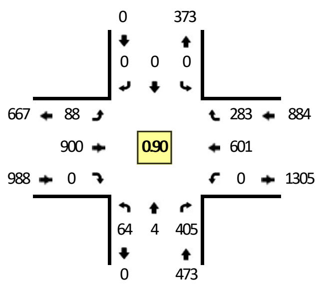
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	44	0	276	0	0	0	0	0	44	596	0	0	0	708	440	0	2108
Heavy Trucks	0	0	36		0	0	0		0	28	0		0	20	32		116
Buses																	
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	8	0		0	4	0		12
Scooters																	

Comments:

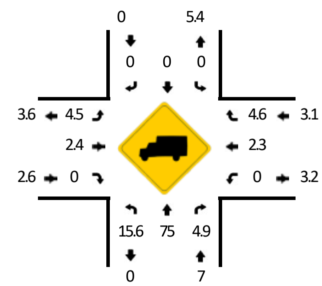
Report generated on 12/20/2021 4:06 PM — SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

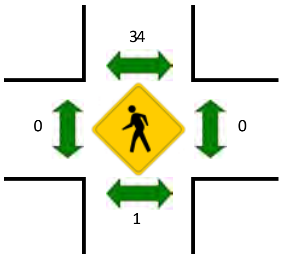
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

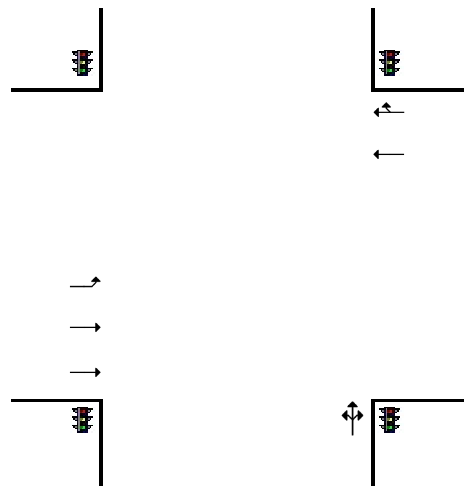
LOCATION: 2. I-5 NB Ramps -- W Lathrop Rd | **QC JOB #:** 15637104
CITY/STATE: Lathrop, CA | **DATE:** Wed, Dec 8 2021

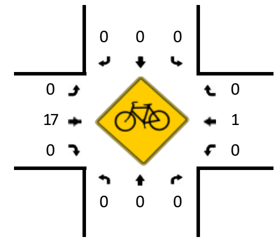


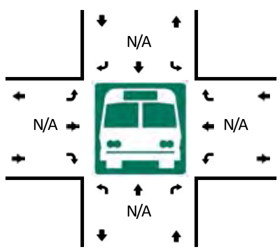
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

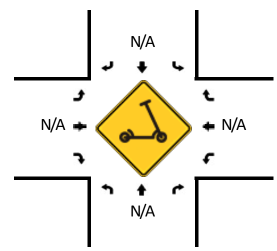












5-Min Count Period Beginning At	2. I-5 NB Ramps (Northbound)				2. I-5 NB Ramps (Southbound)				W Lathrop Rd (Eastbound)				W Lathrop Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	10	1	39	0	0	0	0	0	8	60	0	0	0	68	20	0	206	
4:05 PM	5	0	38	0	0	0	0	0	6	92	0	0	0	60	34	0	235	
4:10 PM	7	1	31	0	0	0	0	0	4	86	0	0	0	52	26	0	207	
4:15 PM	4	0	23	0	0	0	0	0	4	82	0	0	0	37	21	0	171	
4:20 PM	3	0	29	0	0	0	0	0	13	84	0	0	0	47	16	0	192	
4:25 PM	1	0	37	0	0	0	0	0	5	85	0	0	0	57	21	0	206	
4:30 PM	7	1	30	0	0	0	0	0	12	87	0	1	0	55	22	0	215	
4:35 PM	6	0	40	0	0	0	0	0	14	52	0	0	0	50	29	0	191	
4:40 PM	2	0	28	0	0	0	0	0	8	77	0	0	0	35	29	0	179	
4:45 PM	7	0	46	0	0	0	0	0	7	67	0	0	0	42	29	0	198	
4:50 PM	10	0	35	0	0	0	0	0	3	55	0	0	0	47	16	0	166	
4:55 PM	2	1	29	0	0	0	0	0	2	73	0	1	0	51	20	0	179	2345
5:00 PM	3	0	42	0	0	0	0	0	6	51	0	0	0	42	22	0	166	2305
5:05 PM	2	0	34	0	0	0	0	0	8	58	0	0	0	55	22	0	179	2249
5:10 PM	5	0	44	0	0	0	0	0	2	50	0	0	0	38	17	0	156	2198
5:15 PM	0	0	30	0	0	0	0	0	4	81	0	0	0	44	26	0	185	2212
5:20 PM	4	0	48	0	0	0	0	0	4	53	0	0	0	45	22	0	176	2196
5:25 PM	3	0	39	0	0	0	0	0	5	70	0	0	0	60	28	0	205	2195
5:30 PM	1	0	40	0	0	0	0	0	7	58	0	0	0	34	23	0	163	2143
5:35 PM	3	1	32	0	0	0	0	0	5	59	0	0	0	52	23	0	175	2127
5:40 PM	4	0	36	0	0	0	0	0	4	51	0	0	0	45	13	0	153	2101
5:45 PM	5	0	36	0	0	0	0	0	6	55	0	0	0	51	19	0	172	2075
5:50 PM	3	0	51	0	0	0	0	0	2	60	0	0	0	45	12	0	173	2082
5:55 PM	4	0	41	0	0	0	0	0	6	54	0	0	0	39	21	0	165	2068

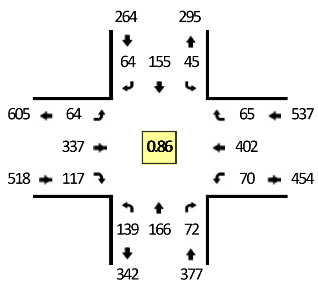
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	88	8	432	0	0	0	0	0	72	952	0	0	0	720	320	0	2592
Heavy Trucks	8	4	16		0	0	0		0	24	0		0	24	12		88
Buses																	
Pedestrians		0				36				0				0			36
Bicycles	0	0	0		0	0	0		0	44	0		0	0	0		44
Scooters																	

Comments:

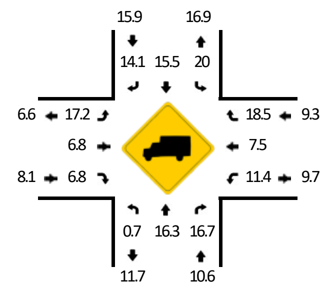
Report generated on 12/20/2021 4:06 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

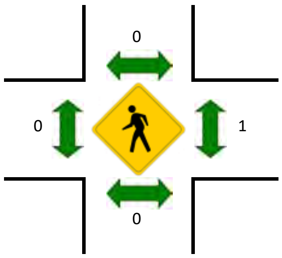
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

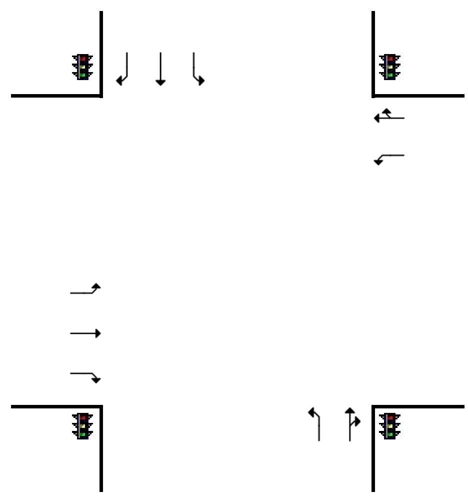
LOCATION: 1. S Airport Wy -- W Lathrop Rd | **QC JOB #:** 15637101
CITY/STATE: Manteca, CA | **DATE:** Wed, Dec 8 2021

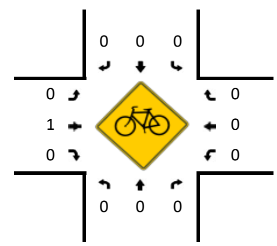


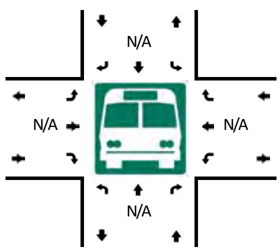
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:35 AM -- 7:50 AM

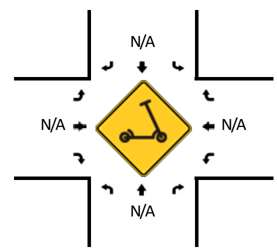












5-Min Count Period Beginning At	1. S Airport Wy (Northbound)				1. S Airport Wy (Southbound)				W Lathrop Rd (Eastbound)				W Lathrop Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	11	9	4	0	3	14	11	0	4	15	2	0	3	27	6	0	109	
7:05 AM	9	7	5	0	0	8	10	0	1	26	7	0	3	38	6	0	120	
7:10 AM	5	6	2	0	3	5	8	0	6	30	9	0	6	28	6	0	114	
7:15 AM	10	9	1	0	6	6	11	0	3	18	4	0	3	30	7	0	108	
7:20 AM	11	12	1	0	2	14	4	0	10	24	7	0	3	26	1	0	115	
7:25 AM	13	13	2	0	3	12	8	0	8	30	8	0	5	28	6	0	136	
7:30 AM	15	13	4	0	1	14	4	0	6	28	8	0	11	38	5	0	147	
7:35 AM	21	7	6	0	5	14	8	0	5	28	10	0	7	43	4	0	158	
7:40 AM	12	15	6	0	2	18	7	0	6	36	13	0	9	36	4	0	164	
7:45 AM	11	16	8	0	2	22	5	0	9	32	18	0	3	40	5	0	171	
7:50 AM	18	17	13	0	2	19	7	0	6	23	6	0	5	32	5	0	153	
7:55 AM	16	16	2	0	1	8	5	0	6	35	11	0	10	37	5	0	152	1647
8:00 AM	12	16	1	0	5	7	5	0	3	26	10	0	8	44	10	0	147	1685
8:05 AM	9	14	7	0	3	12	2	0	6	25	12	0	3	27	6	0	126	1691
8:10 AM	7	18	6	0	7	10	4	0	5	22	10	0	2	22	5	0	118	1695
8:15 AM	7	12	6	0	5	3	4	0	6	31	6	0	1	19	3	0	103	1690
8:20 AM	6	10	8	0	5	13	5	0	0	27	9	0	2	27	3	0	115	1690
8:25 AM	5	12	5	0	7	15	8	0	6	24	4	0	9	37	10	0	142	1696
8:30 AM	6	12	4	0	5	10	5	0	3	16	5	0	7	26	1	0	100	1649
8:35 AM	6	4	4	0	3	9	6	0	7	22	3	0	6	21	4	0	95	1586
8:40 AM	11	6	3	0	8	15	7	0	2	27	4	0	4	25	6	0	118	1540
8:45 AM	8	8	6	0	3	14	4	0	3	28	6	0	6	24	6	0	116	1485
8:50 AM	4	5	2	0	3	11	5	0	5	36	4	0	4	39	5	0	123	1455
8:55 AM	9	13	6	0	3	10	4	0	1	23	9	0	4	12	4	0	98	1401

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	176	152	80	0	36	216	80	0	80	384	164	0	76	476	52	0	1972
Heavy Trucks	0	28	16		8	24	8		4	16	4		4	24	8		144
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 12/20/2021 4:06 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: 1. S Airport Wy -- W Lathrop Rd

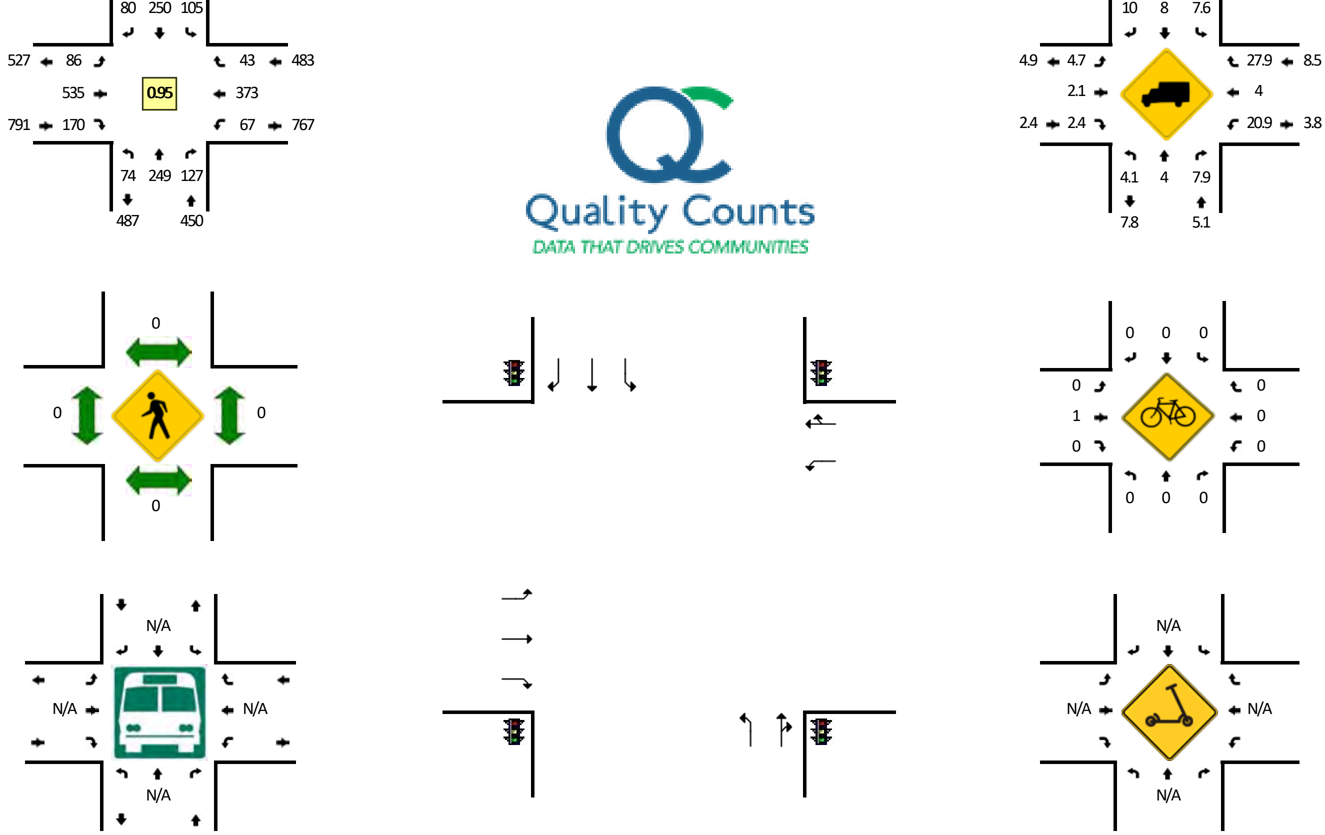
QC JOB #: 15637102

CITY/STATE: Manteca, CA

DATE: Wed, Dec 8 2021

Peak-Hour: 4:00 PM -- 5:00 PM

Peak 15-Min: 4:20 PM -- 4:35 PM



5-Min Count Period Beginning At	1. S Airport Wy (Northbound) Left	Thru	Right	U	1. S Airport Wy (Southbound) Left	Thru	Right	U	W Lathrop Rd (Eastbound) Left	Thru	Right	U	W Lathrop Rd (Westbound) Left	Thru	Right	U	Total	Hourly Totals
4:00 PM	5	16	11	0	9	18	8	0	6	46	16	0	3	21	1	0	160	
4:05 PM	4	19	5	0	8	24	8	0	12	49	12	0	6	34	3	0	184	
4:10 PM	3	23	14	0	1	25	7	0	8	45	7	0	4	33	4	0	174	
4:15 PM	10	17	11	0	10	14	9	0	7	45	19	0	5	33	6	0	186	
4:20 PM	11	28	7	0	15	21	9	0	3	36	15	0	10	37	5	0	197	
4:25 PM	4	22	9	0	13	24	8	0	7	35	11	0	7	34	5	0	179	
4:30 PM	6	19	15	0	7	23	8	0	5	54	18	0	2	29	4	0	190	
4:35 PM	5	22	9	0	7	17	3	0	8	44	15	0	5	24	4	0	163	
4:40 PM	10	24	12	0	9	20	3	0	9	40	18	0	5	32	3	0	185	
4:45 PM	7	17	10	0	10	28	6	0	6	47	11	0	9	33	2	0	186	
4:50 PM	0	17	4	0	8	13	4	0	9	51	16	0	8	35	5	0	170	
4:55 PM	9	25	20	0	8	23	7	0	6	43	12	0	3	28	1	0	185	2159
5:00 PM	5	17	9	0	6	19	5	0	9	25	19	0	5	29	5	0	153	2152
5:05 PM	9	8	3	0	7	17	10	0	5	45	24	0	4	29	6	0	167	2135
5:10 PM	10	32	4	0	7	24	8	0	6	37	11	0	8	22	3	0	172	2133
5:15 PM	5	24	7	0	7	19	6	0	5	43	8	0	3	33	6	0	166	2113
5:20 PM	14	17	10	0	12	21	4	0	7	41	13	0	4	25	3	0	171	2087
5:25 PM	8	12	1	0	3	12	5	0	3	57	8	0	8	44	4	0	165	2073
5:30 PM	6	12	13	0	8	24	9	0	12	40	3	0	4	17	4	0	152	2035
5:35 PM	12	12	10	0	13	14	11	0	6	51	15	0	4	34	5	0	187	2059
5:40 PM	2	8	2	0	8	22	6	0	6	44	9	0	4	32	8	0	151	2025
5:45 PM	6	14	10	0	10	15	8	0	3	30	14	0	9	36	10	0	165	2004
5:50 PM	4	12	9	0	4	7	4	0	4	36	13	0	6	29	9	0	137	1971
5:55 PM	7	16	3	0	6	17	4	0	1	35	7	0	6	25	5	0	132	1918

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	84	276	124	0	140	272	100	0	60	500	176	0	76	400	56	0	2264
Heavy Trucks	4	12	8		4	8	16		4	4	12		16	20	8		116
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

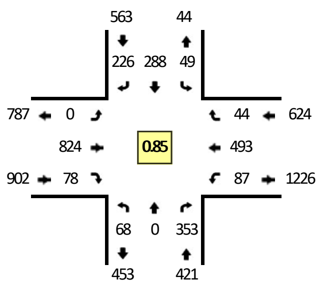
Report generated on 12/20/2021 4:06 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

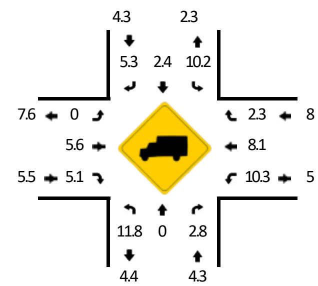
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

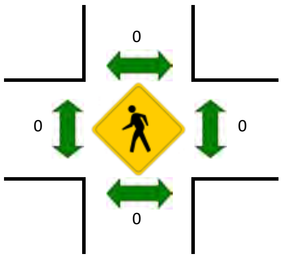
LOCATION: 5. SR 99 SB Ramps/N Main St -- W Lathrop Rd | **QC JOB #:** 15637109

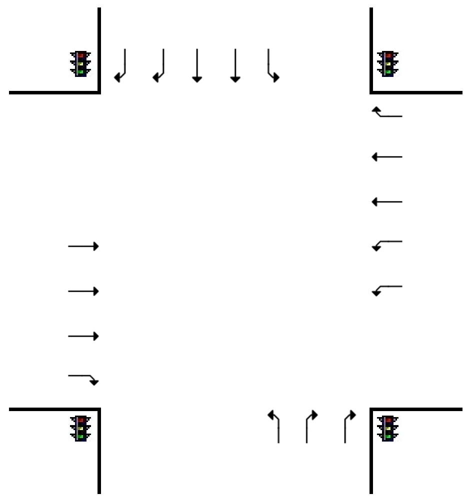
CITY/STATE: Manteca, CA | **DATE:** Wed, Dec 8 2021

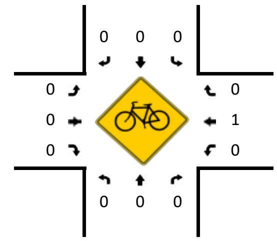


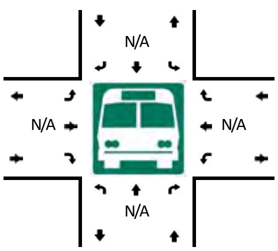
Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:35 AM -- 7:50 AM

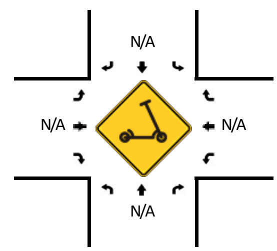












5-Min Count Period Beginning At	5. SR 99 SB Ramps/N Main St (Northbound)				5. SR 99 SB Ramps/N Main St (Southbound)				W Lathrop Rd (Eastbound)				W Lathrop Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	4	0	28	0	3	9	16	0	0	37	7	0	2	32	2	0	140	
7:05 AM	4	0	31	0	4	5	18	0	0	54	3	0	3	32	1	0	155	
7:10 AM	4	0	21	0	3	10	11	0	0	48	6	0	2	27	2	0	134	
7:15 AM	3	0	17	0	3	6	15	0	0	58	3	0	4	37	3	0	149	
7:20 AM	1	0	25	0	3	21	21	0	0	62	4	0	6	34	3	0	180	
7:25 AM	7	0	31	0	6	19	27	0	0	60	7	0	7	33	5	0	202	
7:30 AM	5	0	25	0	2	19	18	0	0	54	7	0	9	45	7	0	191	
7:35 AM	2	0	31	0	5	30	16	0	0	91	4	0	8	44	2	0	233	
7:40 AM	4	0	31	0	3	17	23	0	0	87	8	0	3	50	6	0	232	
7:45 AM	4	0	52	0	8	51	23	0	0	69	15	0	7	40	5	0	274	
7:50 AM	1	0	34	0	5	27	23	0	0	62	5	0	9	41	5	0	212	
7:55 AM	11	0	27	0	2	24	23	0	0	87	5	0	9	38	1	0	227	2329
8:00 AM	9	0	22	0	1	30	14	0	0	81	8	0	9	42	2	0	218	2407
8:05 AM	5	0	39	0	7	15	10	0	0	57	7	0	9	28	5	0	182	2434
8:10 AM	7	0	22	0	5	15	14	0	0	64	7	0	3	30	4	0	171	2471
8:15 AM	5	0	19	0	3	26	19	0	0	52	2	0	8	41	0	0	175	2497
8:20 AM	8	0	20	0	2	15	16	0	0	60	3	0	6	61	2	0	193	2510
8:25 AM	9	0	27	0	6	22	19	0	0	52	8	0	6	41	6	0	196	2504
8:30 AM	5	0	17	0	2	15	18	0	0	53	8	0	7	25	3	0	153	2466
8:35 AM	3	0	15	0	1	17	14	0	0	39	6	0	2	40	5	0	142	2375
8:40 AM	5	0	20	0	1	14	23	0	0	58	9	0	7	38	2	0	177	2320
8:45 AM	5	0	13	0	4	17	12	0	0	53	10	0	11	47	3	0	175	2221
8:50 AM	5	0	22	0	3	20	15	0	0	36	8	0	9	38	1	0	157	2166
8:55 AM	9	0	20	0	2	15	12	0	0	41	11	0	5	30	3	0	148	2087

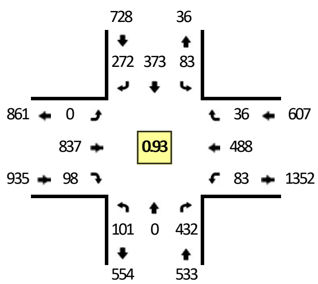
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	40	0	456	0	64	392	248	0	0	988	108	0	72	536	52	0	2956
Heavy Trucks	12	0	12		8	0	16		0	64	4		8	32	0		156
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

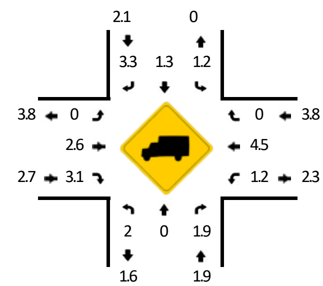
Report generated on 12/20/2021 4:06 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

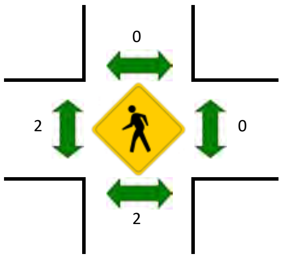
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

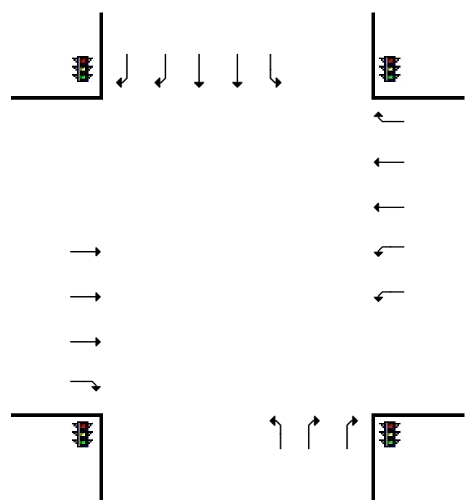
LOCATION: 5. SR 99 SB Ramps/N Main St -- W Lathrop Rd | **QC JOB #:** 15637110
CITY/STATE: Manteca, CA | **DATE:** Wed, Dec 8 2021

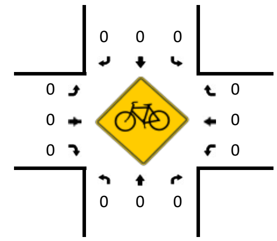


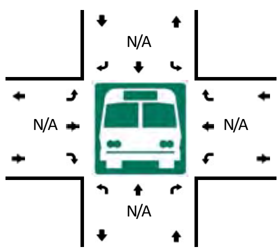
Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

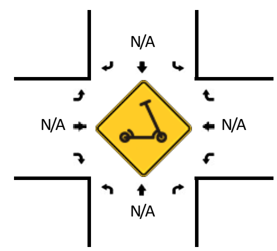












5-Min Count Period Beginning At	5. SR 99 SB Ramps/N Main St (Northbound)				5. SR 99 SB Ramps/N Main St (Southbound)				W Lathrop Rd (Eastbound)				W Lathrop Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	5	0	32	0	4	32	25	0	0	61	5	0	8	37	3	0	212	
4:05 PM	18	0	33	0	12	28	18	0	0	50	8	0	7	57	2	0	233	
4:10 PM	18	0	21	0	11	21	23	0	0	59	11	0	6	34	7	0	211	
4:15 PM	6	0	26	0	9	32	28	0	0	71	11	0	6	42	1	0	232	
4:20 PM	17	0	22	0	9	23	26	0	0	69	12	0	5	39	1	0	223	
4:25 PM	6	0	35	0	7	46	24	0	0	71	2	0	12	41	0	0	244	
4:30 PM	3	0	28	0	3	15	10	0	0	86	9	0	4	40	3	0	201	
4:35 PM	12	0	45	0	5	29	28	0	0	60	8	0	4	41	1	0	233	
4:40 PM	10	0	37	0	5	36	29	0	0	76	6	0	7	35	5	0	246	
4:45 PM	6	0	17	0	3	20	30	0	0	75	7	0	10	39	1	0	208	
4:50 PM	11	0	37	0	8	30	20	0	0	74	9	0	4	47	1	0	241	
4:55 PM	12	0	33	0	15	49	16	0	0	38	13	0	8	40	5	0	229	2713
5:00 PM	11	0	32	0	12	27	18	0	0	76	7	0	6	25	0	0	214	2715
5:05 PM	7	0	52	0	7	25	14	0	0	56	7	0	8	52	5	0	233	2715
5:10 PM	9	0	31	0	5	22	26	0	0	95	9	0	8	40	3	0	248	2752
5:15 PM	7	0	50	0	4	44	29	0	0	65	11	0	4	29	7	0	250	2770
5:20 PM	7	0	35	0	9	30	28	0	0	65	10	0	8	59	5	0	256	2803
5:25 PM	7	0	31	0	11	28	25	0	0	61	8	0	6	37	2	0	216	2775
5:30 PM	10	0	17	0	3	22	33	0	0	45	9	0	8	39	3	0	189	2763
5:35 PM	6	0	40	0	8	24	20	0	0	55	9	0	8	51	0	0	221	2751
5:40 PM	9	0	30	0	7	26	25	0	0	68	13	0	4	51	2	0	235	2740
5:45 PM	11	0	21	0	9	26	31	0	0	51	13	0	5	31	6	0	204	2736
5:50 PM	10	0	24	0	6	30	17	0	0	66	8	0	13	37	0	0	211	2706
5:55 PM	12	0	19	0	4	27	19	0	0	34	6	0	7	22	2	0	152	2629

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	92	0	464	0	72	384	332	0	0	900	120	0	80	512	60	0	3016
Heavy Trucks	0	0	12		0	4	8		0	12	8		0	28	0		72
Buses																	
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

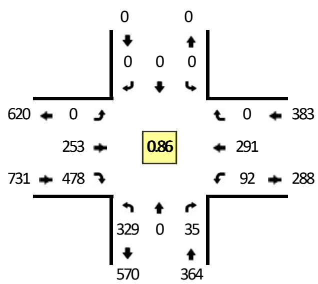
Comments:

Report generated on 12/20/2021 4:06 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

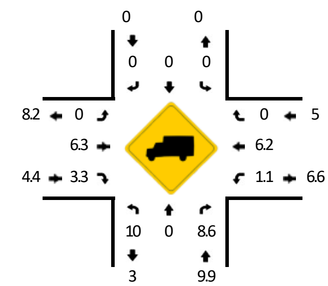
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

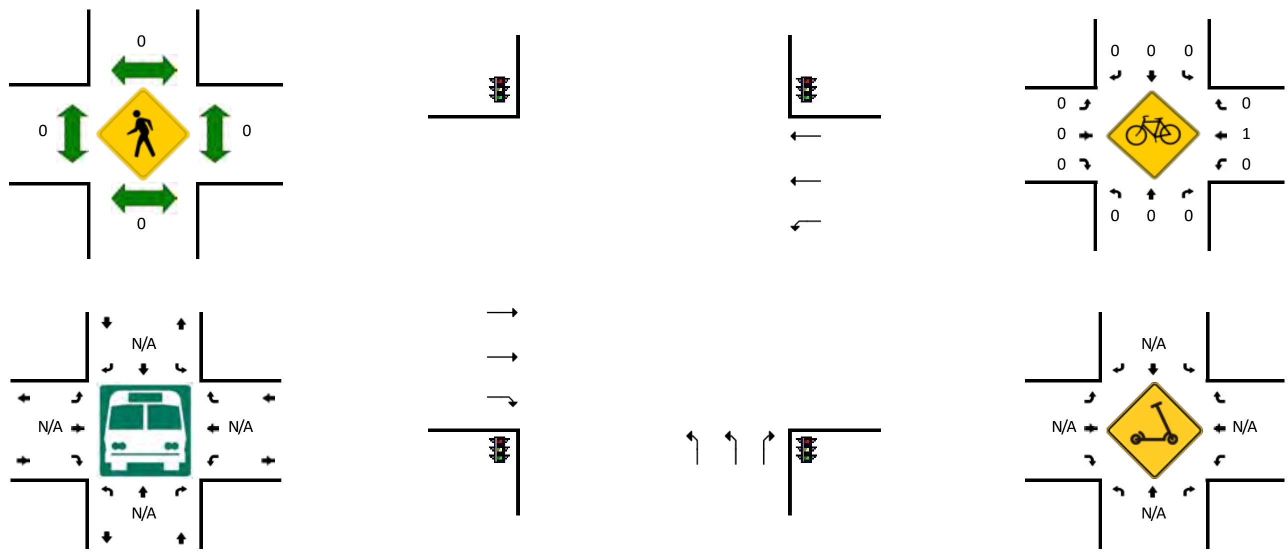
LOCATION: 4. SR 99 NB Ramps -- Lathrop Rd | **QC JOB #:** 15637107

CITY/STATE: San Joaquin, CA | **DATE:** Wed, Dec 8 2021



Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:40 AM -- 7:55 AM





5-Min Count Period Beginning At	4. SR 99 NB Ramps (Northbound) Left	Thru	Right	U	4. SR 99 NB Ramps (Southbound) Left	Thru	Right	U	Lathrop Rd (Eastbound) Left	Thru	Right	U	Lathrop Rd (Westbound) Left	Thru	Right	U	Total	Hourly Totals
7:00 AM	36	0	5	0	0	0	0	0	0	9	35	0	7	8	0	0	100	
7:05 AM	28	0	5	0	0	0	0	0	0	9	43	0	6	3	0	0	94	
7:10 AM	24	0	0	0	0	0	0	0	0	13	33	0	7	9	0	0	86	
7:15 AM	26	0	3	0	0	0	0	0	0	8	41	0	5	16	0	0	99	
7:20 AM	23	0	7	0	0	0	0	0	0	17	37	0	6	21	0	0	111	
7:25 AM	26	0	1	0	0	0	0	0	0	17	32	0	13	27	0	0	116	
7:30 AM	33	0	4	0	0	0	0	0	0	14	41	0	8	21	0	0	121	
7:35 AM	20	0	4	0	0	0	0	0	0	30	49	0	6	26	0	0	135	
7:40 AM	28	0	9	0	0	0	0	0	0	24	53	0	10	35	0	0	159	
7:45 AM	31	0	2	0	0	0	0	0	0	18	48	0	7	25	0	0	131	
7:50 AM	25	0	4	0	0	0	0	0	0	27	45	0	11	28	0	0	140	
7:55 AM	24	0	1	0	0	0	0	0	0	27	38	0	10	22	0	0	122	1414
8:00 AM	30	0	2	0	0	0	0	0	0	18	32	0	6	21	0	0	109	1423
8:05 AM	21	0	3	0	0	0	0	0	0	26	47	0	6	16	0	0	119	1448
8:10 AM	28	0	3	0	0	0	0	0	0	17	31	0	6	19	0	0	104	1466
8:15 AM	25	0	1	0	0	0	0	0	0	15	36	0	4	21	0	0	102	1469
8:20 AM	38	0	1	0	0	0	0	0	0	20	26	0	5	30	0	0	120	1478
8:25 AM	37	0	2	0	0	0	0	0	0	17	28	0	5	18	0	0	107	1469
8:30 AM	14	0	2	0	0	0	0	0	0	15	22	0	3	15	0	0	71	1419
8:35 AM	32	0	3	0	0	0	0	0	0	17	25	0	6	20	0	0	103	1387
8:40 AM	34	0	3	0	0	0	0	0	0	16	32	0	6	13	0	0	104	1332
8:45 AM	34	0	4	0	0	0	0	0	0	13	30	0	3	19	0	0	103	1304
8:50 AM	21	0	1	0	0	0	0	0	0	12	26	0	3	24	0	0	87	1251
8:55 AM	22	0	6	0	0	0	0	0	0	9	22	0	4	14	0	0	77	1206

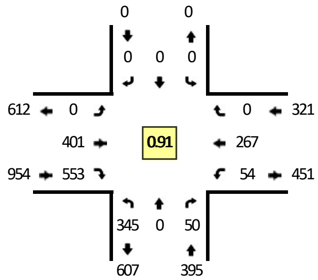
Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	336	0	60	0	0	0	0	0	0	276	584	0	112	352	0	0	1720
Heavy Trucks	24	0	4		0	0	0		0	8	20		0	12	0		68
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

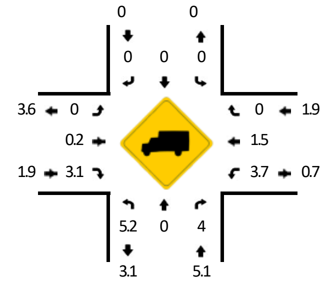
Report generated on 12/20/2021 4:06 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

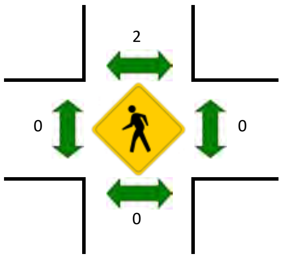
Type of peak hour being reported: Intersection Peak — Method for determining peak hour: Total Entering Volume

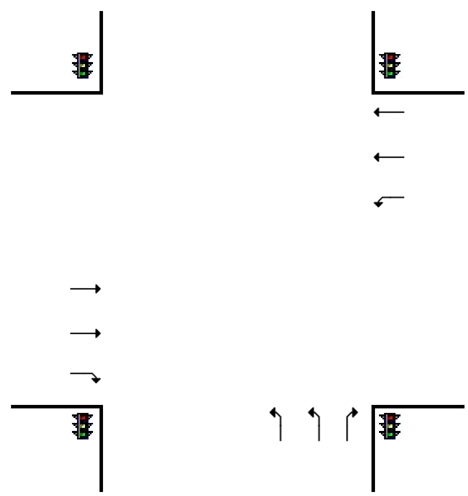
LOCATION: 4. SR 99 NB Ramps -- Lathrop Rd — **QC JOB #:** 15637108
CITY/STATE: San Joaquin, CA — **DATE:** Wed, Dec 8 2021

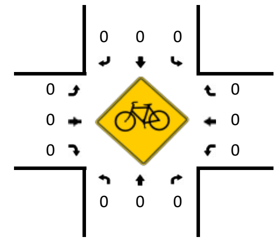


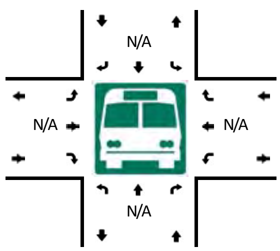
Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

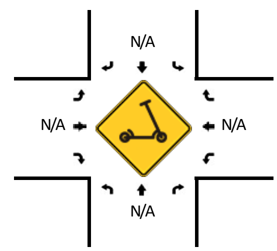












5-Min Count Period Beginning At	4. SR 99 NB Ramps (Northbound)				4. SR 99 NB Ramps (Southbound)				Lathrop Rd (Eastbound)				Lathrop Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	31	0	4	0	0	0	0	0	0	18	33	0	4	19	0	0	109	
4:05 PM	28	0	4	0	0	0	0	0	0	38	43	0	8	29	0	0	150	
4:10 PM	27	0	5	0	0	0	0	0	0	37	29	0	3	22	0	0	123	
4:15 PM	31	0	3	0	0	0	0	0	0	31	40	0	0	18	0	0	123	
4:20 PM	30	0	4	0	0	0	0	0	0	38	37	0	4	20	0	0	133	
4:25 PM	28	0	3	0	0	0	0	0	0	38	47	0	3	19	0	0	138	
4:30 PM	25	0	2	0	0	0	0	0	0	36	39	0	2	19	0	0	123	
4:35 PM	25	0	3	0	0	0	0	0	0	37	42	0	5	26	0	0	138	
4:40 PM	23	0	7	0	0	0	0	0	0	28	48	0	6	21	0	0	133	
4:45 PM	38	0	5	0	0	0	0	0	0	35	29	0	9	18	0	0	134	
4:50 PM	26	0	3	0	0	0	0	0	0	35	48	0	6	23	0	0	141	
4:55 PM	28	0	2	0	0	0	0	0	0	27	41	0	2	26	0	0	126	1571
5:00 PM	25	0	4	0	0	0	0	0	0	46	31	0	2	16	0	0	124	1586
5:05 PM	31	0	5	0	0	0	0	0	0	31	60	0	1	33	0	0	161	1597
5:10 PM	27	0	5	0	0	0	0	0	0	35	64	0	6	22	0	0	159	1633
5:15 PM	22	0	9	0	0	0	0	0	0	26	46	0	10	24	0	0	137	1647
5:20 PM	47	0	2	0	0	0	0	0	0	27	58	0	2	20	0	0	156	1670
5:25 PM	34	0	9	0	0	0	0	0	0	38	32	0	3	19	0	0	135	1667
5:30 PM	33	0	1	0	0	0	0	0	0	20	27	0	2	11	0	0	94	1638
5:35 PM	39	0	2	0	0	0	0	0	0	32	42	0	6	22	0	0	143	1643
5:40 PM	33	0	2	0	0	0	0	0	0	30	47	0	5	21	0	0	138	1648
5:45 PM	30	0	2	0	0	0	0	0	0	25	22	0	1	22	0	0	102	1616
5:50 PM	20	0	2	0	0	0	0	0	0	32	35	0	3	24	0	0	116	1591
5:55 PM	35	0	3	0	0	0	0	0	0	20	17	0	4	16	0	0	95	1560

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	320	0	76	0	0	0	0	0	0	368	680	0	68	316	0	0	1828
Heavy Trucks	28	0	0		0	0	0		0	0	16		8	0	0		52
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

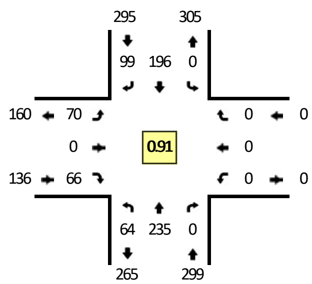
Comments:

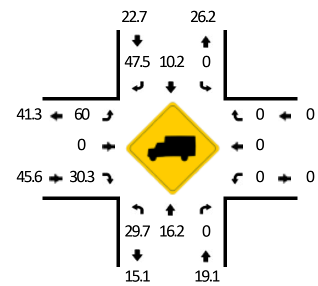
Report generated on 12/20/2021 4:06 PM — SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

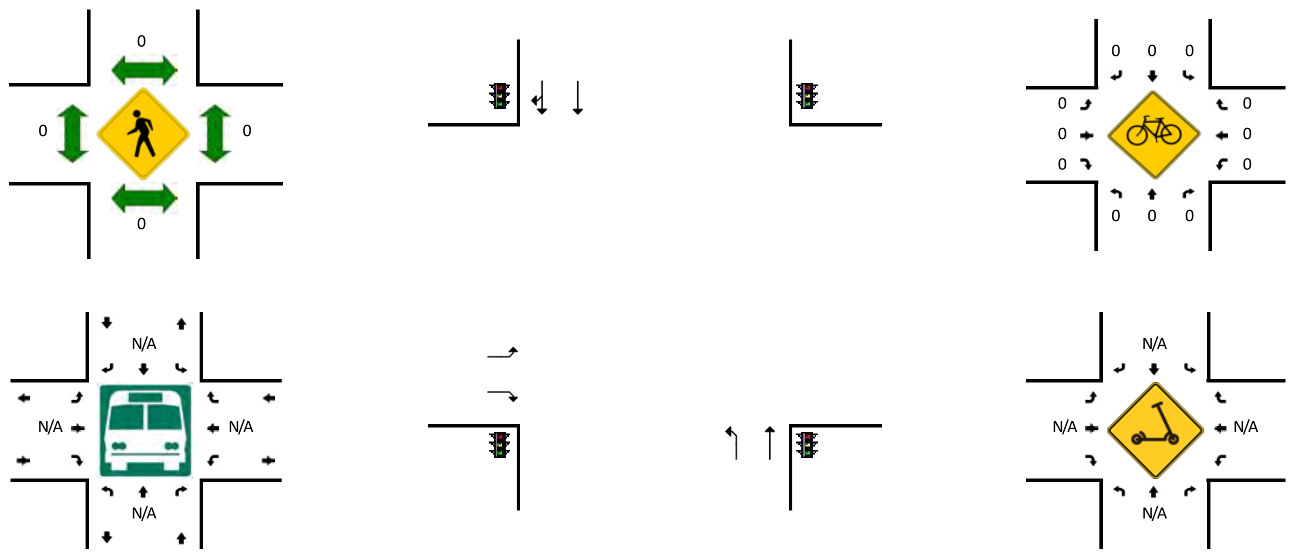
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: 6. S Airport Wy -- Roth Rd | **QC JOB #:** 15637111
CITY/STATE: Manteca, CA | **DATE:** Wed, Dec 8 2021

Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:30 AM -- 7:45 AM







5-Min Count Period Beginning At	6. S Airport Wy (Northbound)				6. S Airport Wy (Southbound)				Roth Rd (Eastbound)				Roth Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	7	11	0	0	0	15	7	0	6	0	10	0	0	0	0	0	56	
7:05 AM	1	9	0	0	0	12	6	0	1	0	3	0	0	0	0	0	32	
7:10 AM	2	15	0	0	0	13	7	0	6	0	6	0	0	0	0	0	49	
7:15 AM	6	19	0	0	0	13	2	0	5	0	4	0	0	0	0	0	49	
7:20 AM	5	14	0	0	0	19	9	0	5	0	6	0	0	0	0	0	58	
7:25 AM	2	21	0	0	0	12	8	0	8	0	1	0	0	0	0	0	52	
7:30 AM	1	20	0	0	0	21	11	0	5	0	11	0	0	0	0	0	69	
7:35 AM	6	17	0	0	0	20	8	0	9	0	5	0	0	0	0	0	65	
7:40 AM	1	26	0	0	0	25	7	0	3	0	4	0	0	0	0	0	66	
7:45 AM	5	26	0	0	0	21	7	0	4	0	3	0	0	0	0	0	66	
7:50 AM	7	15	0	0	0	14	8	0	5	0	4	0	0	0	0	0	53	
7:55 AM	9	19	0	0	0	14	9	0	2	0	5	0	0	0	0	0	58	673
8:00 AM	6	21	0	0	0	16	10	0	7	0	5	0	0	0	0	0	65	682
8:05 AM	7	16	0	1	0	12	8	0	5	0	9	0	0	0	0	0	58	708
8:10 AM	7	20	0	1	0	8	8	0	8	0	5	0	0	0	0	0	57	716
8:15 AM	7	16	0	0	0	7	7	0	9	0	5	0	0	0	0	0	51	718
8:20 AM	3	18	0	1	0	26	8	0	5	0	9	0	0	0	0	0	70	730
8:25 AM	6	13	0	0	0	18	5	0	3	0	6	0	0	0	0	0	51	729
8:30 AM	9	8	0	0	0	14	2	0	6	0	3	0	0	0	0	0	42	702
8:35 AM	7	13	0	0	0	15	11	0	2	0	6	0	0	0	0	0	54	691
8:40 AM	3	12	0	0	0	14	6	0	6	0	12	0	0	0	0	0	53	678
8:45 AM	7	9	0	0	0	13	3	0	5	0	7	0	0	0	0	0	44	656
8:50 AM	5	14	0	1	0	10	4	0	6	0	9	0	0	0	0	0	49	652
8:55 AM	4	7	0	0	0	14	4	0	2	0	6	0	0	0	0	0	37	631

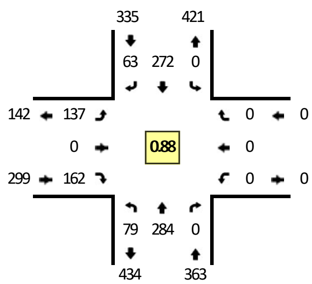
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	32	252	0	0	0	264	104	0	68	0	80	0	0	0	0	0	800
Heavy Trucks	4	44	0		0	20	52		28	0	28		0	0	0		176
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

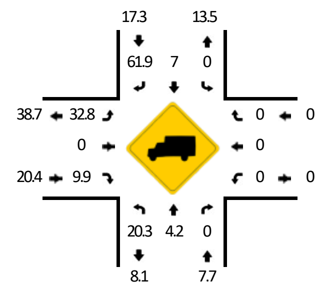
Report generated on 12/20/2021 4:06 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

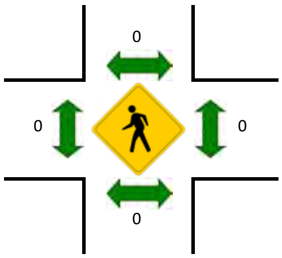
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

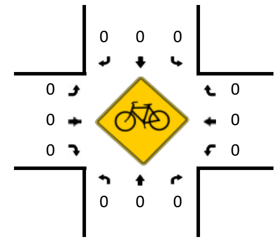
LOCATION: 6. S Airport Wy -- Roth Rd | **QC JOB #:** 15637112
CITY/STATE: Manteca, CA | **DATE:** Wed, Dec 8 2021

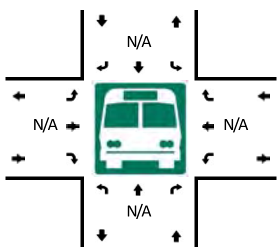


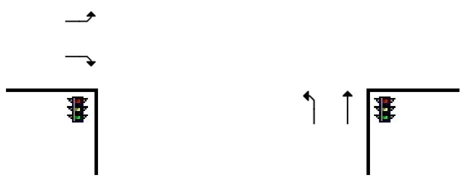
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:10 PM -- 4:25 PM

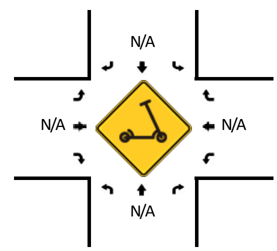












5-Min Count Period Beginning At	6. S Airport Wy (Northbound)				6. S Airport Wy (Southbound)				Roth Rd (Eastbound)				Roth Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	15	0	0	0	28	6	0	13	0	21	0	0	0	0	0	86	
4:05 PM	4	26	0	0	0	26	4	0	16	0	10	0	0	0	0	0	86	
4:10 PM	8	22	0	0	0	15	6	0	17	0	14	0	0	0	0	0	82	
4:15 PM	15	25	0	0	0	29	4	0	4	0	8	0	0	0	0	0	85	
4:20 PM	9	40	0	0	0	29	6	0	15	0	16	0	0	0	0	0	115	
4:25 PM	3	18	0	0	0	21	7	0	13	0	4	0	0	0	0	0	66	
4:30 PM	16	31	0	0	0	26	3	0	6	0	11	0	0	0	0	0	93	
4:35 PM	3	20	0	0	0	18	5	0	11	0	15	0	0	0	0	0	72	
4:40 PM	5	25	0	0	0	18	6	0	11	0	23	0	0	0	0	0	88	
4:45 PM	2	25	0	0	0	24	4	0	13	0	14	0	0	0	0	0	82	
4:50 PM	3	25	0	0	0	24	5	0	3	0	15	0	0	0	0	0	75	
4:55 PM	8	12	0	0	0	14	7	0	15	0	11	0	0	0	0	0	67	997
5:00 PM	6	24	0	0	0	19	1	0	13	0	12	0	0	0	0	0	75	986
5:05 PM	5	21	0	0	0	25	2	0	17	0	14	0	0	0	0	0	84	984
5:10 PM	5	16	0	0	0	23	6	0	14	0	14	0	0	0	0	0	78	980
5:15 PM	6	33	0	0	0	26	5	0	11	0	10	0	0	0	0	0	91	986
5:20 PM	8	27	0	0	0	17	7	0	6	0	9	0	0	0	0	0	74	945
5:25 PM	4	14	0	0	0	20	4	0	5	0	11	0	0	0	0	0	58	937
5:30 PM	0	15	0	0	0	19	7	0	8	0	7	0	0	0	0	0	56	900
5:35 PM	3	15	0	0	0	20	9	0	8	0	10	0	0	0	0	0	65	893
5:40 PM	2	15	0	0	0	21	6	0	2	0	13	0	0	0	0	0	59	864
5:45 PM	8	13	0	0	0	9	1	0	11	0	6	0	0	0	0	0	48	830
5:50 PM	3	15	0	0	0	15	1	0	7	0	5	0	0	0	0	0	46	801
5:55 PM	2	16	0	0	0	16	6	0	5	0	8	0	0	0	0	0	53	787

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	128	348	0	0	0	292	64	0	144	0	152	0	0	0	0	0	1128
Heavy Trucks	28	24	0		0	12	40		52	0	4		0	0	0		160
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

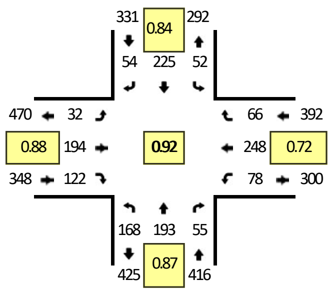
Comments:

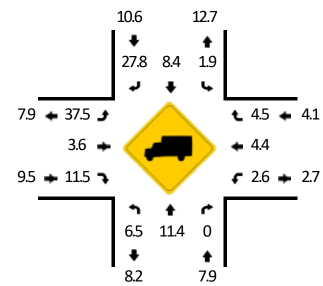
Report generated on 12/20/2021 4:06 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

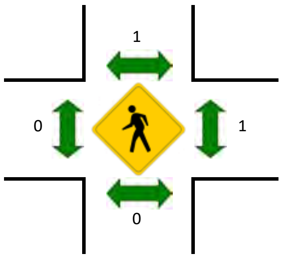
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

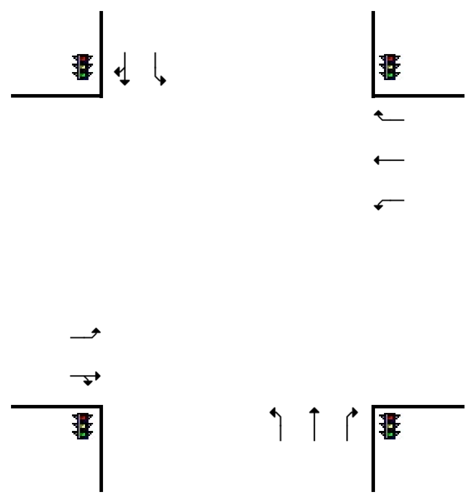
LOCATION: S Airport Wy -- W Louise Ave | **QC JOB #:** 15549301
CITY/STATE: Manteca, CA | **DATE:** Tue, Sep 14 2021

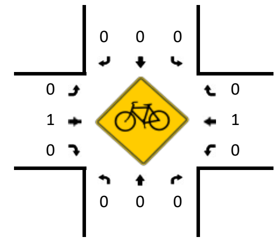
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

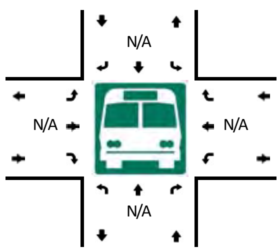


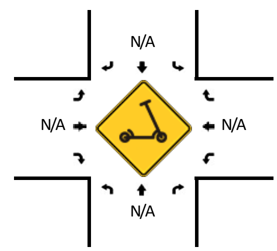












15-Min Count Period Beginning At	S Airport Wy (Northbound) Left	Thru	Right	U	S Airport Wy (Southbound) Left	Thru	Right	U	W Louise Ave (Eastbound) Left	Thru	Right	U	W Louise Ave (Westbound) Left	Thru	Right	U	Total	Hourly Totals
7:00 AM	27	49	8	0	2	37	22	0	8	10	12	0	24	50	12	0	261	
7:15 AM	40	42	9	0	11	39	17	0	5	27	26	0	21	58	13	0	308	
7:30 AM	44	59	16	0	18	65	15	0	6	44	25	0	18	64	17	0	391	
7:45 AM	45	40	9	0	14	55	17	0	5	55	29	0	27	83	27	0	406	1366
8:00 AM	37	48	9	0	11	47	8	0	9	46	30	0	18	56	12	0	331	1436
8:15 AM	42	46	21	0	8	58	14	1	12	49	38	0	15	45	10	0	359	1487
8:30 AM	34	44	11	0	18	58	15	0	16	54	30	0	21	41	14	0	356	1452
8:45 AM	44	48	26	0	19	59	16	0	11	58	37	0	27	53	9	1	408	1454

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	180	160	36	0	56	220	68	0	20	220	116	0	108	332	108	0	1624
Heavy Trucks	16	16	0		0	12	20		0	8	8		0	16	4		100
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4
Scooters																	

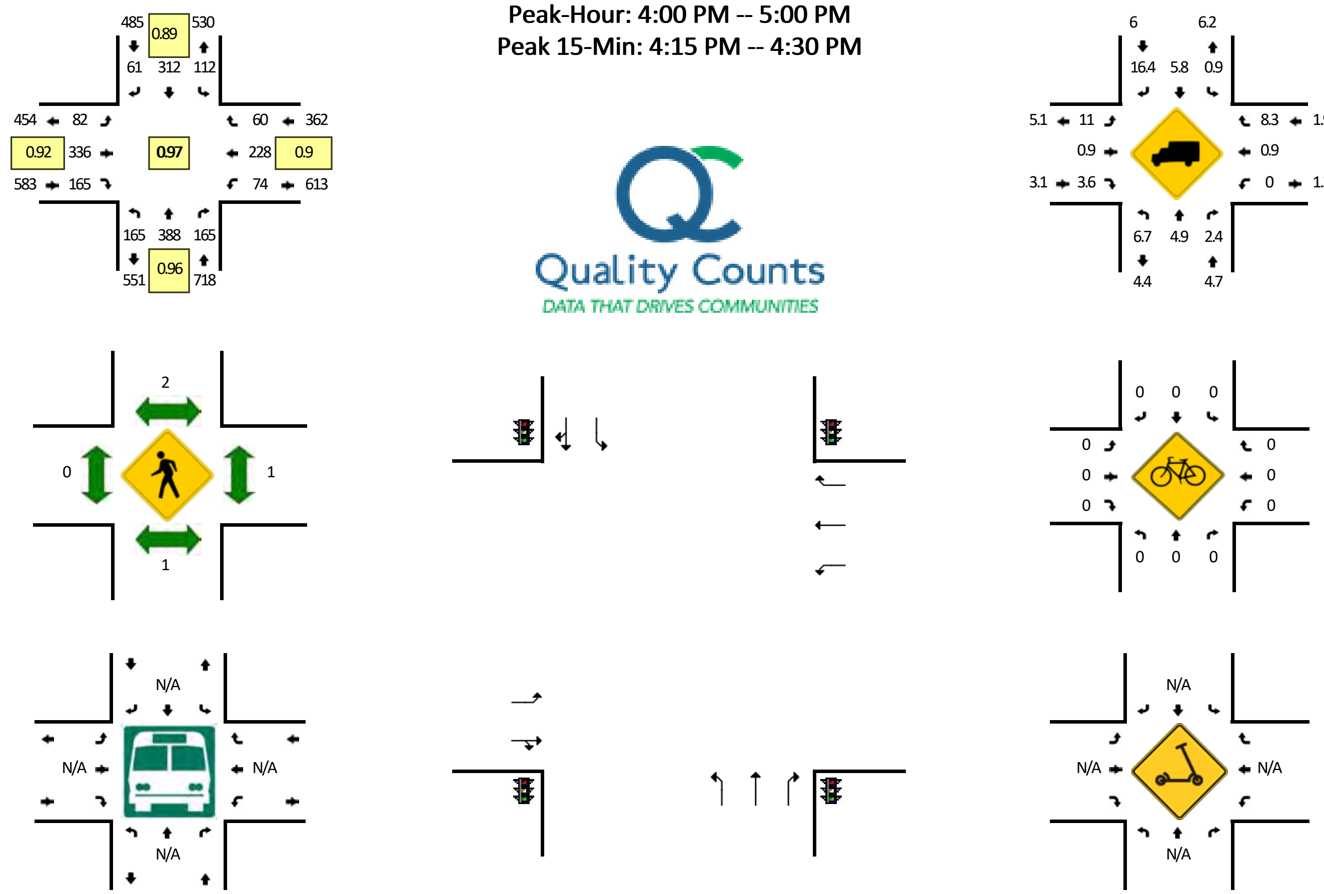
Comments:

Report generated on 9/23/2021 1:19 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak   Method for determining peak hour: Total Entering Volume

LOCATION: S Airport Wy -- W Louise Ave   **QC JOB #:** 15549302
CITY/STATE: Manteca, CA   **DATE:** Tue, Sep 14 2021

Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:15 PM -- 4:30 PM



15-Min Count Period Beginning At	S Airport Wy (Northbound) Left	Thru	Right	U	S Airport Wy (Southbound) Left	Thru	Right	U	W Louise Ave (Eastbound) Left	Thru	Right	U	W Louise Ave (Westbound) Left	Thru	Right	U	Total	Hourly Totals
4:00 PM	54	82	47	0	28	77	12	0	18	101	40	0	16	48	9	0	532	
4:15 PM	40	115	32	0	28	92	17	0	14	73	39	0	19	67	15	0	551	
4:30 PM	38	107	33	0	24	73	12	0	22	86	38	0	21	54	16	0	524	
4:45 PM	33	84	53	0	32	70	20	0	28	76	48	0	18	59	20	0	541	2148
5:00 PM	49	73	41	0	19	85	10	0	33	79	48	0	22	57	13	0	529	2145
5:15 PM	49	81	33	0	12	73	8	0	31	79	53	1	25	55	7	0	507	2101
5:30 PM	46	102	36	0	18	76	16	0	36	87	50	0	21	56	12	0	556	2133
5:45 PM	44	89	35	0	9	74	9	0	25	92	50	0	23	56	13	0	519	2111

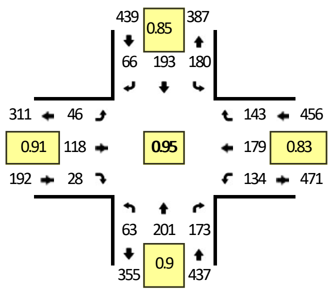
Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	160	460	128	0	112	368	68	0	56	292	156	0	76	268	60	0	2204
Heavy Trucks	12	28	8		4	8	20		4	4	8		0	4	4		104
Buses																	
Pedestrians		4				0				0				4			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

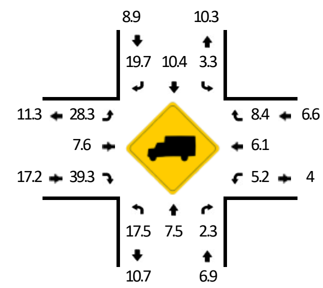
Report generated on 9/23/2021 1:19 PM   SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

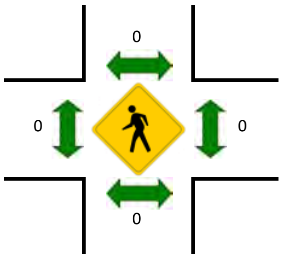
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

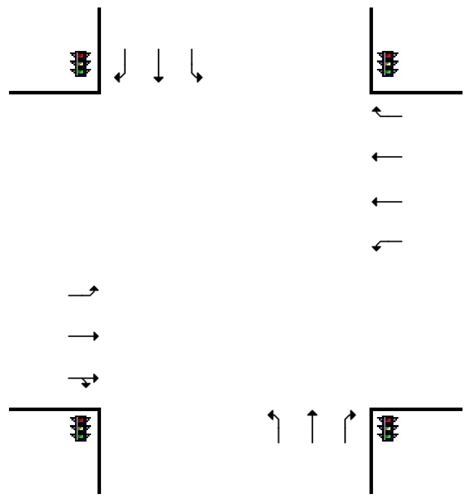
LOCATION: Airport Wy -- W Yosemite Ave | **QC JOB #:** 15549303
CITY/STATE: Manteca, CA | **DATE:** Tue, Sep 14 2021

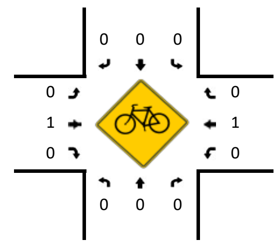


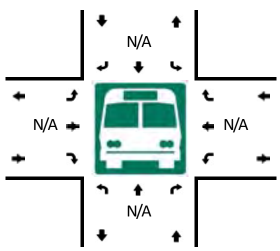
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

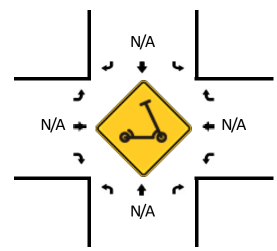












15-Min Count Period Beginning At	Airport Wy (Northbound)				Airport Wy (Southbound)				W Yosemite Ave (Eastbound)				W Yosemite Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	17	45	14	0	25	47	24	0	12	12	4	0	18	34	26	0	278	
7:15 AM	14	53	22	0	23	47	24	0	9	24	7	0	21	30	36	0	310	
7:30 AM	10	61	27	0	21	31	21	0	9	23	8	1	24	54	51	0	341	
7:45 AM	24	52	37	0	33	53	23	0	6	37	5	0	30	55	24	0	379	1308
8:00 AM	26	59	37	0	44	61	24	0	12	24	9	1	29	51	22	0	399	1429
8:15 AM	10	48	41	0	38	31	17	0	6	29	5	1	26	40	31	0	323	1442
8:30 AM	15	39	49	0	59	49	18	0	11	37	4	0	36	40	43	0	400	1501
8:45 AM	12	55	46	0	39	52	7	0	14	28	10	1	43	48	47	0	402	1524

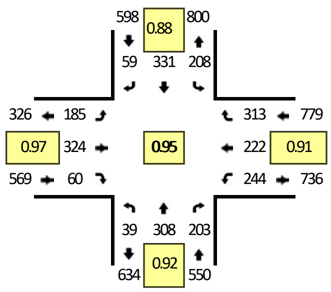
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	48	220	184	0	156	208	28	0	56	112	40	4	172	192	188	0	1608
Heavy Trucks	8	24	4		4	16	4		32	8	16		0	0	8		124
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

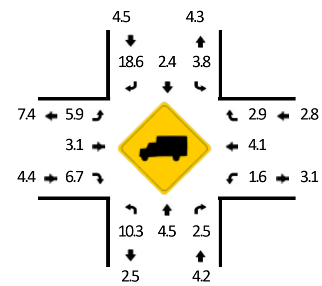
Report generated on 9/23/2021 1:19 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

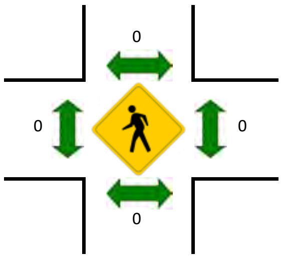
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

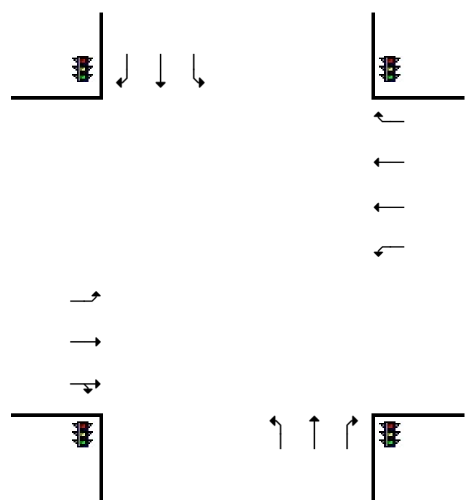
LOCATION: Airport Wy -- W Yosemite Ave | **QC JOB #:** 15549304
CITY/STATE: Manteca, CA | **DATE:** Tue, Sep 14 2021

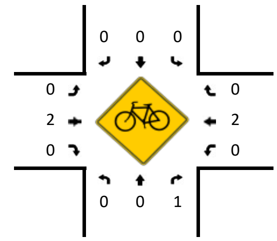


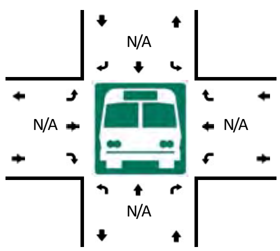
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

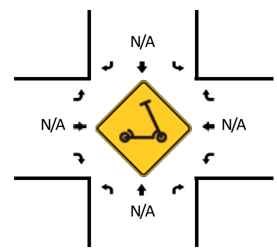












15-Min Count Period Beginning At	Airport Wy (Northbound)				Airport Wy (Southbound)				W Yosemite Ave (Eastbound)				W Yosemite Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	8	81	43	0	73	79	17	0	47	78	15	1	63	56	95	1	657	
4:15 PM	12	76	54	0	59	85	14	0	42	83	15	3	50	53	106	0	652	
4:30 PM	9	70	47	0	37	80	15	0	56	74	15	1	87	63	57	0	611	
4:45 PM	10	81	59	0	39	87	13	0	34	89	15	1	43	50	55	0	576	2496
5:00 PM	15	79	47	0	45	76	12	0	41	71	18	2	71	48	55	0	580	2419
5:15 PM	7	83	39	0	49	86	10	0	31	62	14	0	41	52	59	0	533	2300
5:30 PM	13	81	38	0	33	104	15	0	48	80	27	0	43	48	69	0	599	2288
5:45 PM	12	81	43	0	48	108	9	0	29	60	9	0	60	47	57	0	563	2275

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	32	324	172	0	292	316	68	0	188	312	60	4	252	224	380	4	2628
Heavy Trucks	8	8	8		20	12	4		8	12	0		4	8	4		96
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	8	0		0	0	0		8
Scooters																	

Comments:

Report generated on 9/23/2021 1:19 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

SIGNAL TIMING SHEETS

Location: SJ - 099 - 9.24 NB @ LATHROP RD

System: 2070 V2.20

Master At:

District:

I/C:

Designed By:

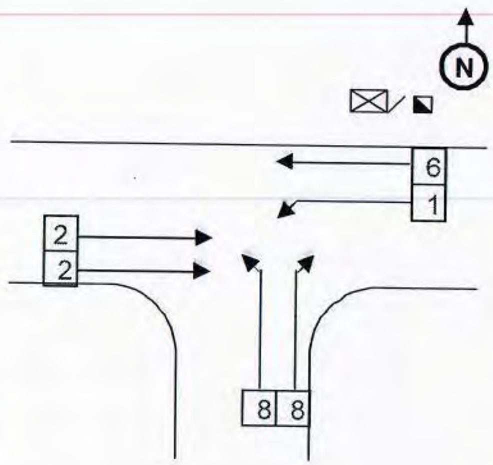
Installed By:

Service Info:

Timing Change: **Date Start:** **Date End:** **Designed:** **Installed:**

PHASE		FLASH
1)	LT: WB LATHROP TO NB 099 ONRAM	[ ]
2)	EB LATHROP	[ ]
3)		[ ]
4)		[ ]
5)		[ ]
6)	WB LATHROP	[ ]
7)		[ ]
8)	099 NB OFF RAMP	[ ]

OVERLAP		
A)		[ ]
B)		[ ]
C)		[ ]
D)		[ ]
E)		[ ]
F)		[ ]



Intersection Layou

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
I	1	2	2	2	3	4	4	4	1	EB L1		P2	P6	flh
	1	2	2	2	3	4	4	4	3	EB L2	BT FL	P4	P8	st
J	5	6	6	6	8	8	8	8	8	WB L1		(2,5) eva	(4,7) evb	rr1
	5	6	6	6	8	8	8	8	8	WB L2		evc (1,6)	evd (3,8)	rr2

Input File

1	2	3	4	5	6
1	2	2P	3	4	4P
5	6	6P	7	8	8P

Output File

Comments and Notes:

RAM Checksum

Page 2:	850A	Page 8:	85AF
Page 3:	D06D	Page 9:	D2FD
Page 4:	F29E	Page 10:	C769
Page 5:	191A	Page 11:	813D
Page 6:	191A	Page 12:	EF20
Page 7:	6EFD	Page 13:	86F7

CONFIGURATION PHASE FLAGS

Phases (2-1-1-1)	*
Permitted	1 2 . . . 6 . 8
Restricted	. . . .

Phase Recalls (2-1-1-2)	
Vehicle Min	. 2 . . . 6 . .
Vehicle Max	. . . .
Pedestrian	. . . .
Bicycle	. . . .

Phase Locks (2-1-1-3)	*
Red	. . . .
Yellow	. . . .
Force/Max	. . . .

Phase Features (2-1-1-4)	*
Double Entry	. 2 . . . 6 . .
Rest In Walk	. . . .
Rest In Red	. . . .
Walk 2	. . . .
Max Green 2	. . . .
Max Green 3	. . . .

Startup (2-1-1-5)	*
First Green Phases	. 2 . . . 6 . .
Yellow Start Phases	 8
Vehicle Calls	1 2 . . . 6 . 8
Pedestrian Calls	. . . .
Yellow Start Overlaps	. . . . . .
Startup All-Red	5.0

Call To Phase (2-1-2-1)		Omit On Green	
1	. . . .	1	. . . .
2	. . . .	2	. . . .
3	. . . .	3	. . . .
4	. . . .	4	. . . .
5	. . . .	5	. . . .
6	. . . .	6	. . . .
7	. . . .	7	. . . .
8	. . . .	8	. . . .

Flashing Colors (2-1-2-2)	
Yellow Flash Phases	. . . .
Yellow Flash Overlap	. . . . . .
Flash In Red Phases	. . . .
Flash In Red Overlap	. . . . . .

Special Operation (2-1-2-3)	
Single Exit Phase	. . . .
Driveway Signal Phases	. . . .
Driveway Signal Overlaps	. . . . . .
Leading Ped Phases	. . . .

Protected Permissive (2-1-2-4)	
Protected Permissive	. . . .

Pedestrian (2-1-3)	*
P1	. . . .
P2	. . . .
P3	. . . .
P4	. . . .
P5	. . . .
P6	. . . .
P7	. . . .
P8	. . . .

Overlap (2-1-4)

Overlap	Parent	Omit	No Start	Not
A	. . . .	. . . .	. . . .	. . . .
B	. . . .	. . . .	. . . .	. . . .
C	. . . .	. . . .	. . . .	. . . .
D	. . . .	. . . .	. . . .	. . . .
E	. . . .	. . . .	. . . .	. . . .
F	. . . .	. . . .	. . . .	. . . .

PHASE TIMING

Phase (2-2)	-1- *	-2- *	-3-	-4-	-5-	-6- *	-7-	-8- *
--- Walk 1 ---	0	10	0	10	0	10	0	10
Flash Don't Walk	0	10	0	10	0	10	0	10
Minimum Green	5	10	10	10	10	10	10	8
Det Limit	10	10	10	10	10	10	10	10
Max Initial	10	10	10	10	10	10	10	10
Max Green 1	15	25	50	50	50	25	50	15
Max Green 2	50	50	50	50	50	50	50	50
Max Green 3	50	50	50	50	50	50	50	50
Extension	1.0	0.2	5.0	5.0	5.0	0.2	5.0	1.0
Maximum Gap	3.0	3.2	5.0	5.0	5.0	3.2	5.0	3.0
Minimum Gap	1.0	0.2	5.0	5.0	5.0	0.2	5.0	1.0
Add Per Vehicle	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0
Reduce Gap By	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Reduce Every	0.8	0.8	1.0	1.0	1.0	0.8	1.0	0.8
Yellow	3.0	4.8	5.0	5.0	5.0	5.2	5.0	3.9
All-Red	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Ped/Bike (2-3)	**-1-**	**-2-**	**-3-**	**-4-**	**-5-**	**-6-**	**-7-**	**-8-**
--- Walk 2 ---	0	0	0	0	0	0	0	0
Delay/Early Walk	0	0	0	0	0	0	0	0
Solid Don't Walk	0	0	0	0	0	0	0	0
Bike Green	0	0	0	0	0	0	0	0
Bike All-Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

OVERLAP TIMING

Overlap (2-4)	A	B	C	D	E	F
Green	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	5.0	5.0	5.0	5.0	5.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Red Revert

Red Revert (2-5)	*
Time	2.0
All-Red Sec/Min (2-6)	
All-Red Sec/Min:	SEC

Max 2 Extension

Max/Gap Out (2-7)	
Max Cnt	0
Gap Cnt	0

Local Plan 1...9 (7-1) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Perm	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 1	Green Factor														
Plan 2	Green Factor														
Plan 3	Green Factor														
Plan 4	Green Factor														
Plan 5	Green Factor														
Plan 6	Green Factor														
Plan 7	Green Factor														
Plan 8	Green Factor														
Plan 9	Green Factor														

Master Timer Sync (7-A)	
Enable in Plans	
1-9	....
11-19	....
21-29	....

Master Sub Master	
Input	
Output	

FREE PLAN PHASE FLAGS

(7-E) Free	
Lag	Omit
.2.4.6.8	....
Veh Min	Veh Max
.2...6..	....
Ped	Bike
....	....
Cond	Cond Grn
....	10

Local Plan 1...9 (7-1) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 1	....	....	....	....	....	....	....	....
Plan 2	....	....	....	....	....	....	....	....
Plan 3	....	....	....	....	....	....	....	....
Plan 4	....	....	....	....	....	....	....	....
Plan 5	....	....	....	....	....	....	....	....
Plan 6	....	....	....	....	....	....	....	....
Plan 7	....	....	....	....	....	....	....	....
Plan 8	....	....	....	....	....	....	....	....
Plan 9	....	....	....	....	....	....	....	....

MANUAL COMMANDS

Manual Plan (4-1)	
Plan	OffSet
	A

Plan: 1-9
15 or 254 = Flash
14 or 255 = Free
Offset A, B, or C

Special Function Override (4-2)			
#	Control	#	Control
1	NORMAL	3	NORMAL
2	NORMAL	4	NORMAL

Detector Reset	(4-3)
Local Manual (4-4)	OFF

Local Plan 11...19 (7-2) TIMING DATA COORDINATION

					[Offsets]			Green Factors or Press [F] to Select Force-Off							
		Cycle	Multi	Perm	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 11	Green Factor														
Plan 12	Green Factor														
Plan 13	Green Factor														
Plan 14	Green Factor														
Plan 15	Green Factor														
Plan 16	Green Factor														
Plan 17	Green Factor														
Plan 18	Green Factor														
Plan 19	Green Factor														

Local Plan 11...19 (7-2) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 11	....	....	....	....	....	....	....	....
Plan 12	....	....	....	....	....	....	....	....
Plan 13	....	....	....	....	....	....	....	....
Plan 14	....	....	....	....	....	....	....	....
Plan 15	....	....	....	....	....	....	....	....
Plan 16	....	....	....	....	....	....	....	....
Plan 17	....	....	....	....	....	....	....	....
Plan 18	....	....	....	....	....	....	....	....
Plan 19	....	....	....	....	....	....	....	....

Local Plan 21...29 (7-3) TIMING DATA COORDINATION

		Cycle	Multi	Perm	[Offsets] A	B	C	Green Factors or Press [F] to Select Force-Off -1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 21	Green Factor														
Plan 22	Green Factor														
Plan 23	Green Factor														
Plan 24	Green Factor														
Plan 25	Green Factor														
Plan 26	Green Factor														
Plan 27	Green Factor														
Plan 28	Green Factor														
Plan 29	Green Factor														

Local Plan 21...29 (7-3) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 21	....	....	....	....	....	....	....	....
Plan 22	....	....	....	....	....	....	....	....
Plan 23	....	....	....	....	....	....	....	....
Plan 24	....	....	....	....	....	....	....	....
Plan 25	....	....	....	....	....	....	....	....
Plan 26	....	....	....	....	....	....	....	....
Plan 27	....	....	....	....	....	....	....	....
Plan 28	....	....	....	....	....	....	....	....
Plan 29	....	....	....	....	....	....	....	....

DETECTORS

Detector Attributes (5-1)			*	
Det	Type	Phases	Lock	Slot
1	COUNT+CALL+EXTEND	1.......	NO	I1U
2	COUNT+CALL+EXTEND	1.......	NO	I1L
3	COUNT+CALL+EXTEND	.2......	NO	I2U
4	COUNT+CALL+EXTEND	.2......	NO	I2L
5	COUNT+CALL+EXTEND	.2......	NO	I3U
6	COUNT+CALL+EXTEND	.2......	NO	I3L
7	COUNT+CALL+EXTEND	.2......	NO	I4U
8	COUNT+CALL+EXTEND	.2......	NO	I4L
9	COUNT+CALL+EXTEND	..3.....	NO	I5U
10	COUNT+CALL+EXTEND	..3.....	NO	I5L
11	COUNT+CALL+EXTEND	...4....	NO	I6U
12	COUNT+CALL+EXTEND	...4....	NO	I6L
13	COUNT+CALL+EXTEND	...4....	NO	I7U
14	CALL+EXTEND	...4....	NO	I7L
15	LIMITED	...4....	NO	I8U
16	COUNT+CALL+EXTEND	...4....	NO	I8L
17	COUNT+CALL+EXTEND	1.......	NO	I9U
18	COUNT+CALL+EXTEND	..3.....	NO	I9L
19	COUNT+CALL+EXTEND	.2......	NO	I10U
20	COUNT+CALL+EXTEND	...4....	NO	I10L
21	COUNT+CALL+EXTEND	....5...	NO	J1U
22	COUNT+CALL+EXTEND	....5...	NO	J1L
23	COUNT+CALL+EXTEND	.....6..	NO	J2U
24	COUNT+CALL+EXTEND	.....6..	NO	J2L
25	COUNT+CALL+EXTEND	.....6..	NO	J3U
26	COUNT+CALL+EXTEND	.....6..	NO	J3L
27	COUNT+CALL+EXTEND	.....6..	NO	J4U
28	COUNT+CALL+EXTEND	.....6..	NO	J4L
29	COUNT+CALL+EXTEND	8	NO	J5U
30	COUNT+CALL+EXTEND	8	NO	J5L
31	COUNT+CALL+EXTEND	8	NO	J6U
32	COUNT+CALL+EXTEND	8	NO	J6L
33	COUNT+CALL+EXTEND	8	NO	J7U
34	COUNT+CALL+EXTEND	8	NO	J7L
35	COUNT+CALL+EXTEND	8	NO	J8U
36	COUNT+CALL+EXTEND	8	NO	J8L
37	COUNT+CALL+EXTEND	8	RED	J9U
38	COUNT+CALL+EXTEND	8	NO	J9L
39	COUNT+CALL+EXTEND	.....6..	NO	J10U
40	COUNT+CALL+EXTEND	8	NO	J10L
41	PEDESTRIAN	.2......	NO	I 12U
42	PEDESTRIAN	...4....	NO	I 12L
43	PEDESTRIAN	.....6..	NO	I 13U
44	PEDESTRIAN	8	NO	I 13L

Detector Configuration (5-2)				*
Det	Delay	Extend	Recall	Port
1			10	3.2
2			10	7.2
3		2.5	10	1.1
4		2.5	10	1.5
5		1.0	10	4.5
6		1.0	10	6.2
7			10	2.1
8			10	7.4
9			10	3.4
10			10	7.6
11			10	1.3
12			10	1.7
13			10	4.7
14			10	6.4
15			10	2.3
16			10	7.8
17			10	3.6
18			10	3.8
19			10	4.1
20			10	4.2
21			10	3.1
22			10	7.1
23		2.5	10	1.2
24		2.5	10	1.6
25		1.0	10	4.6
26		1.0	10	6.3
27			10	2.2
28			10	7.3
29	10		10	3.3
30	10		10	7.5
31		2.1	10	1.4
32		2.1	10	1.8
33		2.1	10	4.8
34	10		10	6.5
35			10	2.4
36			10	7.7
37			10	3.5
38			10	3.7
39			10	4.3
40			10	4.4
41			10	5.1
42			10	5.3
43			10	5.2
44			10	5.4

Failure Times(5-3)	Minutes
Maximum On Time	
Fail Reset Time	

Failure Override (5-4)	
Detectors 1-8	....
Detectors 9-16	....
Detectors17-24	....
Detectors 25-32	....
Detectors 33-40	....
Detectors 41-44	....

System Detector Assignment (5-5)

Sys Det	1	2	3	4	5	6	7	8
Det Nu								
Sys Det	9	10	11	12	13	14	15	16
Det Nu								

CIC Operation (5-6-1)	
Enable in Plans	....

CIC Values (5-6-2)	Volume	Occupancy	Demand
Smoothing	0.66	0.66	0.66
Multiplier	4.0	0.33	
Exponent	0.50	1.00	

Detector-to-Phase Assignment (5-6-3)

Sys Det	1	2	3	4	5	6	7	8
Phase								
Sys Det	9	10	11	12	13	14	15	16
Phase								

Input File Port-Bit Assignments

332 Cabinet - For Reference Only

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
I-	3.2	1.1	4.5	2.1	3.4	1.3	4.7	2.3	3.6	4.1	6.6	5.1	5.2	6.7
	7.2	1.5	6.2	7.4	7.6	1.7	6.4	7.8	3.8	4.2	2.7	5.3	5.4	6.8
J-	3.1	1.2	4.6	2.2	3.3	1.4	4.8	2.4	3.5	4.3	2.8	5.5	5.6	2.5
	7.1	1.6	6.3	7.3	7.5	1.8	6.5	7.7	3.7	4.4	6.1	5.7	5.8	2.6

TOD SCHEDULE

Table 1 (8-2-1)			Table 2 (8-2-2)			Table 3 (8-2-3)			Table 4 (8-2-4)			Table 5 (8-2-5)			Table 6 (8-2-6)		
Time	Plan	OS	Time	Plan	OS	Time	Plan	OS	Time	Plan	OS	Time	Plan	OS	Time	Plan	OS
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A

WEEKDAY ASSIGNMENT

Weekday Table Assignments (8-2-7)						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	1	1	1	1	2	2

HOLIDAY TABLES

Floating Holiday Table (8-2-8)

#	Mnth	Week	DOW	Table
1			....	
2			....	
3			....	
4			....	
5			....	
6			....	
7			....	
8			....	
9			....	
10			....	
11			....	
12			....	
13			....	
14			....	
15			....	
16			....	

Fixed Holiday Table (8-2-9)

#	Mnth	Day	DOW	Table
1			....	
2			....	
3			....	
4			....	
5			....	
6			....	
7			....	
8			....	
9			....	
10			....	
11			....	
12			....	
13			....	
14			....	
15			....	
16			....	

Solar Clock Data (8-4)	
North Latitude	34
West Longitude	118
Local Time Zone	8

Sabbatical Clock (8-5)	
Hebrew	Ped Recall
Sabbath	....
Holiday	....

Daylight Saving (8-6)	
Enabled	YES

TOD FUNCTIONS

TOD Functions (8-3)

#	Start	End	DOW	Action	Phases
1			....		....
2			....		....
3			....		....
4			....		....
5			....		....
6			....		....
7			....		....
8			....		....
9			....		....
10			....		....
11			....		....
12			....		....
13			....		....
14			....		....
15			....		....
16			....		....

Action Codes:

0. None
1. Permitted
2. Restricted
4. Veh Min Recall
5. Veh Max Recall
6. Ped Recall
7. Bike Recall
8. Red Lock
9. Yellow Lock
10. Force/Max Lock
11.Double Entry
12. Y-Coord C
13. Y-Coord D
14. Free
15. Flashing
16. Walk 2
17. Max Green 2
18. Max Green 3
19. Rest in Walk
20. Rest in Red
21. Free Lag Phases
22. Special Functions
23. Truck Preempt
24. Conditional Service
25. Conditional Service
26. Leading Ped
27. Traffic Actuated Max 2
41. Protected Permissive
42. Protected Permissive

Action Code = Phases added to normal setting
100+Action Code = Phases removed
200+Action Code = Phases replaced

COMMUNICATIONS

C2 (6-1-1)	
Address	
Protocol	AB3418
Limit Access	
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

C20 (6-1-2)	
Address	
Protocol	AB3418
Limit Access	
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

C21 (6-1-3)	
Address	
Protocol	AB3418
Limit Access	
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

Limit Access:
- 0-None
- 1-Status Only
- 2-Status, Set Pattern, Time
- 3-Status, Set Pattern, Time, Manual Plan

SOFT LOGIC

Soft Logic (6-2)

#	Data	OP	Data	OP	Data	OP	Data
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							

*Refer to User's Manual for Data and OP Codes

CALLBACK NUMBERS

Callback Numbers (6-3...3)	
Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

NETWORK

Network (6-4)	*
Address	1
Protocol	AB3418
Port	27000
IP Mode	STATIC

IP Address	192 . 168 . 1 . 2
Netmask	255 . 255 . 255 . 0
Broadcast	0 . 0 . 0 . 254
Gateway	192 . 168 . 1 . 1

RAILROAD PREEMPTION

RR 1

(3-1-1)	Timing	Phase Flags (3-1-2)			Pedestrian Flags (3-1-3)			Overlap Flags (3-1-4)		
		Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
Delay										
Clear 1	10	.2..5...	....	....	....	....	.2.4.6.8	......	......	......
Clear 2		....	....	....	....	....	....	......	......	......
Clear 3		....	....	....	....	....	....	......	......	......
Hold		....	....	12345678	....	....	....	......	......	ABCDEF
Exit	5									
Min Grn										
Ped Clr										

Exit Parameters (3-1-5)			
Phase Green	Overlap Green	Vehicle Recall	Ped Call
....	......	12345678	.2.4.6.8

Configuration (3-1-6)			
Port	Gate Port	Latching	Power-Up
2.5	0.0	YES	FLASHING

RR 2

(3-2-1)	Timing	Phase Flags (3-2-2)			Pedestrian Flags (3-2-3)			Overlap Flags (3-2-4)		
		Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
Delay										
Clear 1	10	...4..7.	....	....	....	....	.2.4.6.8	......	......	......
Clear 2		....	....	....	....	....	....	......	......	......
Clear 3		....	....	....	....	....	....	......	......	......
Hold		123..6..	....	....	.2...6..	....	...4...8	......	......	......
Exit										
Min Grn										
Ped Clr										

Exit Parameters (3-2-5)			
Phase Green	Overlap Green	Vehicle Recall	Ped Recall
....	......	...4..7.	....

Configuration (3-2-6)			
Port	Gate Port	Latching	Power-up
2.6	0.0	YES	DARK

EMERGENCY VEHICLE PREEMPTION

EVA (3-A)	Preempt Timers			Phase Green	Overlap Green
	Delay	Clear	Max		
*		5	60	.2..5...	......

Port	Latching	Phase Termination
5.5	NO	ADVANCE

EVB (3-B)	Preempt Timers			Phase Green	Overlap Green
	Delay	Clear	Max		
		30	30	...4..7.	......

Port	Latching	Phase Termination
5.6	NO	ADVANCE

EVC (3-C)	Preempt Timers			Phase Green	Overlap Green
	Delay	Clear	Max		
*		5	60	1....6..	......

Port	Latching	Phase Termination
5.7	NO	ADVANCE

EVD (3-D)	Preempt Timers			Phase Green	Overlap Green
	Delay	Clear	Max		
*		5	60	..3....8	......

Port	Latching	Phase Termination
5.8	NO	ADVANCE

INPUTS

		7 Wire I/C (2-1-5-1)			
		Input	Port	Input	Port
Enable	NO	R1	3.8	Free	3.6
Max ON		R2	3.5	D2	2.8
Max OFF		R3	3.7	D3	6.1

Manual Control (2-1-5-2)	
Input	Port
Manual Advance	6.6
Advance Enable	6.6

Battery Backup (2-1-5-5)	*
Port	Operation
2.7	FLASHING

Cabinet Status (2-1-5-3)	
Input	Port
Flash Bus	
Door Ajar	
Flash Sense	6.7
Stop Time	6.8

Special Function (2-1-5-4)	
Input	Port
1	
2	
3	
4	

Y-Coordination (2-1-5-6)	
Port C	Port D
6.1	2.8

OUTPUTS

Loadswitch Assignments (2-1-6)							+
A	1	2	22	3	4	24	9
B	5	6	26	7	8	28	10
X	13	14	0	11	12	0	0

Loadswitch Codes:

0 Unused (no output)
1-8 Vehicle 1-8
9-14 Overlap A-F
21-28 Ped 1-8
41-47 Special Functions
41 Protected Permissive Flashing Phase 1
43 Protected Permissive Flashing Phase 3
45 Protected Permissive Flashing Phase 5
47 Protected Permissive Flashing Phase 7

51-57 Special Functions
71-72 Seven Wire I/C

+ middle output of loadswitches 3 and 6 Channel 9 and 10

YELLOW YIELD COORDINATION

Y-Coord Plans (7-C,D)	Long Grn	No Grn	Offset	Perm	Force-Offs -1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-	Coord	Lag	Min Recall	Restricted
Plan C													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	. . . .	. . . .
Plan D													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	. . . .	. . . .

TRANSIT PRIORITY

Local Plans (3-E) 1...9 11...19		Early Green	Green Extend	Inhibit Cycles	Phase 1 Minimum	Phase 2 Minimum	Phase 3 Minimum	Phase 4 Minimum	Phase 5 Minimum	Phase 6 Minimum	Phase 7 Minimum	Phase 8 Minimum
Plan 1	Green Factor											
Plan 2	Green Factor											
Plan 3	Green Factor											
Plan 4	Green Factor											
Plan 5	Green Factor											
Plan 6	Green Factor											
Plan 7	Green Factor											
Plan 8	Green Factor											
Plan 9	Green Factor											
Plan 11	Green Factor											
Plan 12	Green Factor											
Plan 13	Green Factor											
Plan 14	Green Factor											
Plan 15	Green Factor											
Plan 16	Green Factor											
Plan 17	Green Factor											
Plan 18	Green Factor											
Plan 19	Green Factor											

Transit Priority Configuration (3-E-A)				Indicator Output	
Enable in Plans		Input	Type	Stop	Go
Plan 1-9	. . . .	0.0	OPT	0	0
Plan 11-19	. . . .	0.0	OPT	0	0

Queue Jump (3-E-B)	
Grn Hold	Hold Phase
	. . . .
	. . . .

Free Plans (3-E-E)	
Max Grn Hold	Hold Phase
	. . . .

Access Utilities (9-5)	
Password	***
Timeout	30

TRUCK PRIORITY

Truck Priority (3-F)	Passage	CarryOver	Clearance	Next Priority	Phase Green	Det 2 Port	Det 3 Port	Det 4 Port	Sign Output	Slave Input	Slave Output
					. . . .	0.0	0.0	0.0	0	0.0	0

Location: SJ - 099 - 09.38 SB @ LATHROP ROAD
System: 2070 V2.20
Master At:

District:
I/C:

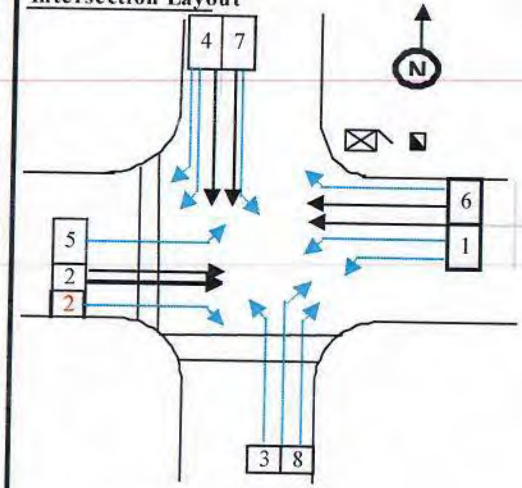
Designed By: LV
Installed By: LV
Service Info:

Timing Change: Date Start: Date End: Designed: Installed:

PHASE		FLASH
1)	LT FR LATHROP RD WB TO N MAIN S	[ ]
2)	LATHROP RD EB	[ ]
3)	LT FR N MAIN ST NB TO LATHROP RD	[ ]
4)	SR-099 SB OFF RAMP	[ ]
5)	FUTURE	[ ]
6)	LATHROP RD WB	[ ]
7)	LT FR SR-099 SB OFF RAMP TO LATH	[ ]
8)	N MAIN ST NB	[ ]

OVERLAP		
A)		[ ]
B)		[ ]
C)		[ ]
D)		[ ]
E)		[ ]
F)		[ ]

Intersection Layout



Crosswalks: P 2 = 129
P 4 = 105
P 6 = 136
P = 0

Signal Configuration: Split

Intersection Layout

1	2	3	4	5	6	7	8	9	10	11	12	13	14
LT1 S234	L123 ADV	L3 S123	L1 S123	LT S234	L12 ADV	L4 S123	L1 S123	LT1 S1					
1	2	2	2	3	4	4	4	1	2		P 2	P 6	FS
1	2	2	2	3	4	4	4	1	4	BAT Norn	P 4	P	ST
LT2 S234	L123 INT	L4 S123	L2 S123	LT ADV	L34 ADV	L3 S123	L2 S123	LT2 S1					
L1 S234	L12 ADV		L1 S123	LT S234	L1 ADV	L1 S1	L1 S234	LT S1					
5	6	6	6	7	8	8	8	5	6		EVA ø2,ø5	EVB ø4,ø7	RR1
5	6	6	6	3	8	8	8	7	8		EVC ø6,ø1	EVD ø8,ø3	RR2
	L12 INT	L3 S123	L2 S123	LT S1	L2 ADV	L2 S1	L2 S2	LT S234					

Input File

1	2	3	4	5	6
ø1	ø2	ø2P	ø3	ø4	ø4P
ø5	ø6	ø6P	ø7	ø8	ø8P

Output File

Comments and Notes:
TURN ON AT 1312

RAM Checksum

Page 2:	D596	Page 8:	85AF
Page 3:	1D7B	Page 9:	D2FD
Page 4:	F29E	Page 10:	C769
Page 5:	191A	Page 11:	692C
Page 6:	191A	Page 12:	EF20
Page 7:	7CC8	Page 13:	86F7

CONFIGURATION PHASE FLAGS

Phases (2-1-1-1)	*
Permitted	1 2 3 4 . 6 7 8
Restricted	. . . .

Phase Recalls (2-1-1-2)	
Vehicle Min	. 2 . . . 6 . .
Vehicle Max	. . . .
Pedestrian	. . . .
Bicycle	. . . .

Phase Locks (2-1-1-3) *	
Red	. . 3 . . . . .
Yellow	. . . .
Force/Max	. . . .

Phase Features (2-1-1-4) *	
Double Entry	. 2 . . . 6 . .
Rest In Walk	. . . .
Rest In Red	. . . .
Walk 2	. . . .
Max Green 2	. . . .
Max Green 3	. . . .

Startup (2-1-1-5)	*
First Green Phases	. 2 . . . 6 . .
Yellow Start Phases	. . . 4 . . . 8
Vehicle Calls	1 2 3 4 . 6 7 8
Pedestrian Calls	. 2 . 4 . 6 . .
Yellow Start Overlaps	. . . . . .
Startup All-Red	5.0

Call To Phase (2-1-2-1)		Omit On Green	
1	. . . .	1	. . . .
2	. . . .	2	. . . .
3	. . . .	3	. . . .
4	. . . .	4	. . . .
5	. . . .	5	. . . .
6	. . . .	6	. . . .
7	. . . .	7	. . . .
8	. . . .	8	. . . .

Flashing Colors (2-1-2-2)	
Yellow Flash Phases	. . . .
Yellow Flash Overlap	. . . . . .
Flash In Red Phases	. . . .
Flash In Red Overlap	. . . . . .

Special Operation (2-1-2-3)	
Single Exit Phase	. . . .
Driveway Signal Phases	. . . .
Driveway Signal Overlaps	. . . . . .
Leading Ped Phases	. . . .

Protected Permissive (2-1-2-4)	
Protected Permissive	. . . .

Pedestrian (2-1-3)	*
P1	. . . .
P2	. 2 . . . . . .
P3	. . . .
P4	. . . 4 . . . .
P5	. . . .
P6	. . . . . 6 . .
P7	. . . .
P8	. . . .

Overlap (2-1-4)

Overlap	Parent	Omit	No Start	Not
A	. . . .	. . . .	. . . .	. . . .
B	. . . .	. . . .	. . . .	. . . .
C	. . . .	. . . .	. . . .	. . . .
D	. . . .	. . . .	. . . .	. . . .
E	. . . .	. . . .	. . . .	. . . .
F	. . . .	. . . .	. . . .	. . . .

PHASE TIMING

Phase (2-2)	-1- *	-2- *	-3- *	-4- *	-5- *	-6- *	-7- *	-8- *
--- Walk 1 ---	0	7	0	7	0	7	0	0
Flash Don't Walk	0	34	0	42	0	39	0	0
Minimum Green	5	11	5	7	5	11	5	7
Det Limit	10	15	10	10	10	15	10	10
Max Initial	10	18	10	31	10	24	10	28
Max Green 1	15	50	15	30	15	50	15	30
Max Green 2	22	60	22	40	22	60	22	40
Max Green 3	30	70	30	50	30	70	30	50
Extension	3.3	3.9	3.3	4.1	3.3	3.9	3.3	3.7
Maximum Gap	4.3	4.9	4.3	5.1	4.3	4.9	4.3	4.7
Minimum Gap	2.3	2.9	2.3	3.1	2.3	2.9	2.3	2.7
Add Per Vehicle	2.0	1.2	2.0	1.2	2.0	1.2	2.0	1.5
Reduce Gap By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Yellow	3.9	4.8	3.7	5.5	3.7	5.0	3.7	4.4
All-Red	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Ped/Bike (2-3)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 2 ---	0	0	0	0	0	0	0	0
Delay/Early Walk	0	0	0	0	0	0	0	0
Solid Don't Walk	0	0	0	0	0	0	0	0
Bike Green	0	0	0	0	0	0	0	0
Bike All-Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

OVERLAP TIMING

Overlap (2-4)	A	B	C	D	E	F
Green	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	5.0	5.0	5.0	5.0	5.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Red Revert

Red Revert (2-5)	*
Time	2.0
All-Red Sec/Min (2-6)	
All-Red Sec/Min:	SEC

Max 2 Extension

Max/Gap Out (2-7)	
Max Cnt	0
Gap Cnt	0

Local Plan 1...9 (7-1) TIMING DATA   COORDINATION

[Offsets]   Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Perm	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 1	Green Factor														
Plan 2	Green Factor														
Plan 3	Green Factor														
Plan 4	Green Factor														
Plan 5	Green Factor														
Plan 6	Green Factor														
Plan 7	Green Factor														
Plan 8	Green Factor														
Plan 9	Green Factor														

Local Plan 1...9 (7-1) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 1	....	....	....	....	....	....	....	....
Plan 2	....	....	....	....	....	....	....	....
Plan 3	....	....	....	....	....	....	....	....
Plan 4	....	....	....	....	....	....	....	....
Plan 5	....	....	....	....	....	....	....	....
Plan 6	....	....	....	....	....	....	....	....
Plan 7	....	....	....	....	....	....	....	....
Plan 8	....	....	....	....	....	....	....	....
Plan 9	....	....	....	....	....	....	....	....

Master Timer Sync (7-A)	
Enable in Plans	
1-9	....
11-19	....
21-29	....

Master Sub Master	
Input	
Output	

FREE PLAN PHASE FLAGS

(7-E) Free	
Lag	Omit
.2.4.6.8	....
Veh Min	Veh Max
.2...6..	....
Ped	Bike
....	....
Cond	Cond Grn
....	10

MANUAL COMMANDS

Manual Plan (4-1)	
Plan	OffSet
	A

Plan: 1-9
15 or 254 = Flash
14 or 255 = Free
Offset A, B, or C

Special Function Override (4-2)			
#	Control	#	Control
1	NORMAL	3	NORMAL
2	NORMAL	4	NORMAL

Detector Reset	(4-3)
Local Manual (4-4)	OFF

Local Plan 11...19 (7-2) TIMING DATA COORDINATION

		Cycle	Multi	Perm	[Offsets] A	B	C	Green Factors or Press [F] to Select Force-Off -1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 11	Green Factor														
Plan 12	Green Factor														
Plan 13	Green Factor														
Plan 14	Green Factor														
Plan 15	Green Factor														
Plan 16	Green Factor														
Plan 17	Green Factor														
Plan 18	Green Factor														
Plan 19	Green Factor														

Local Plan 11...19 (7-2) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 11	....	....	....	....	....	....	....	....
Plan 12	....	....	....	....	....	....	....	....
Plan 13	....	....	....	....	....	....	....	....
Plan 14	....	....	....	....	....	....	....	....
Plan 15	....	....	....	....	....	....	....	....
Plan 16	....	....	....	....	....	....	....	....
Plan 17	....	....	....	....	....	....	....	....
Plan 18	....	....	....	....	....	....	....	....
Plan 19	....	....	....	....	....	....	....	....

Local Plan 21...29 (7-3) TIMING DATA   COORDINATION

[Offsets]   Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Perm	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 21	Green Factor														
Plan 22	Green Factor														
Plan 23	Green Factor														
Plan 24	Green Factor														
Plan 25	Green Factor														
Plan 26	Green Factor														
Plan 27	Green Factor														
Plan 28	Green Factor														
Plan 29	Green Factor														

Local Plan 21...29 (7-3) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 21	....	....	....	....	....	....	....	....
Plan 22	....	....	....	....	....	....	....	....
Plan 23	....	....	....	....	....	....	....	....
Plan 24	....	....	....	....	....	....	....	....
Plan 25	....	....	....	....	....	....	....	....
Plan 26	....	....	....	....	....	....	....	....
Plan 27	....	....	....	....	....	....	....	....
Plan 28	....	....	....	....	....	....	....	....
Plan 29	....	....	....	....	....	....	....	....

DETECTORS

Detector Attributes (5-1) *				Slot	Detector Configuration (5-2) *				
Det	Type	Phases	Lock		Det	Delay	Extend	Recall	Port
1	COUNT+CALL+EXTEND	1.......	NO	I1U	1			10	3.2
2	COUNT+CALL+EXTEND	1.......	NO	I1L	2			10	7.2
3	COUNT+EXTEND	.2......	NO	I2U	3		2.5	10	1.1
4	COUNT+EXTEND	.2......	NO	I2L	4		1.4	10	1.5
5	COUNT+CALL+EXTEND	.2......	NO	I3U	5			10	4.5
6	COUNT+CALL+EXTEND	.2......	NO	I3L	6			10	6.2
7	COUNT+CALL+EXTEND	.2......	NO	I4U	7			10	2.1
8	COUNT+CALL+EXTEND	.2......	NO	I4L	8			10	7.4
9	COUNT+CALL+EXTEND	..3.....	NO	I5U	9			10	3.4
10	COUNT+EXTEND	..3.....	NO	I5L	10			10	7.6
11	COUNT+EXTEND	...4....	NO	I6U	11		2.4	10	1.3
12	COUNT+EXTEND	...4....	NO	I6L	12		2.4	10	1.7
13	COUNT+CALL+EXTEND	...4....	NO	I7U	13			10	4.7
14	COUNT+CALL+EXTEND	...4....	NO	I7L	14			10	6.4
15	COUNT+CALL+EXTEND	...4....	NO	I8U	15			10	2.3
16	COUNT+CALL+EXTEND	...4....	NO	I8L	16			10	7.8
17	COUNT+CALL+EXTEND	1.......	NO	I9U	17			10	3.6
18	COUNT+CALL+EXTEND	1.......	NO	I9L	18			10	3.8
19	COUNT+CALL+EXTEND	.2......	NO	I10U	19			10	4.1
20	COUNT+CALL+EXTEND	...4....	NO	I10L	20			10	4.2
21	COUNT+CALL+EXTEND	....5...	NO	J1U	21			10	3.1
22	COUNT+CALL+EXTEND	....5...	NO	J1L	22			10	7.1
23	COUNT+EXTEND	.....6..	NO	J2U	23		2.5	10	1.2
24	COUNT+EXTEND	.....6..	NO	J2L	24		1.4	10	1.6
25	COUNT+CALL+EXTEND	.....6..	NO	J3U	25			10	4.6
26	CALL+EXTEND	.....6..	NO	J3L	26			10	6.3
27	CALL+EXTEND	.....6..	NO	J4U	27			10	2.2
28	COUNT+CALL+EXTEND	.....6..	NO	J4L	28			10	7.3
29	COUNT+CALL+EXTEND	......7.	NO	J5U	29			10	3.3
30	COUNT+CALL+EXTEND	..3.....	NO	J5L	30			10	7.5
31	COUNT+EXTEND	8	NO	J6U	31		2.4	10	1.4
32	COUNT+EXTEND	8	NO	J6L	32		2.4	10	1.8
33	COUNT+CALL+EXTEND	8	NO	J7U	33			10	4.8
34	COUNT+CALL+EXTEND	8	NO	J7L	34			10	6.5
35	COUNT+CALL+EXTEND	8	NO	J8U	35			10	2.4
36	COUNT+CALL+EXTEND	8	NO	J8L	36			10	7.7
37	COUNT+CALL+EXTEND	....5...	NO	J9U	37			10	3.5
38	COUNT+CALL+EXTEND	......7.	NO	J9L	38			10	3.7
39	COUNT+CALL+EXTEND	.....6..	NO	J10U	39			10	4.3
40	COUNT+CALL+EXTEND	8	NO	J10L	40			10	4.4
41	PEDESTRIAN	.2......	NO	I 12U	41			10	5.1
42	PEDESTRIAN	...4....	NO	I 12L	42			10	5.3
43	PEDESTRIAN	.....6..	NO	I 13U	43			10	5.2
44	PEDESTRIAN	8	NO	I 13L	44			10	5.4

Failure Times(5-3)	Minutes
Maximum On Time	
Fail Reset Time	

Failure Override (5-4)	
Detectors 1-8	....
Detectors 9-16	....
Detectors17-24	....
Detectors 25-32	....
Detectors 33-40	....
Detectors 41-44	....

System Detector Assignment (5-5) *

Sys Det	1	2	3	4	5	6	7	8
Det Nu	3	4	11	12	23	24		
Sys Det	9	10	11	12	13	14	15	16
Det Nu								

CIC Operation (5-6-1)	
Enable in Plans	....

CIC Values (5-6-2)	Volume	Occupancy	Demand
Smoothing	0.66	0.66	0.66
Multiplier	4.0	0.33	
Exponent	0.50	1.00	

Detector-to-Phase Assignment (5-6-3)

Sys Det	1	2	3	4	5	6	7	8
Phase								
Sys Det	9	10	11	12	13	14	15	16
Phase								

Input File Port-Bit Assignments

332 Cabinet - For Reference Only

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
I-	3.2	1.1	4.5	2.1	3.4	1.3	4.7	2.3	3.6	4.1	6.6	5.1	5.2	6.7
	7.2	1.5	6.2	7.4	7.6	1.7	6.4	7.8	3.8	4.2	2.7	5.3	5.4	6.8
J-	3.1	1.2	4.6	2.2	3.3	1.4	4.8	2.4	3.5	4.3	2.8	5.5	5.6	2.5
	7.1	1.6	6.3	7.3	7.5	1.8	6.5	7.7	3.7	4.4	6.1	5.7	5.8	2.6

TOD SCHEDULE

Table 1 (8-2-1)			Table 2 (8-2-2)			Table 3 (8-2-3)			Table 4 (8-2-4)			Table 5 (8-2-5)			Table 6 (8-2-6)		
Time	Plan	OS	Time	Plan	OS	Time	Plan	OS	Time	Plan	OS	Time	Plan	OS	Time	Plan	OS
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A

WEEKDAY ASSIGNMENT

Weekday Table Assignments (8-2-7)						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	1	1	1	1	2	2

HOLIDAY TABLES

Floating Holiday Table (8-2-8)

#	Mnth	Week	DOW	Table
1			....	
2			....	
3			....	
4			....	
5			....	
6			....	
7			....	
8			....	
9			....	
10			....	
11			....	
12			....	
13			....	
14			....	
15			....	
16			....	

Fixed Holiday Table (8-2-9)

#	Mnth	Day	DOW	Table
1			....	
2			....	
3			....	
4			....	
5			....	
6			....	
7			....	
8			....	
9			....	
10			....	
11			....	
12			....	
13			....	
14			....	
15			....	
16			....	

Solar Clock Data (8-4)

North Latitude	34
West Longitude	118
Local Time Zone	8

Sabbatical Clock (8-5)

Hebrew	Ped Recall
Sabbath	....
Holiday	....

Daylight Saving (8-6)

Enabled	YES

TOD FUNCTIONS

TOD Functions (8-3)

#	Start	End	DOW	Action	Phases
1			....		....
2			....		....
3			....		....
4			....		....
5			....		....
6			....		....
7			....		....
8			....		....
9			....		....
10			....		....
11			....		....
12			....		....
13			....		....
14			....		....
15			....		....
16			....		....

Action Codes:
0. None
1. Permitted
2. Restricted
4. Veh Min Recall
5. Veh Max Recall
6. Ped Recall
7. Bike Recall
8. Red Lock
9. Yellow Lock
10. Force/Max Lock
11.Double Entry
12. Y-Coord C
13. Y-Coord D
14. Free
15. Flashing
16. Walk 2
17. Max Green 2
18. Max Green 3
19. Rest in Walk
20. Rest in Red
21. Free Lag Phases
22. Special Functions
23. Truck Preempt
24. Conditional Service
25. Conditional Service
26. Leading Ped
27. Traffic Actuated Max 2
41. Protected Permissive
42. Protected Permissive

Action Code = Phases added to normal setting
100+Action Code = Phases removed
200+Action Code = Phases replaced

COMMUNICATIONS

C2 (6-1-1)	
Address	
Protocol	AB3418
Limit Access	
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

C20 (6-1-2)	
Address	
Protocol	AB3418
Limit Access	
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

C21 (6-1-3)	
Address	
Protocol	AB3418
Limit Access	
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

Limit Access:
0-None
1-Status Only
2-Status, Set Pattern, Time
3-Status, Set Pattern, Time, Manual Plan

SOFT LOGIC

Soft Logic (6-2)

#	Data	OP	Data	OP	Data	OP	Data
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							

*Refer to User's Manual for Data and OP Codes

CALLBACK NUMBERS

Callback Numbers (6-3...3)	
Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

NETWORK

Network (6-4)	*
Address	1
Protocol	AB3418
Port	27000
IP Mode	STATIC

IP Address	192 . 168 . 1 . 2
Netmask	255 . 255 . 255 . 0
Broadcast	0 . 0 . 0 . 254
Gateway	192 . 168 . 1 . 1

RAILROAD PREEMPTION

RR 1 (3-1-1)	Timing	Phase Flags (3-1-2) Grn Hold	Yel Flash	Red Flash	Pedestrian Flags (3-1-3) Walk	Flash DW	Solid DW	Overlap Flags (3-1-4) Grn Hold	Yel Flash	Red Flash
Delay										
Clear 1	10	.2..5...	....	....	....	....	.2.4.6.8	......	......	......
Clear 2		....	....	....	....	....	....	......	......	......
Clear 3		....	....	....	....	....	....	......	......	......
Hold		....	....	12345678	....	....	....	......	......	ABCDEF
Exit	5									
Min Grn										
Ped Clr										

Exit Parameters (3-1-5)

Phase Green	Overlap Green	Vehicle Recall	Ped Call
....	......	12345678	.2.4.6.8

Configuration (3-1-6)

Port	Gate Port	Latching	Power-Up
2.5	0.0	YES	FLASHING

RR 2 (3-2-1)	Timing	Phase Flags (3-2-2) Grn Hold	Yel Flash	Red Flash	Pedestrian Flags (3-2-3) Walk	Flash DW	Solid DW	Overlap Flags (3-2-4) Grn Hold	Yel Flash	Red Flash
Delay										
Clear 1	10	...4..7.	....	....	....	....	.2.4.6.8	......	......	......
Clear 2		....	....	....	....	....	....	......	......	......
Clear 3		....	....	....	....	....	....	......	......	......
Hold		123..6..	....	....	.2...6..	....	...4...8	......	......	......
Exit										
Min Grn										
Ped Clr										

Exit Parameters (3-2-5)

Phase Green	Overlap Green	Vehicle Recall	Ped Recall
....	......	...4..7.	....

Configuration (3-2-6)

Port	Gate Port	Latching	Power-up
2.6	0.0	YES	DARK

EMERGENCY VEHICLE PREEMPTION

EVA (3-A)	Preempt Timers Delay	Clear	Max	Phase Green	Overlap Green
*		5	60	.2..5...	......

Port	Latching	Phase Termination
5.5	NO	ADVANCE

EVB (3-B)	Preempt Timers Delay	Clear	Max	Phase Green	Overlap Green
*		5	60	...4..7.	......

Port	Latching	Phase Termination
5.6	NO	ADVANCE

EVC (3-C)	Preempt Timers Delay	Clear	Max	Phase Green	Overlap Green
*		5	60	1....6..	......

Port	Latching	Phase Termination
5.7	NO	ADVANCE

EVD (3-D)	Preempt Timers Delay	Clear	Max	Phase Green	Overlap Green
*		5	60	..3....8	......

Port	Latching	Phase Termination
5.8	NO	ADVANCE

INPUTS

		7 Wire I/C (2-1-5-1)			
		Input	Port	Input	Port
Enable	NO	R1	3.8	Free	3.6
Max ON		R2	3.5	D2	2.8
Max OFF		R3	3.7	D3	6.1

Manual Control (2-1-5-2)	
Input	Port
Manual Advance	6.6
Advance Enable	6.6

Cabinet Status (2-1-5-3)	
Input	Port
Flash Bus	
Door Ajar	
Flash Sense	6.7
Stop Time	6.8

Special Function (2-1-5-4)	
Input	Port
1	
2	
3	
4	

Battery Backup (2-1-5-5) *	
Port	Operation
2.7	FLASHING

Y-Coordination (2-1-5-6)	
Port C	Port D
6.1	2.8

OUTPUTS

Loadswitch Assignments (2-1-6)							+
A	1	2	22	3	4	24	9
B	5	6	26	7	8	28	10
X	13	14	0	11	12	0	0

Loadswitch Codes:
0 Unused (no output)
1-8 Vehicle 1-8
9-14 Overlap A-F
21-28 Ped 1-8
41-47 Special Functions
41 Protected Permissive Flashing Phase 1
43 Protected Permissive Flashing Phase 3
45 Protected Permissive Flashing Phase 5
47 Protected Permissive Flashing Phase 7

51-57 Special Functions
71-72 Seven Wire I/C

+ middle output of loadswitches 3 and 6 Channel 9 and 10

YELLOW YIELD COORDINATION

Y-Coord Plans (7-C,D)	Long Grn	No Grn	Offset	Perm	Force-Offs -1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-	Coord	Lag	Min Recall	Restricted
Plan C													.2...6..	.2.4.6.8	....	....
Plan D													.2...6..	.2.4.6.8	....	....

TRANSIT PRIORITY

Local Plans (3-E) 1...9 11...19		Early Green	Green Extend	Inhibit Cycles	Phase 1 Minimum	Phase 2 Minimum	Phase 3 Minimum	Phase 4 Minimum	Phase 5 Minimum	Phase 6 Minimum	Phase 7 Minimum	Phase 8 Minimum
Plan 1	Green Factor											
Plan 2	Green Factor											
Plan 3	Green Factor											
Plan 4	Green Factor											
Plan 5	Green Factor											
Plan 6	Green Factor											
Plan 7	Green Factor											
Plan 8	Green Factor											
Plan 9	Green Factor											
Plan 11	Green Factor											
Plan 12	Green Factor											
Plan 13	Green Factor											
Plan 14	Green Factor											
Plan 15	Green Factor											
Plan 16	Green Factor											
Plan 17	Green Factor											
Plan 18	Green Factor											
Plan 19	Green Factor											

Transit Priority Configuration (3-E-A)				Indicator Output	
Enable in Plans		Input	Type	Stop	Go
Plan 1-9	....	0.0	OPT	0	0
Plan 11-19	....	0.0	OPT	0	0

Queue Jump (3-E-B)	
Grn Hold	Hold Phase
	....
	....

Free Plans (3-E-E)	
Max Grn Hold	Hold Phase
	....

Access Utilities (9-5)	
Password	***
Timeout	30

TRUCK PRIORITY

Truck Priority (3-F)	Passage	CarryOver	Clearance	Next Priority	Phase Green	Det 2 Port	Det 3 Port	Det 4 Port	Sign Output	Slave Input	Slave Output
					....	0.0	0.0	0.0	0	0.0	0

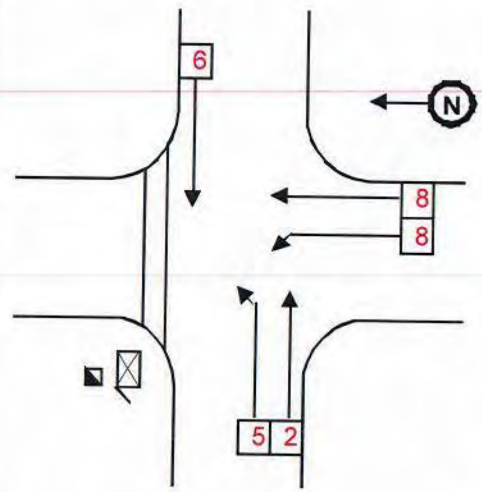
Departme of Transportation, California Caltrans 2070 Control Timing Chart TSCP 2.20 GE 1

Location: SJ - 005 - R017.520 NB @ LATHROP ROAD
System: 2070 V2.17
Master At:
District:
I/C:
Designed By: NAI VANG
Installed By:
Service Info:

Timing Change: Date Start: Date End: Designed: Installed:

PHASE		FLASH
1)		[ ]
2)	EB LATHROP ROAD	[ ]
3)		[ ]
4)		[ ]
5)	LT: EB LATHROP TO NB I5 ON RAMP	[ ]
6)	WB LATHROP ROAD	[ ]
7)		[ ]
8)	SB I5 OFF RAMP	[ ]

OVERLAP	FLASH
A)	[ ]
B)	[ ]
C)	[ ]
D)	[ ]
E)	[ ]
F)	[ ]



Intersection Layout

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
I	1	2	2	2	2	4	4	4	1			P2	P6	flh
	1	2	2	2	2	7	4	4	3		BT FL	P4	P8	st
J	5	6	6	6	6	8	8	8	5			(2,5) eva	(4,7) evb	rr1
	5	6	6	6	6	8	8	8	7			evc (1,6)	evd (3,8)	rr2

Input File

1	2	3	4	5	6
1	2	2P	3	4	4P
5	6	6P	7	8	8P

Output File

Comments and Notes:
TURN ON: 12/6/2012

RAM Checksum

Page 2:	155F	Page 8:	85AF
Page 3:	~~1C46~~ DA19	Page 9:	2B09
Page 4:	F29E	Page 10:	6F66
Page 5:	191A	Page 11:	813D
Page 6:	191A	Page 12:	EF20
Page 7:	B6E6	Page 13:	86F7

CONFIGURATION PHASE FLAGS

Phases (2-1-1-1)	*
Permitted	. 2 . . 5 6 . 8
Restricted	. . . .

Phase Recalls (2-1-1-2)	
Vehicle Min	. 2 . . . 6 . .
Vehicle Max	. . . .
Pedestrian	. . . .
Bicycle	. . . .

Phase Locks (2-1-1-3)	*
Red	. . . .
Yellow	. . . .
Force/Max	. . . .

Phase Features (2-1-1-4)	
Double Entry	. . . .
Rest In Walk	. . . .
Rest In Red	. . . .
Walk 2	. . . .
Max Green 2	. . . .
Max Green 3	. . . .

Startup (2-1-1-5)	*
First Green Phases	. 2 . . . 6 . .
Yellow Start Phases	 8
Vehicle Calls	. 2 . . 5 6 . 8
Pedestrian Calls	. . . . . 6 . .
Yellow Start Overlaps	. . . . . .
Startup All-Red	5.0

Call To Phase (2-1-2-1)		Omit On Green	
1	. . . .	1	. . . .
2	. . . .	2	. . . .
3	. . . .	3	. . . .
4	. . . .	4	. . . .
5	. . . .	5	. . . .
6	. . . .	6	. . . .
7	. . . .	7	. . . .
8	. . . .	8	. . . .

Flashing Colors (2-1-2-2)	
Yellow Flash Phases	. . . .
Yellow Flash Overlap	. . . . . .
Flash In Red Phases	. . . .
Flash In Red Overlap	. . . . . .

Special Operation (2-1-2-3)	
Single Exit Phase	. . . .
Driveway Signal Phases	. . . .
Driveway Signal Overlaps	. . . . . .
Leading Ped Phases	. . . .

Protected Permissive (2-1-2-4)	
Protected Permissive	. . . .

Pedestrian (2-1-3)	*
P1	. . . .
P2	. . . .
P3	. . . .
P4	. . . .
P5	. . . .
P6	. . . . . 6 . .
P7	. . . .
P8	. . . .

Overlap (2-1-4)

Overlap	Parent	Omit	No Start	Not
A	. . . .	. . . .	. . . .	. . . .
B	. . . .	. . . .	. . . .	. . . .
C	. . . .	. . . .	. . . .	. . . .
D	. . . .	. . . .	. . . .	. . . .
E	. . . .	. . . .	. . . .	. . . .
F	. . . .	. . . .	. . . .	. . . .

PHASE TIMING

Phase (2-2)	-1-	-2- *	-3-	-4-	-5- *	-6- *	-7-	-8- *
--- Walk 1 ---	0	10	0	10	0	7	0	10
Flash Don't Walk	0	10	0	10	0	16 ~~14~~	0	10
Minimum Green	10	10	10	10	5	10	10	5
Det Limit	10	20	10	10	10	20	10	10
Max Initial	10	30	10	10	10	30	10	10
Max Green 1	50	35	50	50	20	35	50	35
Max Green 2	50	50	50	50	50	50	50	50
Max Green 3	50	50	50	50	50	50	50	50
Extension	5.0	2.8	5.0	5.0	1.0	2.8	5.0	1.0
Maximum Gap	5.0	4.8	5.0	5.0	3.0	4.8	5.0	3.5
Minimum Gap	5.0	2.8	5.0	5.0	1.0	2.8	5.0	1.0
Add Per Vehicle	1.0	2.2	1.0	1.0	0.0	2.2	1.0	0.0
Reduce Gap By	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.1
Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9
Yellow	5.0	3.6	5.0	5.0	3.0	3.6	5.0	3.6
All-Red	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Ped/Bike (2-3)	**-1-**	**-2-**	**-3-**	**-4-**	**-5-**	**-6-**	**-7-**	**-8-**
--- Walk 2 ---	0	0	0	0	0	0	0	0
Delay/Early Walk	0	0	0	0	0	0	0	0
Solid Don't Walk	0	0	0	0	0	0	0	0
Bike Green	0	0	0	0	0	0	0	0
Bike All-Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

OVERLAP TIMING

Overlap (2-4)	A	B	C	D	E	F
Green	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	5.0	5.0	5.0	5.0	5.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Red Revert

Red Revert (2-5)	*
Time	3.0
All-Red Sec/Min (2-6)	
All-Red Sec/Min:	SEC

Max 2 Extension

Max/Gap Out (2-7)	
Max Cnt	0
Gap Cnt	0

Local Plan 1...9 (7-1) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Perm	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 1	Green Factor														
Plan 2	Green Factor														
Plan 3	Green Factor														
Plan 4	Green Factor														
Plan 5	Green Factor														
Plan 6	Green Factor														
Plan 7	Green Factor														
Plan 8	Green Factor														
Plan 9	Green Factor														

Local Plan 1...9 (7-1) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 1	....	....	....	....	....	....	....	....
Plan 2	....	....	....	....	....	....	....	....
Plan 3	....	....	....	....	....	....	....	....
Plan 4	....	....	....	....	....	....	....	....
Plan 5	....	....	....	....	....	....	....	....
Plan 6	....	....	....	....	....	....	....	....
Plan 7	....	....	....	....	....	....	....	....
Plan 8	....	....	....	....	....	....	....	....
Plan 9	....	....	....	....	....	....	....	....

Master Timer Sync (7-A)	
Enable in Plans	
1-9	....
11-19	....
21-29	....

Master Sub Master	
Input	
Output	

FREE PLAN PHASE FLAGS

(7-E) Free	
Lag	Omit
.2.4.6.8	....
Veh Min	Veh Max
.2...6..	....
Ped	Bike
....	....
Cond	Cond Grn
....	10

MANUAL COMMANDS

Manual Plan (4-1)	
Plan	OffSet
	A

Plan: 1-9
15 or 254 = Flash
14 or 255 = Free
Offset A, B, or C

Special Function Override (4-2)			
#	Control	#	Control
1	NORMAL	3	NORMAL
2	NORMAL	4	NORMAL

Detector Reset	(4-3)
Local Manual (4-4)	OFF

Local Plan 11...19 (7-2) TIMING DATA

COORDINATION

					[Offsets]			Green Factors or Press [F] to Select Force-Off							
		Cycle	Multi	Perm	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 11	Green Factor														
Plan 12	Green Factor														
Plan 13	Green Factor														
Plan 14	Green Factor														
Plan 15	Green Factor														
Plan 16	Green Factor														
Plan 17	Green Factor														
Plan 18	Green Factor														
Plan 19	Green Factor														

Local Plan 11...19 (7-2) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 11	....	....	....	....	....	....	....	....
Plan 12	....	....	....	....	....	....	....	....
Plan 13	....	....	....	....	....	....	....	....
Plan 14	....	....	....	....	....	....	....	....
Plan 15	....	....	....	....	....	....	....	....
Plan 16	....	....	....	....	....	....	....	....
Plan 17	....	....	....	....	....	....	....	....
Plan 18	....	....	....	....	....	....	....	....
Plan 19	....	....	....	....	....	....	....	....

Local Plan 21...29 (7-3) TIMING DATA COORDINATION

		Cycle	Multi	Perm	[Offsets] A	B	C	Green Factors or Press [F] to Select Force-Off -1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 21	Green Factor														
Plan 22	Green Factor														
Plan 23	Green Factor														
Plan 24	Green Factor														
Plan 25	Green Factor														
Plan 26	Green Factor														
Plan 27	Green Factor														
Plan 28	Green Factor														
Plan 29	Green Factor														

Local Plan 21...29 (7-3) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 21	....	....	....	....	....	....	....	....
Plan 22	....	....	....	....	....	....	....	....
Plan 23	....	....	....	....	....	....	....	....
Plan 24	....	....	....	....	....	....	....	....
Plan 25	....	....	....	....	....	....	....	....
Plan 26	....	....	....	....	....	....	....	....
Plan 27	....	....	....	....	....	....	....	....
Plan 28	....	....	....	....	....	....	....	....
Plan 29	....	....	....	....	....	....	....	....

DETECTORS

Detector Attributes (5-1)

Det	Type	Phases *	Lock	Slot
1	COUNT+CALL+EXTEND	1.......	NO	I1U
2	COUNT+CALL+EXTEND	1.......	NO	I1L
3	COUNT	.2......	NO	I2U
4	COUNT	.2......	NO	I2L
5	CALL+EXTEND	.2......	NO	I3U
6	CALL+EXTEND	.2......	NO	I3L
7	LIMITED	.2......	NO	I4U
8	COUNT+CALL+EXTEND	.2......	NO	I4L
9	LIMITED	.2......	NO	I5U
10	LIMITED	.2......	NO	I5L
11	COUNT+CALL+EXTEND	...4....	NO	I6U
12	COUNT+CALL+EXTEND	...4....	NO	I6L
13	COUNT+CALL+EXTEND	...4....	NO	I7U
14	CALL+EXTEND	...4....	NO	I7L
15	LIMITED	...4....	NO	I8U
16	COUNT+CALL+EXTEND	...4....	NO	I8L
17	COUNT+CALL+EXTEND	1.......	NO	I9U
18	COUNT+CALL+EXTEND	..3.....	NO	I9L
19	COUNT+CALL+EXTEND	.2......	NO	I10U
20	COUNT+CALL+EXTEND	...4....	NO	I10L
21	COUNT+CALL+EXTEND	....5...	NO	J1U
22	COUNT+CALL+EXTEND	....5...	NO	J1L
23	COUNT	.....6..	NO	J2U
24	COUNT	.....6..	NO	J2L
25	CALL+EXTEND	.....6..	NO	J3U
26	CALL+EXTEND	.....6..	NO	J3L
27	LIMITED	.....6..	NO	J4U
28	COUNT+CALL+EXTEND	.....6..	NO	J4L
29	LIMITED	.....6..	NO	J5U
30	LIMITED	.....6..	NO	J5L
31	COUNT+CALL+EXTEND	8	NO	J6U
32	COUNT+CALL+EXTEND	8	NO	J6L
33	COUNT+CALL+EXTEND	8	NO	J7U
34	CALL+EXTEND	8	NO	J7L
35	CALL+EXTEND	8	NO	J8U
36	CALL+EXTEND	8	NO	J8L
37	COUNT+CALL+EXTEND	....5...	NO	J9U
38	COUNT+CALL+EXTEND	......7.	NO	J9L
39	COUNT+CALL+EXTEND	.....6..	NO	J10U
40	COUNT+CALL+EXTEND	8	NO	J10L
41	PEDESTRIAN	.2......	NO	I 12U
42	PEDESTRIAN	...4....	NO	I 12L
43	PEDESTRIAN	.....6..	NO	I 13U
44	PEDESTRIAN	8	NO	I 13L

Detector Configuration (5-2)

Det	Delay	Extend	Recall	Port
1			10	3.2
2			10	7.2
3			10	1.1
4			10	1.5
5			10	4.5
6			10	6.2
7			10	2.1
8			10	7.4
9			10	3.4
10			10	7.6
11			10	1.3
12			10	1.7
13			10	4.7
14			10	6.4
15			10	2.3
16			10	7.8
17			10	3.6
18			10	3.8
19			10	4.1
20			10	4.2
21			10	3.1
22			10	7.1
23			10	1.2
24			10	1.6
25			10	4.6
26			10	6.3
27			10	2.2
28			10	7.3
29			10	3.3
30			10	7.5
31	1	2.5	10	1.4
32			10	1.8
33			10	4.8
34	5		10	6.5
35			10	2.4
36			10	7.7
37			10	3.5
38			10	3.7
39			10	4.3
40			10	4.4
41			10	5.1
42			10	5.3
43			10	5.2
44			10	5.4

Failure Times(5-3)	Minutes
Maximum On Time	
Fail Reset Time	

Failure Override (5-4)	
Detectors 1-8	....
Detectors 9-16	....
Detectors17-24	....
Detectors 25-32	....
Detectors 33-40	....
Detectors 41-44	....

System Detector Assignment (5-5)

Sys Det	1	2	3	4	5	6	7	8
Det Num								
Sys Det	9	10	11	12	13	14	15	16
Det Num								

CIC Operation (5-6-1)	
Enable in Plans	....

CIC Values (5-6-2)	Volume	Occupancy	Demand
Smoothing	0.66	0.66	0.66
Multiplier	4.0	0.33	
Exponent	0.50	1.00	

Detector-to-Phase Assignment (5-6-3)

Sys Det	1	2	3	4	5	6	7	8
Phase								
Sys Det	9	10	11	12	13	14	15	16
Phase								

Input File Port-Bit Assignments

332 Cabinet - For Reference Only

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
I-	3.2	1.1	4.5	2.1	3.4	1.3	4.7	2.3	3.6	4.1	6.6	5.1	5.2	6.7
	7.2	1.5	6.2	7.4	7.6	1.7	6.4	7.8	3.8	4.2	2.7	5.3	5.4	6.8
J-	3.1	1.2	4.6	2.2	3.3	1.4	4.8	2.4	3.5	4.3	2.8	5.5	5.6	2.5
	7.1	1.6	6.3	7.3	7.5	1.8	6.5	7.7	3.7	4.4	6.1	5.7	5.8	2.6

TOD SCHEDULE

Table 1 (8-2-1)			Table 2 (8-2-2)			Table 3 (8-2-3)			Table 4 (8-2-4)			Table 5 (8-2-5)			Table 6 (8-2-6)		
Time	Plan	OS	Time	Plan	OS	Time	Plan	OS	Time	Plan	OS	Time	Plan	OS	Time	Plan	OS
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A
		A			A			A			A			A			A

WEEKDAY ASSIGNMENT

Weekday Table Assignments (8-2-7)						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	1	1	1	1	2	2

HOLIDAY TABLES

Floating Holiday Table (8-2-8)

#	Mnth	Week	DOW	Table
1			....	
2			....	
3			....	
4			....	
5			....	
6			....	
7			....	
8			....	
9			....	
10			....	
11			....	
12			....	
13			....	
14			....	
15			....	
16			....	

Fixed Holiday Table (8-2-9)

#	Mnth	Day	DOW	Table
1			....	
2			....	
3			....	
4			....	
5			....	
6			....	
7			....	
8			....	
9			....	
10			....	
11			....	
12			....	
13			....	
14			....	
15			....	
16			....	

Solar Clock Data (8-4)

North Latitude	34
West Longitude	118
Local Time Zone	8

Sabbatical Clock (8-5)

Hebrew	Ped Recall
Sabbath	....
Holiday	....

Daylight Saving (8-6)

Enabled	YES

TOD FUNCTIONS

TOD Functions (8-3) *

#	Start	End	DOW	Action	Phases
1	0645	0740	M T W T F . .	17	. . . . . 6 . .
2			....		....
3			....		....
4			....		....
5			....		....
6			....		....
7			....		....
8			....		....
9			....		....
10			....		....
11			....		....
12			....		....
13			....		....
14			....		....
15			....		....
16			....		....

Action Codes:
0. None
1. Permitted
2. Restricted
4. Veh Min Recall
5. Veh Max Recall
6. Ped Recall
7. Bike Recall
8. Red Lock
9. Yellow Lock
10. Force/Max Lock
11.Double Entry
12. Y-Coord C
13. Y-Coord D
14. Free
15. Flashing
16. Walk 2
17. Max Green 2
18. Max Green 3
19. Rest in Walk
20. Rest in Red
21. Free Lag Phases
22. Special Functions
23. Truck Preempt
24. Conditional Service
25. Conditional Service
26. Leading Ped
27. Traffic Actuated Max 2
41. Protected Permissive
42. Protected Permissive

Action Code = Phases added to normal setting
100+Action Code = Phases removed
200+Action Code = Phases replaced

COMMUNICATIONS

C2 (6-1-1)	*
Address	1
Protocol	AB3418
Limit Access	
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

C20 (6-1-2)	
Address	
Protocol	AB3418
Limit Access	
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

C21 (6-1-3)	
Address	
Protocol	AB3418
Limit Access	
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

Limit Access:
0-None
1-Status Only
2-Status, Set Pattern, Time
3-Status, Set Pattern, Time, Manual Plan

SOFT LOGIC

Soft Logic (6-2)

#	Data	OP	Data	OP	Data	OP	Data
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							

*Refer to User's Manual for Data and OP Codes

CALLBACK NUMBERS

Callback Numbers (6-3...3)	
Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

NETWORK

Network (6-4)	
Address	
Protocol	AB3418
Port	27000
IP Mode	STATIC

IP Address	0 . 0 . 0 . 0
Netmask	255 . 255 . 255 . 0
Broadcast	0 . 0 . 0 . 254
Gateway	0 . 0 . 0 . 1

RAILROAD PREEMPTION

RR 1	(3-1-1)	Timing	Phase Flags (3-1-2)			Pedestrian Flags (3-1-3)			Overlap Flags (3-1-4)		
			Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
	Delay										
	Clear 1	10	.2..5...	....	....	....	....	.2.4.6.8	......	......	......
	Clear 2		....	....	....	....	....	....	......	......	......
	Clear 3		....	....	....	....	....	....	......	......	......
	Hold		....	....	12345678	....	....	....	......	......	ABCDEF
	Exit	5									
	Min Grn										
	Ped Clr										

Exit Parameters (3-1-5)

Phase Green	Overlap Green	Vehicle Recall	Ped Call
....	......	12345678	.2.4.6.8

Configuration (3-1-6)

Port	Gate Port	Latching	Power-Up
2.5	0.0	YES	FLASHING

RR 2	(3-2-1)	Timing	Phase Flags (3-2-2)			Pedestrian Flags (3-2-3)			Overlap Flags (3-2-4)		
			Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
	Delay										
	Clear 1	10	...4..7.	....	....	....	....	.2.4.6.8	......	......	......
	Clear 2		....	....	....	....	....	....	......	......	......
	Clear 3		....	....	....	....	....	....	......	......	......
	Hold		123..6..	....	....	.2...6..	....	...4...8	......	......	......
	Exit										
	Min Grn										
	Ped Clr										

Exit Parameters (3-2-5)

Phase Green	Overlap Green	Vehicle Recall	Ped Recall
....	......	...4..7.	....

Configuration (3-2-6)

Port	Gate Port	Latching	Power-up
2.6	0.0	YES	DARK

EMERGENCY VEHICLE PREEMPTION

EVA (3-A)	Preempt Timers			Phase Green	Overlap Green
	Delay	Clear	Max		
*		5	60	.2..5...	......

Port	Latching	Phase Termination
5.5	NO	ADVANCE

EVB (3-B)	Preempt Timers			Phase Green	Overlap Green
	Delay	Clear	Max		
		30	30	...4..7.	......

Port	Latching	Phase Termination
5.6	NO	ADVANCE

EVC (3-C)	Preempt Timers			Phase Green	Overlap Green
	Delay	Clear	Max		
*		5	60	1....6..	......

Port	Latching	Phase Termination
5.7	NO	ADVANCE

EVD (3-D)	Preempt Timers			Phase Green	Overlap Green
	Delay	Clear	Max		
*		5	60	..3....8	......

Port	Latching	Phase Termination
5.8	NO	ADVANCE

INPUTS

7 Wire I/C (2-1-5-1)					
		Input	Port	Input	Port
Enable	NO	R1	3.8	Free	3.6
Max ON		R2	3.5	D2	2.8
Max OFF		R3	3.7	D3	6.1

Manual Control (2-1-5-2)	
Input	Port
Manual Advance	6.6
Advance Enable	6.6

Cabinet Status (2-1-5-3)	
Input	Port
Flash Bus	
Door Ajar	
Flash Sense	6.7
Stop Time	6.8

Special Function (2-1-5-4)	
Input	Port
1	
2	
3	
4	

Battery Backup (2-1-5-5) *	
Port	Operation
2.7	FLASHING

Y-Coordination (2-1-5-6)	
Port C	Port D
6.1	2.8

OUTPUTS

Loadswitch Assignments (2-1-6)							+
A	1	2	22	3	4	24	9
B	5	6	26	7	8	28	10
X	13	14	0	11	12	0	0

Loadswitch Codes:

0 Unused (no output)
1-8 Vehicle 1-8
9-14 Overlap A-F
21-28 Ped 1-8
41-47 Special Functions
41 Protected Permissive Flashing Phase 1
43 Protected Permissive Flashing Phase 3
45 Protected Permissive Flashing Phase 5
47 Protected Permissive Flashing Phase 7
51-57 Special Functions
71-72 Seven Wire I/C

+ middle output of loadswitches 3 and 6 Channel 9 and 10

YELLOW YIELD COORDINATION

Y-Coord Plans (7-C,D)	Long Grn	No Grn	Offset	Perm	Force-Offs -1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-	Coord	Lag	Min Recall	Restricted
Plan C													.2...6..	.2.4.6.8	....	....
Plan D													.2...6..	.2.4.6.8	....	....

TRANSIT PRIORITY

Local Plans (3-E) 1...9 11...19		Early Green	Green Extend	Inhibit Cycles	Phase 1 Minimum	Phase 2 Minimum	Phase 3 Minimum	Phase 4 Minimum	Phase 5 Minimum	Phase 6 Minimum	Phase 7 Minimum	Phase 8 Minimum
Plan 1	Green Factor											
Plan 2	Green Factor											
Plan 3	Green Factor											
Plan 4	Green Factor											
Plan 5	Green Factor											
Plan 6	Green Factor											
Plan 7	Green Factor											
Plan 8	Green Factor											
Plan 9	Green Factor											
Plan 11	Green Factor											
Plan 12	Green Factor											
Plan 13	Green Factor											
Plan 14	Green Factor											
Plan 15	Green Factor											
Plan 16	Green Factor											
Plan 17	Green Factor											
Plan 18	Green Factor											
Plan 19	Green Factor											

Transit Priority Configuration (3-E-A)				Indicator Output	
Enable in Plans		Input	Type	Stop	Go
Plan 1-9	....	0.0	OPT	0	0
Plan 11-19	....	0.0	OPT	0	0

Queue Jump (3-E-B)	
Grn Hold	Hold Phase
	....
	....

Free Plans (3-E-E)	
Max Grn Hold	Hold Phase
	....

Access Utilities (9-5)	
Password	***
Timeout	30

TRUCK PRIORITY

Truck Priority (3-F)	Passage	CarryOver	Clearance	Next Priority	Phase Green	Det 2 Port	Det 3 Port	Det 4 Port	Sign Output	Slave Input	Slave Output
					....	0.0	0.0	0.0	0	0.0	0

Departm[illegible] of Transportation, California Caltrans 2070 Controll[illegible] [illegible]iming Chart TSCP 2.20 [illegible]GE 1

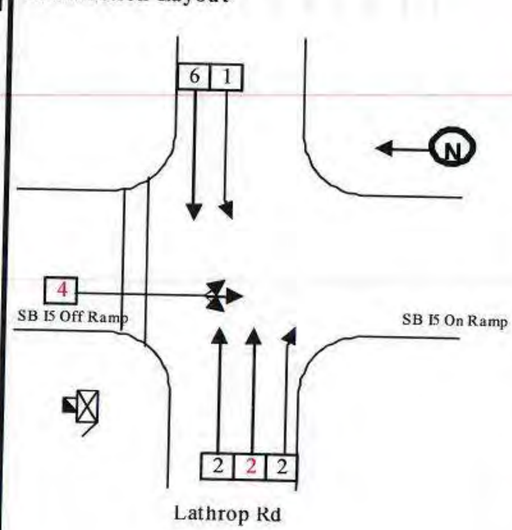
Location: SJ - 005 - R017.520 SB @ LATHROP ROAD
System: 2070 v2.20
Master At:
District: 10
I/C:
Designed By: NV
Installed By:
Service Info:

Timing Change: Date Start: Date End: Designed: Installed:

PHASE		FLASH
1)	LT: WB LATHROP TO SB I5 ONRAMP	[ ]
2)	EB LATHROP ROAD	[ ]
3)		[ ]
4)	SB I5 OFFRAMP	[ ]
5)		[ ]
6)	WB LATHROP ROAD	[ ]
7)		[ ]
8)		[ ]

OVERLAP		
A)		[ ]
B)		[ ]
C)		[ ]
D)		[ ]
E)		[ ]
F)		[ ]

Intersection Layout



Intersection Layout

1	2	3	4	5	6	7	8	9	10	11	12	13	14
L1 S234	L1 A	L1 A	L1 S234	L2 S23	L1 S234	L1 1	L1 S234	L1 S1					
1	2	2	2	2	2	4	4	1	2		P 2	P 6	flh
1	2	2	2	2	2	4	4	4	4	BT FL	P 4	P 8	st
	L2 A	L123 1	L1 S1	L2 S1	L1 S1	L1 S1	L1 S1L	L1 S1R					
	L1 A		L1 S234										
5	6	6	6	7	8	8	8	5	6		(2,5) eva	(4,7) evb	rr1
5	6	6	6	7	8	8	8	7	8		evc (1,6)	evd (3,8)	rr2
	L1 1		L1 S1										

Input File

1	2	3	4	5	6
1	2	2P	3	4	4P
5	6	6P	7	8	8P

Output File

Comments and Notes:
TURN ON: 12/6/2012

RAM Checksum

Page 2: 0FA8	Page 8: 85AF
Page 3: 523C	Page 9: 2B09
Page 4: F29E	Page 10: 8564
Page 5: 191A	Page 11: DC1B
Page 6: 191A	Page 12: EF20
Page 7: D83B	Page 13: 86F7

CONFIGURATION PHASE FLAGS

Phases (2-1-1-1)	*
Permitted	1 2 . 4 . 6 . .
Restricted	. . . .

Phase Recalls (2-1-1-2)	
Vehicle Min	. 2 . . . 6 . .
Vehicle Max	. . . .
Pedestrian	. . . .
Bicycle	. . . .

Phase Locks (2-1-1-3)	*
Red	. . . .
Yellow	. . . .
Force/Max	. . . .

Phase Features (2-1-1-4)	
Double Entry	. . . .
Rest In Walk	. . . .
Rest In Red	. . . .
Walk 2	. . . .
Max Green 2	. . . .
Max Green 3	. . . .

Startup (2-1-1-5)	*
First Green Phases	. 2 . . . 6 . .
Yellow Start Phases	. . . 4 . . . .
Vehicle Calls	1 2 . 4 . 6 . .
Pedestrian Calls	. . . . . 6 . .
Yellow Start Overlaps	. . . . . .
Startup All-Red	5.0

Call To Phase (2-1-2-1)		Omit On Green	
1	. . . .	1	. . . .
2	. . . .	2	. . . .
3	. . . .	3	. . . .
4	. . . .	4	. . . .
5	. . . .	5	. . . .
6	. . . .	6	. . . .
7	. . . .	7	. . . .
8	. . . .	8	. . . .

Flashing Colors (2-1-2-2)	
Yellow Flash Phases	. . . .
Yellow Flash Overlap	. . . . . .
Flash In Red Phases	. . . .
Flash In Red Overlap	. . . . . .

Special Operation (2-1-2-3)	
Single Exit Phase	. . . .
Driveway Signal Phases	. . . .
Driveway Signal Overlaps	. . . . . .
Leading Ped Phases	. . . .

Protected Permissive (2-1-2-4)	
Protected Permissive	. . . .

Pedestrian (2-1-3)	*
P1	. . . .
P2	. . . .
P3	. . . .
P4	. . . .
P5	. . . .
P6	. . . . . 6 . .
P7	. . . .
P8	. . . .

Overlap (2-1-4)

Overlap	Parent	Omit	No Start	Not
A	. . . .	. . . .	. . . .	. . . .
B	. . . .	. . . .	. . . .	. . . .
C	. . . .	. . . .	. . . .	. . . .
D	. . . .	. . . .	. . . .	. . . .
E	. . . .	. . . .	. . . .	. . . .
F	. . . .	. . . .	. . . .	. . . .

PHASE TIMING

Phase (2-2)	-1- *	-2- *	-3-	-4- *	-5-	-6- *	-7-	-8-
--- Walk 1 ---	0	10	0	10	0	7	0	10
Flash Don't Walk	0	10	0	10	0	16	0	10
Minimum Green	5	10	10	5	10	10	10	10
Det Limit	10	20	10	10	10	20	10	10
Max Initial	10	30	10	10	10	30	10	10
Max Green 1	20	35	50	35	50	35	50	50
Max Green 2	50	50	50	50	50	50	50	50
Max Green 3	50	50	50	50	50	50	50	50
Extension	1.0	2.8	5.0	1.0	5.0	2.8	5.0	5.0
Maximum Gap	3.0	4.8	5.0	3.5	5.0	4.8	5.0	5.0
Minimum Gap	1.0	2.8	5.0	1.0	5.0	2.8	5.0	5.0
Add Per Vehicle	0.0	2.2	1.0	0.0	1.0	0.0	1.0	1.0
Reduce Gap By	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.0
Reduce Every	1.0	1.0	1.0	0.9	1.0	1.0	1.0	1.0
Yellow	3.0	3.6	5.0	3.6	5.0	3.6	5.0	5.0
All-Red	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Ped/Bike (2-3)	**-1-**	**-2-**	**-3-**	**-4-**	**-5-**	**-6-**	**-7-**	**-8-**
--- Walk 2 ---	0	0	0	0	0	0	0	0
Delay/Early Walk	0	0	0	0	0	0	0	0
Solid Don't Walk	0	0	0	0	0	0	0	0
Bike Green	0	0	0	0	0	0	0	0
Bike All-Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

OVERLAP TIMING

Overlap (2-4)	A	B	C	D	E	F
Green	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	5.0	5.0	5.0	5.0	5.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Red Revert

Red Revert (2-5)	*
Time	2.0
All-Red Sec/Min (2-6)	
All-Red Sec/Min:	SEC

Max 2 Extension

Max/Gap Out (2-7)	
Max Cnt	0
Gap Cnt	0

Local Plan 1...9 (7-1) TIMING DATA — COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Perm	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 1	Green Factor														
Plan 2	Green Factor														
Plan 3	Green Factor														
Plan 4	Green Factor														
Plan 5	Green Factor														
Plan 6	Green Factor														
Plan 7	Green Factor														
Plan 8	Green Factor														
Plan 9	Green Factor														

Local Plan 1...9 (7-1) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 1	....	....	....	....	....	....	....	....
Plan 2	....	....	....	....	....	....	....	....
Plan 3	....	....	....	....	....	....	....	....
Plan 4	....	....	....	....	....	....	....	....
Plan 5	....	....	....	....	....	....	....	....
Plan 6	....	....	....	....	....	....	....	....
Plan 7	....	....	....	....	....	....	....	....
Plan 8	....	....	....	....	....	....	....	....
Plan 9	....	....	....	....	....	....	....	....

Master Timer Sync (7-A)	
	Enable in Plans
1-9	....
11-19	....
21-29	....

Master Sub Master	
Input	
Output	

FREE PLAN PHASE FLAGS

(7-E) Free	
Lag	Omit
.2.4.6.8	....
Veh Min	Veh Max
.2...6..	....
Ped	Bike
....	....
Cond	Cond Grn
....	10

MANUAL COMMANDS

Manual Plan (4-1)	
Plan	OffSet
	A

Plan: 1-9
15 or 254 = Flash
14 or 255 = Free
Offset A, B, or C

Special Function Override (4-2)			
#	Control	#	Control
1	NORMAL	3	NORMAL
2	NORMAL	4	NORMAL

Detector Reset	(4-3)
Local Manual (4-4)	OFF

Local Plan 11...19 (7-2) TIMING DATA

COORDINATION

					[Offsets]			Green Factors or Press [F] to Select Force-Off							
		Cycle	Multi	Perm	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 11	Green Factor														
Plan 12	Green Factor														
Plan 13	Green Factor														
Plan 14	Green Factor														
Plan 15	Green Factor														
Plan 16	Green Factor														
Plan 17	Green Factor														
Plan 18	Green Factor														
Plan 19	Green Factor														

Local Plan 11...19 (7-2) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 11	....	....	....	....	....	....	....	....
Plan 12	....	....	....	....	....	....	....	....
Plan 13	....	....	....	....	....	....	....	....
Plan 14	....	....	....	....	....	....	....	....
Plan 15	....	....	....	....	....	....	....	....
Plan 16	....	....	....	....	....	....	....	....
Plan 17	....	....	....	....	....	....	....	....
Plan 18	....	....	....	....	....	....	....	....
Plan 19	....	....	....	....	....	....	....	....

Local Plan 21...29 (7-3) TIMING DATA COORDINATION

					[Offsets]			Green Factors or Press [F] to Select Force-Off							
		Cycle	Multi	Perm	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 21	Green Factor														
Plan 22	Green Factor														
Plan 23	Green Factor														
Plan 24	Green Factor														
Plan 25	Green Factor														
Plan 26	Green Factor														
Plan 27	Green Factor														
Plan 28	Green Factor														
Plan 29	Green Factor														

Local Plan 21...29 (7-3) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 21	....	....	....	....	....	....	....	....
Plan 22	....	....	....	....	....	....	....	....
Plan 23	....	....	....	....	....	....	....	....
Plan 24	....	....	....	....	....	....	....	....
Plan 25	....	....	....	....	....	....	....	....
Plan 26	....	....	....	....	....	....	....	....
Plan 27	....	....	....	....	....	....	....	....
Plan 28	....	....	....	....	....	....	....	....
Plan 29	....	....	....	....	....	....	....	....

DETECTORS

Detector Attributes (5-1)			*	Slot	Detector Configuration (5-2)				*
Det	Type	Phases	Lock		Det	Delay	Extend	Recall	Port
1	COUNT+CALL+EXTEND	1.......	NO	I1U	1			10	3.2
2	COUNT+CALL+EXTEND	1.......	NO	I1L	2			10	7.2
3	COUNT	.2......	NO	I2U	3			10	1.1
4	LIMITED	.2......	NO	I2L	4			10	1.5
5	COUNT	.2......	NO	I3U	5			10	4.5
6	CALL+EXTEND	.2......	NO	I3L	6			10	6.2
7	LIMITED	.2......	NO	I4U	7			10	2.1
8	COUNT+CALL+EXTEND	.2......	NO	I4L	8			10	7.4
9	LIMITED	.2......	NO	I5U	9			10	3.4
10	LIMITED	.2......	NO	I5L	10			10	7.6
11	LIMITED	.2......	NO	I6U	11			10	1.3
12	LIMITED	.2......	NO	I6L	12			10	1.7
13	COUNT+CALL+EXTEND	...4....	NO	I7U	13		2.5	10	4.7
14	CALL+EXTEND	...4....	NO	I7L	14			10	6.4
15	CALL+EXTEND	...4....	NO	I8U	15			10	2.3
16	CALL+EXTEND	...4....	NO	I8L	16			10	7.8
17	COUNT+CALL+EXTEND	1.......	NO	I9U	17			10	3.6
18	COUNT+CALL+EXTEND	...4....	NO	I9L	18			10	3.8
19	COUNT+CALL+EXTEND	.2......	NO	I10U	19			10	4.1
20	COUNT+CALL+EXTEND	...4....	NO	I10L	20			10	4.2
21	COUNT+CALL+EXTEND	....5...	NO	J1U	21			10	3.1
22	COUNT+CALL+EXTEND	....5...	NO	J1L	22			10	7.1
23	COUNT	.....6..	NO	J2U	23			10	1.2
24	CALL+EXTEND	.....6..	NO	J2L	24			10	1.6
25	COUNT+CALL+EXTEND	.....6..	NO	J3U	25			10	4.6
26	CALL+EXTEND	.....6..	NO	J3L	26			10	6.3
27	LIMITED	.....6..	NO	J4U	27			10	2.2
28	COUNT+CALL+EXTEND	.....6..	NO	J4L	28			10	7.3
29	COUNT+CALL+EXTEND	......7.	NO	J5U	29			10	3.3
30	COUNT+CALL+EXTEND	......7.	NO	J5L	30			10	7.5
31	COUNT+CALL+EXTEND	8	NO	J6U	31			10	1.4
32	COUNT+CALL+EXTEND	8	NO	J6L	32			10	1.8
33	COUNT+CALL+EXTEND	8	NO	J7U	33			10	4.8
34	CALL+EXTEND	8	NO	J7L	34			10	6.5
35	LIMITED	8	NO	J8U	35			10	2.4
36	COUNT+CALL+EXTEND	8	NO	J8L	36			10	7.7
37	COUNT+CALL+EXTEND	....5...	NO	J9U	37			10	3.5
38	COUNT+CALL+EXTEND	......7.	NO	J9L	38			10	3.7
39	COUNT+CALL+EXTEND	.....6..	NO	J10U	39			10	4.3
40	COUNT+CALL+EXTEND	8	NO	J10L	40			10	4.4
41	PEDESTRIAN	.2......	NO	I 12U	41			10	5.1
42	PEDESTRIAN	...4....	NO	I 12L	42			10	5.3
43	PEDESTRIAN	.....6..	NO	I 13U	43			10	5.2
44	PEDESTRIAN	8	NO	I 13L	44			10	5.4

Failure Times(5-3)	Minutes
Maximum On Time	
Fail Reset Time	

Failure Override (5-4)	
Detectors 1-8	....
Detectors 9-16	....
Detectors17-24	....
Detectors 25-32	....
Detectors 33-40	....
Detectors 41-44	....

System Detector Assignment (5-5)

Sys Det	1	2	3	4	5	6	7	8
Det Num								
Sys Det	9	10	11	12	13	14	15	16
Det Num								

CIC Operation (5-6-1)	
Enable in Plans	....

CIC Values (5-6-2)	Volume	Occupancy	Demand
Smoothing	0.66	0.66	0.66
Multiplier	4.0	0.33	
Exponent	0.50	1.00	

Detector-to-Phase Assignment (5-6-3)

Sys Det	1	2	3	4	5	6	7	8
Phase								
Sys Det	9	10	11	12	13	14	15	16
Phase								

Input File Port-Bit Assignments

332 Cabinet - For Reference Only

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
I-	3.2	1.1	4.5	2.1	3.4	1.3	4.7	2.3	3.6	4.1	6.6	5.1	5.2	6.7
	7.2	1.5	6.2	7.4	7.6	1.7	6.4	7.8	3.8	4.2	2.7	5.3	5.4	6.8
J-	3.1	1.2	4.6	2.2	3.3	1.4	4.8	2.4	3.5	4.3	2.8	5.5	5.6	2.5
	7.1	1.6	6.3	7.3	7.5	1.8	6.5	7.7	3.7	4.4	6.1	5.7	5.8	2.6

TOD SCHEDULE

Table 1 (8-2-1)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 2 (8-2-2)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 3 (8-2-3)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 4 (8-2-4)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 5 (8-2-5)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 6 (8-2-6)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

WEEKDAY ASSIGNMENT

Weekday Table Assignments (8-2-7)						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	1	1	1	1	2	2

HOLIDAY TABLES

Floating Holiday Table (8-2-8)

#	Mnth	Week	DOW	Table
1			....	
2			....	
3			....	
4			....	
5			....	
6			....	
7			....	
8			....	
9			....	
10			....	
11			....	
12			....	
13			....	
14			....	
15			....	
16			....	

Fixed Holiday Table (8-2-9)

#	Mnth	Day	DOW	Table
1			....	
2			....	
3			....	
4			....	
5			....	
6			....	
7			....	
8			....	
9			....	
10			....	
11			....	
12			....	
13			....	
14			....	
15			....	
16			....	

Solar Clock Data (8-4)	
North Latitude	34
West Longitude	118
Local Time Zone	8

Sabbatical Clock (8-5)	
Hebrew	Ped Recall
Sabbath	....
Holiday	....

Daylight Saving (8-6)	
Enabled	YES

TOD FUNCTIONS

TOD Functions (8-3) *

#	Start	End	DOW	Action	Phases
1	0645	0740	M T W T F . .	17	. . . . . 6 . .
2	0600	2000	M.T.W.T. .	15	1.2. .4. 6
3			....		....
4			....		....
5			....		....
6			....		....
7			....		....
8			....		....
9			....		....
10			....		....
11			....		....
12			....		....
13			....		....
14			....		....
15			....		....
16			....		....

Action Codes:
0. None
1. Permitted
2. Restricted
4. Veh Min Recall
5. Veh Max Recall
6. Ped Recall
7. Bike Recall
8. Red Lock
9. Yellow Lock
10. Force/Max Lock
11.Double Entry
12. Y-Coord C
13. Y-Coord D
14. Free
15. Flashing
16. Walk 2
17. Max Green 2
18. Max Green 3
19. Rest in Walk
20. Rest in Red
21. Free Lag Phases
22. Special Functions
23. Truck Preempt
24. Conditional Service
25. Conditional Service
26. Leading Ped
27. Traffic Actuated Max 2
41. Protected Permissive
42. Protected Permissive

Action Code = Phases added to normal setting
100+Action Code = Phases removed
200+Action Code = Phases replaced

COMMUNICATIONS

C2 (6-1-1)	*
Address	2
Protocol	AB3418
Limit Access	
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

C20 (6-1-2)	
Address	
Protocol	AB3418
Limit Access	
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

C21 (6-1-3)	
Address	
Protocol	AB3418
Limit Access	
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

Limit Access:
0-None
1-Status Only
2-Status, Set Pattern, Time
3-Status, Set Pattern, Time, Manual Plan

SOFT LOGIC

Soft Logic (6-2)							
#	Data	OP	Data	OP	Data	OP	Data
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							

*Refer to User's Manual for Data and OP Codes

CALLBACK NUMBERS

Callback Numbers (6-3...3)	
Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

NETWORK

Network (6-4)	
Address	
Protocol	AB3418
Port	27000
IP Mode	STATIC

IP Address	0	0	0	0
Netmask	255	255	255	0
Broadcast	0	0	0	254
Gateway	0	0	0	1

RAILROAD PREEMPTION

RR 1	(3-1-1)	Timing	Phase Flags (3-1-2)			Pedestrian Flags (3-1-3)			Overlap Flags (3-1-4)		
	Delay		Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
	Clear 1	10	.2..5...	....	....	....	....	.2.4.6.8	......	......	......
	Clear 2		....	....	....	....	....	....	......	......	......
	Clear 3		....	....	....	....	....	....	......	......	......
	Hold		....	....	12345678	....	....	....	......	......	......
	Exit	5				....	....	....	......	......	A B C D E F
	Min Grn										
	Ped Clr										

Exit Parameters (3-1-5)			
Phase Green	Overlap Green	Vehicle Recall	Ped Call
....	......	12345678	.2.4.6.8

Configuration (3-1-6)			
Port	Gate Port	Latching	Power-Up
2.5	0.0	YES	FLASHING

RR 2	(3-2-1)	Timing	Phase Flags (3-2-2)			Pedestrian Flags (3-2-3)			Overlap Flags (3-2-4)		
	Delay		Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
	Clear 1	10	...4..7.	....	....	....	....	.2.4.6.8	......	......	......
	Clear 2		....	....	....	....	....	....	......	......	......
	Clear 3		....	....	....	....	....	....	......	......	......
	Hold		123..6..	....	....	.2...6..	....	...4...8	......	......	......
	Exit										
	Min Grn										
	Ped Clr										

Exit Parameters (3-2-5)			
Phase Green	Overlap Green	Vehicle Recall	Ped Recall
....	......	...4..7.	....

Configuration (3-2-6)			
Port	Gate Port	Latching	Power-up
2.6	0.0	YES	DARK

EMERGENCY VEHICLE PREEMPTION

EVA (3-A)	Preempt Timers			Phase Green	Overlap Green
	Delay	Clear	Max		
*		5	60	.2..5...	......

Port	Latching	Phase Termination
5.5	NO	ADVANCE

EVB (3-B)	Preempt Timers			Phase Green	Overlap Green
	Delay	Clear	Max		
*		5	60	...4..7.	......

Port	Latching	Phase Termination
5.6	NO	ADVANCE

EVC (3-C)	Preempt Timers			Phase Green	Overlap Green
	Delay	Clear	Max		
*		5	60	1....6..	......

Port	Latching	Phase Termination
5.7	NO	ADVANCE

EVD (3-D)	Preempt Timers			Phase Green	Overlap Green
	Delay	Clear	Max		
		30	30	..3....8	......

Port	Latching	Phase Termination
5.8	NO	ADVANCE

INPUTS

		7 Wire I/C (2-1-5-1)			
		Input	Port	Input	Port
Enable	NO	R1	3.8	Free	3.6
Max ON		R2	3.5	D2	2.8
Max OFF		R3	3.7	D3	6.1

Manual Control (2-1-5-2)	
Input	Port
Manual Advance	6.6
Advance Enable	6.6

Cabinet Status (2-1-5-3)	
Input	Port
Flash Bus	
Door Ajar	
Flash Sense	6.7
Stop Time	6.8

Special Function (2-1-5-4)	
Input	Port
1	
2	
3	
4	

Battery Backup (2-1-5-5)	*
Port	Operation
2.7	FLASHING

Y-Coordination (2-1-5-6)	
Port C	Port D
6.1	2.8

OUTPUTS

Loadswitch Assignments (2-1-6)							+
A	1	2	22	3	4	24	9
B	5	6	26	7	8	28	10
X	13	14	0	11	12	0	0

Loadswitch Codes:

0 Unused (no output)
1-8 Vehicle 1-8
9-14 Overlap A-F
21-28 Ped 1-8
41-47 Special Functions
41 Protected Permissive Flashing Phase 1
43 Protected Permissive Flashing Phase 3
45 Protected Permissive Flashing Phase 5
47 Protected Permissive Flashing Phase 7
51-57 Special Functions
71-72 Seven Wire I/C

+ middle output of loadswitches 3 and 6 Channel 9 and 10

YELLOW YIELD COORDINATION

Y-Coord Plans (7-C,D)	Long Grn	No Grn	Offset	Perm	Force-Offs -1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-	Coord	Lag	Min Recall	Restricted
Plan C													.2...6..	.2.4.6.8	....	....
Plan D													.2...6..	.2.4.6.8	....	....

TRANSIT PRIORITY

Local Plans (3-E) 1...9 11...19		Early Green	Green Extend	Inhibit Cycles	Phase 1 Minimum	Phase 2 Minimum	Phase 3 Minimum	Phase 4 Minimum	Phase 5 Minimum	Phase 6 Minimum	Phase 7 Minimum	Phase 8 Minimum
Plan 1	Green Factor											
Plan 2	Green Factor											
Plan 3	Green Factor											
Plan 4	Green Factor											
Plan 5	Green Factor											
Plan 6	Green Factor											
Plan 7	Green Factor											
Plan 8	Green Factor											
Plan 9	Green Factor											
Plan 11	Green Factor											
Plan 12	Green Factor											
Plan 13	Green Factor											
Plan 14	Green Factor											
Plan 15	Green Factor											
Plan 16	Green Factor											
Plan 17	Green Factor											
Plan 18	Green Factor											
Plan 19	Green Factor											

Transit Priority Configuration (3-E-A)				Indicator Output	
Enable in Plans		Input	Type	Stop	Go
Plan 1-9	....	0.0	OPT	0	0
Plan 11-19	....	0.0	OPT	0	0

Queue Jump (3-E-B)	
Grn Hold	Hold Phase
	....
	....

Free Plans (3-E-E)	
Max Grn Hold	Hold Phase
	....

Access Utilities (9-5)	
Password	***
Timeout	30

TRUCK PRIORITY

Truck Priority (3-F)	Passage	CarryOver	Clearance	Next Priority	Phase Green	Det 2 Port	Det 3 Port	Det 4 Port	Sign Output	Slave Input	Slave Output
					....	0.0	0.0	0.0	0	0.0	0

(* = Coordination Recall)

Row	Plan	1	2	3	4	5	6	7	8	9	Row
	Plan Name --->										
0	Cycle Length										0
1	Phase 1 - ForceOff										1
2	Phase 2 - ForceOff										2
3	Phase 3 - ForceOff										3
4	Phase 4 - ForceOff										4
5	Phase 5 - ForceOff										5
6	Phase 6 - ForceOff										6
7	Phase 7 - ForceOff										7
8	Phase 8 - ForceOff										8
9	Ring Offset										9
A	Offset 1										A
B	Offset 2										B
C	Offset 3										C
D	Permissive										D
E	Hold Release										E
F	Zone Offset										F

Coordination <C Page>

	E	Row
		0
Plan 1 - Sync		1
Plan 2 - Sync		2
Plan 3 - Sync		3
Plan 4 - Sync		4
Plan 5 - Sync		5
Plan 6 - Sync		6
Plan 7 - Sync		7
Plan 8 - Sync		8
Plan 9 - Sync		9
Coord Ped *		A
NEMA Hold		B
		C
		D
		E
		F

Sync Phases <C Page>

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

Configuration <E Page>

	F
RR Overlap A - Phases	
RR Overlap B - Phases	
RR Overlap C - Phases	
RR Overlap D - Phases	
Ped 2P	2
Ped 6P	
Ped 4P	4
Ped 8P	
Yellow Flash Phases	
Overlap A - Phases	
Overlap B - Phases	
Overlap C - Phases	
Overlap D - Phases	
Restricted Phases	
Assign 5 Outputs	

Configuration <E Page>

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

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

Force-Off Adjust	

Coord Force-Off Adjust for Ped Service <C+D+F>

Transition Type	

TBC Transition <C+D+D>

Transition Type
0 = Shortway
Non-zero = Lengthen

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

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

Lag Phases <C Page>

B1 T RAMS
200

	PHASE TIMINGS, PREEMPT TIMINGS AND FLAGS																				
↓	Interval / Phase →	1	2	3	4	5	6	7	8	PREEMPT "E"		FLAGS "F"	ø 1	ø 2	ø 3	ø 4	ø 5	ø 6	ø 7	ø 8	
0	WALK	0	7	0	7	0	7	0	7	RR1 DLY		PERMIT	X	X	X	X	X	X	X	X	0
1	PED CLR	0	17	0	17	0	21	0	21	RR1 T/C		RED LK								4	1
2	MIN GRN	5	7	5	5	5	12	5	12	EV A DLY		YEL LK									2
3	TYPE 3	0	30	0	30	0	30	0	30	EV A HLD		VEH RC		X				X			3
4	ADD/VEH	0	1.2	0	1.2	0	1.2	0	1.2	EV B DLY		PED RC									4
5	PASSAGE	3.0	5.0	3.0	4.3	3.0	5.0	3.0	4.3	EV B HLD		PED ø		X		X		X		X	5
6	MAX GAP	3.0	5.0	3.0	4.3	3.0	5.0	3.0	4.3	EV C DLY		OVLP A									6
7	MIN GAP	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	EV C HLD		OVLP B									7
8	MAX EXT	20	30	20	40	20	30	20	40	EV D DLY		BBL ENT									8
9	MAX 2									EV D HLD		MAX 2									9
A										RR2 DLY		LAG ø		X		X		~~X~~		X	A
b										RR2 T/C		RED RST									b
C	RDU BY	0	0.1	0	0.1	0	0.1	0	0.1			COORD									C
d	RDU EVY	0	3.0	0	2.5	0	3.0	0	2.5			TYPE 3		X		X		X		X	d
E	YELLOW	3.0	5.0	3.0	4.3	3.0	5.0	3.0	4.3			STARTUP	X				X				E
F	RED	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0			KEY		/				/			F

~~Removed~~

TURN ON DATE ______

Post-it® Fax Note 7671	Date 11-4-98 # of pages ▶ 1
To M. SELLING	From W. ELIAS
Co./Dept. SJ CO.	Co. T.E.S.
Phone # 468-3038	Phone #
Fax # 468-2999	Fax # 47-8-?424

EEA 2,5
EEB 4,7
EEC 1,6
EED 3,8
EEE 1,3
EEF 2

CO.	ROUTE	POST MILE

AIRPORT WAY/LATHROP RD

EF5 2
EF6 6
EF7 [illegible]
EF8 8

10-0331 (8/79)

Rutherey / Airport Way PHASES IN USE 1, 2, 4, 6

PECON 2, 6

F-F-E 2, 6
F-F-F 4

	PHASE 1	2	4	6
0	0	0	0	0
1	0	0	0	0
2	4.0	4.0	4	4
3		3.0		30
4				
5	4.0	6.0	3.0	6.0
6	4.0	6.0	3.0	6.0
7	4.0	6.0	3.0	6.0
8	20	35	20	35
9	20	35	20	35
A				
B				
C	0.1	0.1	0.1	0.1
D	0.4	0.4	0.4	0.4
yellow E	3.5	5.0	5.0	5.0
RED F	1.0	1.0	1.0	1.0

TEMP TIMING SHEET

CALTRANS
[Mod]el 170 Controller
[Traf]fic Design Branch
[...] Type Coordination

C8 PROGRAM AIRPORT @ LOUISE

LOCATION ____ CO ____ RTE ____ P.M. ____

1/6

CONTROL CODE "F"

	INTERVAL	PHASE TIMING 1	2	3	4	5	6	7	8
0	WALK		7		7		7		7
1	DONT WALK		25		22		22		22
2	MIN GREEN	6	10	6	10	6	10	6	10
3	TYPE 3 DET								
4	ADDED/ACT								
5	PASSAGE	3	5	3	5	3	5	3	5
6	MAX GAP	3	5	3	5	3	5	3	5
7	MIN GAP	3	5	3	5	3	5	3	5
8	MAX EXT 1	25	30	20	40	25	30	20	48
9	MAX EXT 2								
A	MAX EXT 3								
B									
C	REDUCE BY	1	1	1	1	1	1	1	1
D	" EVERY	1	1	1	1	1	1	1	1
E	YELLOW	35	47	35	47	35	47	35	47
F	RED	1	1	1	1	1	1	1	1
	DATE								
	BY								

	C	D	E	F FLAGS
0	GAP SET	TB SEL	PRE-EMPTION / EV SEL	PZ PERMIT
1	MAX SET	TB MIN	RR1 CLR	RED LOCK
2	C SERV	TB MIN	EVA DLY	RED/YEL LOCK
3		PED SEL	EVA CLR	VEH RECALL
4		7W SEL	EVB DLY	PED RECALL
5		PERM SEL	EVB CLR	PED PHASES
6			EVC DLY	ARROW
7			EVC CLR	[illegible]
8		OFFSEEK	EVD DLY	DOUBLE ENTRY
9			EVD CLR	MAX PHASES
A	OLA GRN		EV MAX	LAG PHASES
B	OLB GRN		RR2 CLR	RED REST
C	OLC GRN		EV CLR TIMR	REST-IN-WALK
D	OLD GRN		EV DLY TIMR	MAX PHASES
E			RR CLR TIMR	YEL START UP
F	RAM ADD		EV MAX TIMR	FIRST PHASE

FOR OBSERVATION ONLY

PHASE AND STREET NAME

PHASE	1	WB LT
	2	→ EB THRU LOUISE
	3	NB LT
	4	↓ SB THRU AIRPORT
	5	
	6	← WB THRU LOUISE
	7	SB LT
	8	↑ NB THRU AIRPORT
OVERLAP	A	
	B	
	C	
	D	

F-9 COLUMN	
0	CLK RESET
9	YEAR
A	MONTH
B	DOM
C	DOW
D	HOUR
E	MINUTE
F	SECOND

F-0 COLUMN	
C	LONG POWER FAIL
D	SHORT POWER FAIL
E	MAX-VAR-INITIAL
F	RED REVERT

QUICNET

FIELD MASTER NO.

LOCAL NO.

NOTES AND REMARKS

PER DAVE V.
SET Ø3 8 TO RECALL
Ø8 30 SEC Ø3 15.0 SEC
Ø4, 7 SHALL STAY PED.

PAGE 1("F") 2("C") 3("D,E") 4("7,9") 5(DET.) 6(HOL.)

MASTER AT:

101

SIGNAL TIMINGS (C7 PROGRAM)
LOCATION: YOSEMITE/AIRPORT
FUNCTIONS AT "F"

INTERVAL	FUNCTION	1	2	3	4	5	6	7	8	E (PREEMPT)		
0	WALK		8		8		8		8	RR1 DLY	0	
1	FDW		~~11~~ 13		~~19~~ 21		~~11~~ 13	21	~~19~~	RR1 T/C	10	-20
2	MIN GRN	6	6	6	6		6	6	6	EVA DLY	0	
3	TYPE3		20		20		20		20	EVA HLD	1	-20
4	ADDED/VEH		2.3		2.0		2.3		2.0	EVB DLY	0	
5	PASSAGE	1.0	7.0	1.0	6.5	10	7.0	1.0	6.5	EVB HLD	1	-26
6	MAX GAP	1.0	8.0	1.0	7.5	10	8.0	1.0	7.5	EVC DLY	0	
7	MIN GAP	1.0	5.0	1.0	4.5	10	5.0	1.0	4.5	EVC HLD	1	-20
8	MAX I	30	~~50~~	30	~~50~~	30	50	30	~~50~~	EVD DLY	0	
9	MAX II		40		35				~~35~~	EVD HLD	1	20
A	MAX III									RR2 DLY	0	20
B										RR2 T/C	10	
C	REDUCE BY		0.1		0.1		0.1		0.1			
D	REDUCE EVERY		1.0		1.0		1.0		1.0			
E	YEL	3.0	4.4	3.0	4.0	3.0	4.4	3.0	4.0			
F	RED	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0			

F-0-E MAX INIT GRN 20
F-0-F RED REVERT 2.0

2/16/99

P.03

707 575 5888

SIGNAL TIMINGS (C7 PROGRAM)
LOCATION: YOSEMITE/AIRPORT
FUNCTIONS AT "F-F"

INT	FLAGS	1	2	3	4	5	6	7	8
0	PERMIT	X	X	X	X	X	X	X	X
1	RED LOCK								
2	YEL LOCK								
3	VEH RCL								
4	PED RCL								
5	PED PHASE		X		X		X		X
6	OL A								
7	OL B								
8	DBL ENTRY								
9	MAX 2								
A	LAG PHASE		X		X		X		X
B	RED REST								
C	COORD								
D	TYPE 3								
E	STARTUP				X				X
F	KEY		X				X		

PM TJKM

LOCATION ______________________ CO ____ RTE ______ PM ________ 5/6

DATE START:

DATE SUPERSEDED:

CONTROL CODE "D"

	INPUT SLOT	DELAY 1	CARRYOVER 3	INPUT SLOT	DELAY 2	CARRYOVER 4	
0	I1			J1			0
1	I2U			J2U			1
2	I2L			J2L			2
3	I3U			J3U			3
4	I3L			J3L			4
5	I4			J4			5
6	I 5			J5			6
7	I6U			J6U			7
8	I6L			J6L			8
9	I7U			J7U			9
A	I7L			J7L			A
B	I8			J8			B
C	I9U			J9U			C
D	I9L			J9L			D

CONTROL CODE "D" SYSTEM DETECTOR	0
1	
2	
3	
4	
5	
6	
7	
8	

DETECTOR COUNT SAMPLING PERIOD F-C-F = 120	
E-1-6	

CONTROL CODE "E"

(THIS PAGE @ FCF=123)

	INPUT FILE	C (PHASE DISPLAY)								D (FUNCTION DISPLAY)							
										RL	YL			EX	CO	CA	T3
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
0	I1	•												•	•		
1	I2U		•											•	•		
2	I2L		•											•	•		
3	I3U		•											•	•		
4	I3L		•											•			
5	I4		•													•	•
6	I5			•										•	•		
7	I6U				•									•	•		
8	I6L				•									•	•		
9	I7U				•									•	•		
A	I7L				•									•			
B	I8				•											•	•
C	I9U	•												•	•		
D	I9L			•										•	•		

	INPUT FILE	E (PHASE DISPLAY)								F (FUNCTION DISPLAY)							
										RL	YL			EX	CO	CA	T3
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
0	J1					•								•	•		
1	J2U						•							•	•		
2	J2L						•							•	•		
3	J3U						•							•	•		
4	J3L						•							•			
5	J4						•									•	•
6	J5							•						•	•		
7	J6U								•					•	•		
8	J6L								•					•	•		
9	J7U								•					•	•		
A	J7L								•					•			
B	J8								•							•	•
C	J9U					•								•	•		
D	J9L							•						•	•		

* = Default settings X = New Settings NOTE: Default settings (*) should remain unless replaced with new settings (X).

EXISTING CONDITIONS SYNCHRO RESULTS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	289	29	348	337	0	0	0	0	259	3	77
Future Volume (veh/h)	0	289	29	348	337	0	0	0	0	259	3	77
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1841	1841	1841	1841	0				1767	1767	1767
Adj Flow Rate, veh/h	0	344	35	414	401	0				308	4	92
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84				0.84	0.84	0.84
Percent Heavy Veh, %	0	4	4	4	4	0				9	9	9
Cap, veh/h	0	889	89	468	985	0				360	5	108
Arrive On Green	0.00	0.19	0.19	0.27	0.54	0.00				0.29	0.29	0.29
Sat Flow, veh/h	0	4809	464	1753	1841	0				1248	16	373
Grp Volume(v), veh/h	0	246	133	414	401	0				404	0	0
Grp Sat Flow(s),veh/h/ln	0	1675	1757	1753	1841	0				1637	0	0
Q Serve(g_s), s	0.0	3.4	3.4	11.8	6.8	0.0				12.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	3.4	3.4	11.8	6.8	0.0				12.2	0.0	0.0
Prop In Lane	0.00		0.26	1.00		0.00				0.76		0.23
Lane Grp Cap(c), veh/h	0	642	337	468	985	0				473	0	0
V/C Ratio(X)	0.00	0.38	0.39	0.88	0.41	0.00				0.85	0.00	0.00
Avail Cap(c_a), veh/h	0	2246	1178	671	1234	0				1097	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	18.4	18.5	18.4	7.2	0.0				17.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.7	7.6	0.2	0.0				1.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	1.3	5.2	2.0	0.0				4.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	18.8	19.1	26.0	7.5	0.0				19.3	0.0	0.0
LnGrp LOS	A	B	B	C	A	A				B	A	A
Approach Vol, veh/h		379			815						404	
Approach Delay, s/veh		18.9			16.9						19.3	
Approach LOS		B			B						B	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	17.9	14.6		19.7		32.5						
Change Period (Y+Rc), s	4.0	4.6		4.6		4.6						
Max Green Setting (Gmax), s	20.0	35.0		35.0		35.0						
Max Q Clear Time (g_c+I1), s	13.8	5.4		14.2		8.8						
Green Ext Time (p_c), s	0.1	2.3		1.0		2.4						
Intersection Summary												
HCM 6th Ctrl Delay			18.0									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	499	0	0	632	346	53	2	219	0	0	0
Future Volume (veh/h)	49	499	0	0	632	346	53	2	219	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1811	1811	0	0	1826	1826	1737	1737	1737			
Adj Flow Rate, veh/h	58	587	0	0	744	407	62	2	258			
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85			
Percent Heavy Veh, %	6	6	0	0	5	5	11	11	11			
Cap, veh/h	92	1996	0	0	983	536	73	2	305			
Arrive On Green	0.05	0.58	0.00	0.00	0.45	0.45	0.25	0.25	0.25			
Sat Flow, veh/h	1725	3532	0	0	2258	1181	290	9	1206			
Grp Volume(v), veh/h	58	587	0	0	595	556	322	0	0			
Grp Sat Flow(s),veh/h/ln	1725	1721	0	0	1735	1613	1505	0	0			
Q Serve(g_s), s	1.8	4.7	0.0	0.0	15.7	15.8	11.2	0.0	0.0			
Cycle Q Clear(g_c), s	1.8	4.7	0.0	0.0	15.7	15.8	11.2	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.73	0.19		0.80			
Lane Grp Cap(c), veh/h	92	1996	0	0	787	732	380	0	0			
V/C Ratio(X)	0.63	0.29	0.00	0.00	0.76	0.76	0.85	0.00	0.00			
Avail Cap(c_a), veh/h	627	2190	0	0	1104	1027	958	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	25.5	5.8	0.0	0.0	12.5	12.5	19.5	0.0	0.0			
Incr Delay (d2), s/veh	2.6	0.1	0.0	0.0	1.8	2.0	2.0	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.8	1.3	0.0	0.0	5.3	5.0	3.7	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.1	5.9	0.0	0.0	14.3	14.5	21.6	0.0	0.0			
LnGrp LOS	C	A	A	A	B	B	C	A	A			
Approach Vol, veh/h		645			1151			322				
Approach Delay, s/veh		7.9			14.4			21.6				
Approach LOS		A			B			C				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		36.5			6.9	29.6		18.5				
Change Period (Y+Rc), s		4.6			4.0	4.6		4.6				
Max Green Setting (Gmax), s		35.0			20.0	35.0		35.0				
Max Q Clear Time (g_c+I1), s		6.7			3.8	17.8		13.2				
Green Ext Time (p_c), s		4.0			0.0	7.2		0.8				

Intersection Summary			
HCM 6th Ctrl Delay			13.5
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	337	117	70	402	65	139	166	72	45	155	64
Future Volume (veh/h)	64	337	117	70	402	65	139	166	72	45	155	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1767	1767	1767	1737	1737	1737	1663	1663	1663
Adj Flow Rate, veh/h	74	392	136	81	467	76	162	193	84	52	180	74
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	8	8	8	9	9	9	11	11	11	16	16	16
Cap, veh/h	95	670	567	104	566	92	207	284	124	71	279	236
Arrive On Green	0.06	0.38	0.38	0.06	0.38	0.38	0.13	0.25	0.25	0.04	0.17	0.17
Sat Flow, veh/h	1697	1781	1510	1682	1482	241	1654	1148	499	1584	1663	1409
Grp Volume(v), veh/h	74	392	136	81	0	543	162	0	277	52	180	74
Grp Sat Flow(s),veh/h/ln	1697	1781	1510	1682	0	1723	1654	0	1647	1584	1663	1409
Q Serve(g_s), s	3.1	12.6	4.4	3.4	0.0	20.4	6.8	0.0	10.9	2.3	7.2	3.3
Cycle Q Clear(g_c), s	3.1	12.6	4.4	3.4	0.0	20.4	6.8	0.0	10.9	2.3	7.2	3.3
Prop In Lane	1.00		1.00	1.00		0.14	1.00		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	95	670	567	104	0	658	207	0	408	71	279	236
V/C Ratio(X)	0.78	0.59	0.24	0.78	0.00	0.83	0.78	0.00	0.68	0.73	0.65	0.31
Avail Cap(c_a), veh/h	474	970	822	470	0	938	462	0	690	442	696	590
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.4	17.9	15.3	33.1	0.0	20.0	30.4	0.0	24.4	33.8	27.8	26.2
Incr Delay (d2), s/veh	12.7	1.7	0.5	11.7	0.0	5.4	9.7	0.0	4.2	13.3	5.3	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	5.1	1.5	1.7	0.0	8.4	3.2	0.0	4.5	1.1	3.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.1	19.6	15.8	44.8	0.0	25.4	40.0	0.0	28.5	47.1	33.1	27.8
LnGrp LOS	D	B	B	D	A	C	D	A	C	D	C	C
Approach Vol, veh/h		602			624			439			306	
Approach Delay, s/veh		22.0			27.9			32.8			34.2	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	23.8	8.4	32.2	13.0	18.0	8.0	32.6				
Change Period (Y+Rc), s	4.0	6.0	4.0	5.3	4.0	6.0	4.0	5.3				
Max Green Setting (Gmax), s	20.0	30.0	20.0	39.0	20.0	30.0	20.0	39.0				
Max Q Clear Time (g_c+I1), s	4.3	12.9	5.4	14.6	8.8	9.2	5.1	22.4				
Green Ext Time (p_c), s	0.1	2.7	0.1	5.9	0.6	2.3	0.1	5.0				
Intersection Summary												
HCM 6th Ctrl Delay			28.2									
HCM 6th LOS			C									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	824	78	87	493	44	68	0	353	49	288	226
Future Volume (veh/h)	0	824	78	87	493	44	68	0	353	49	288	226
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1811	1811	1781	1781	1781	1841	0	1841	1841	1841	1841
Adj Flow Rate, veh/h	0	969	92	102	580	52	80	0	415	58	339	266
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	6	6	8	8	8	4	0	4	4	4	4
Cap, veh/h	0	1828	567	210	1716	765	105	0	0	87	611	480
Arrive On Green	0.00	0.37	0.37	0.06	0.51	0.51	0.06	0.00	0.00	0.05	0.17	0.17
Sat Flow, veh/h	0	5107	1535	3291	3385	1510	1753	80		1753	3497	2745
Grp Volume(v), veh/h	0	969	92	102	580	52	80	46.1		58	339	266
Grp Sat Flow(s),veh/h/ln	0	1648	1535	1646	1692	1510	1753	D		1753	1749	1373
Q Serve(g_s), s	0.0	10.2	2.7	2.0	6.8	1.2	3.0			2.2	5.9	5.9
Cycle Q Clear(g_c), s	0.0	10.2	2.7	2.0	6.8	1.2	3.0			2.2	5.9	5.9
Prop In Lane	0.00		1.00	1.00		1.00	1.00			1.00		1.00
Lane Grp Cap(c), veh/h	0	1828	567	210	1716	765	105			87	611	480
V/C Ratio(X)	0.00	0.53	0.16	0.49	0.34	0.07	0.76			0.67	0.55	0.55
Avail Cap(c_a), veh/h	0	3712	1152	741	2541	1133	395			395	1575	1237
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	16.5	14.1	30.1	9.8	8.4	30.8			31.1	25.1	25.1
Incr Delay (d2), s/veh	0.0	0.3	0.2	2.0	0.2	0.1	15.3			9.6	0.9	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.6	0.9	0.8	2.2	0.3	1.7			1.1	2.4	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.8	14.3	32.1	9.9	8.4	46.1			40.8	26.0	26.2
LnGrp LOS	A	B	B	C	A	A	D			D	C	C
Approach Vol, veh/h		1061			734						663	
Approach Delay, s/veh		16.6			12.9						27.4	
Approach LOS		B			B						C	

Timer - Assigned Phs	1	2	3	4		6	7
Phs Duration (G+Y+Rc), s	9.1	30.6	8.7	18.1		39.8	8.0
Change Period (Y+Rc), s	4.9	* 6	* 4.7	6.5		6.0	* 4.7
Max Green Setting (Gmax), s	15.0	* 50	* 15	30.0		50.0	* 15
Max Q Clear Time (g_c+I1), s	4.0	12.2	5.0	7.9		8.8	4.2
Green Ext Time (p_c), s	0.2	12.4	0.2	3.7		6.7	0.1

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

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	253	478	92	293	331	35
Future Volume (veh/h)	253	478	92	293	331	35
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1826	1826	1752	1752
Adj Flow Rate, veh/h	294	0	107	341	385	41
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	4	4	5	5	10	10
Cap, veh/h	964		158	1654	704	323
Arrive On Green	0.28	0.00	0.09	0.48	0.22	0.22
Sat Flow, veh/h	3589	1560	1739	3561	3237	1485
Grp Volume(v), veh/h	294	0	107	341	385	41
Grp Sat Flow(s),veh/h/ln	1749	1560	1739	1735	1618	1485
Q Serve(g_s), s	2.4	0.0	2.2	2.1	3.8	0.8
Cycle Q Clear(g_c), s	2.4	0.0	2.2	2.1	3.8	0.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	964		158	1654	704	323
V/C Ratio(X)	0.31		0.68	0.21	0.55	0.13
Avail Cap(c_a), veh/h	2409		719	2390	1338	614
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.4	0.0	16.0	5.5	12.6	11.4
Incr Delay (d2), s/veh	0.1	0.0	1.9	0.0	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.8	0.5	1.1	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.5	0.0	17.9	5.5	12.9	11.5
LnGrp LOS	B		B	A	B	B
Approach Vol, veh/h	294	A		448	426	
Approach Delay, s/veh	10.5			8.5	12.7	
Approach LOS	B			A	B	

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.3	16.2				23.5		12.8
Change Period (Y+Rc), s	4.0	* 6.2				6.2		4.9
Max Green Setting (Gmax), s	15.0	* 25				25.0		15.0
Max Q Clear Time (g_c+I1), s	4.2	4.4				4.1		5.8
Green Ext Time (p_c), s	0.0	0.4				0.5		0.3

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

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	66	64	235	196	99
Future Volume (veh/h)	70	66	64	235	196	99
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1218	1218	1618	1618	1559	1559
Adj Flow Rate, veh/h	77	73	70	258	215	109
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	46	46	19	19	23	23
Cap, veh/h	122	108	90	833	606	296
Arrive On Green	0.10	0.10	0.06	0.51	0.31	0.31
Sat Flow, veh/h	1160	1032	1541	1618	2007	942
Grp Volume(v), veh/h	77	73	70	258	163	161
Grp Sat Flow(s),veh/h/ln	1160	1032	1541	1618	1481	1390
Q Serve(g_s), s	2.0	2.1	1.4	2.9	2.7	2.8
Cycle Q Clear(g_c), s	2.0	2.1	1.4	2.9	2.7	2.8
Prop In Lane	1.00	1.00	1.00			0.68
Lane Grp Cap(c), veh/h	122	108	90	833	465	436
V/C Ratio(X)	0.63	0.67	0.78	0.31	0.35	0.37
Avail Cap(c_a), veh/h	735	654	977	1795	1643	1541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.5	13.6	14.7	4.4	8.3	8.4
Incr Delay (d2), s/veh	5.3	7.1	18.6	0.8	1.6	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.6	0.9	0.6	0.8	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.9	20.7	33.2	5.2	10.0	10.3
LnGrp LOS	B	C	C	A	A	B
Approach Vol, veh/h	150			328	324	
Approach Delay, s/veh	19.7			11.2	10.1	
Approach LOS	B			B	B	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.3	15.9		9.3		22.2
Change Period (Y+Rc), s	4.5	6.0		6.0		6.0
Max Green Setting (Gmax), s	20.0	35.0		20.0		35.0
Max Q Clear Time (g_c+I1), s	3.4	4.8		4.1		4.9
Green Ext Time (p_c), s	0.2	5.1		0.4		4.0

Intersection Summary						
HCM 6th Ctrl Delay			12.4			
HCM 6th LOS			B			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	194	122	78	248	66	168	193	55	52	225	54
Future Volume (veh/h)	32	194	122	78	248	66	168	193	55	52	225	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1841	1841	1841	1781	1781	1781	1737	1737	1737
Adj Flow Rate, veh/h	35	211	133	85	270	72	183	210	60	57	245	59
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	10	10	4	4	4	8	8	8	11	11	11
Cap, veh/h	151	257	162	125	437	370	230	489	415	150	311	75
Arrive On Green	0.09	0.26	0.26	0.07	0.24	0.24	0.14	0.27	0.27	0.09	0.23	0.23
Sat Flow, veh/h	1668	1005	633	1753	1841	1560	1697	1781	1510	1654	1353	326
Grp Volume(v), veh/h	35	0	344	85	270	72	183	210	60	57	0	304
Grp Sat Flow(s),veh/h/ln	1668	0	1638	1753	1841	1560	1697	1781	1510	1654	0	1678
Q Serve(g_s), s	1.3	0.0	13.1	3.1	8.7	2.4	6.9	6.4	2.0	2.2	0.0	11.3
Cycle Q Clear(g_c), s	1.3	0.0	13.1	3.1	8.7	2.4	6.9	6.4	2.0	2.2	0.0	11.3
Prop In Lane	1.00		0.39	1.00		1.00	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	151	0	419	125	437	370	230	489	415	150	0	385
V/C Ratio(X)	0.23	0.00	0.82	0.68	0.62	0.19	0.80	0.43	0.14	0.38	0.00	0.79
Avail Cap(c_a), veh/h	628	0	740	660	832	705	511	1074	910	499	0	1012
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.0	0.0	23.2	30.1	22.6	20.2	27.8	19.8	18.2	28.4	0.0	24.0
Incr Delay (d2), s/veh	0.8	0.0	4.0	6.3	1.4	0.3	6.2	0.6	0.2	1.6	0.0	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	5.2	1.5	3.7	0.9	3.1	2.6	0.7	0.9	0.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.8	0.0	27.3	36.3	24.1	20.5	34.0	20.4	18.3	30.0	0.0	27.7
LnGrp LOS	C	A	C	D	C	C	C	C	B	C	A	C
Approach Vol, veh/h		379			427			453			361	
Approach Delay, s/veh		27.4			25.9			25.6			28.0	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	22.7	13.5	20.9	10.5	21.4	10.5	23.9
Change Period (Y+Rc), s	4.5	5.7	4.5	5.7	4.5	5.7	4.5	5.7
Max Green Setting (Gmax), s	25.0	30.0	20.0	40.0	25.0	30.0	20.0	40.0
Max Q Clear Time (g_c+I1), s	5.1	15.1	8.9	13.3	3.3	10.7	4.2	8.4
Green Ext Time (p_c), s	0.2	1.9	0.4	1.9	0.1	1.7	0.1	1.5

Intersection Summary	
HCM 6th Ctrl Delay	26.7
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	118	28	134	179	143	63	201	173	180	193	66
Future Volume (veh/h)	46	118	28	134	179	143	63	201	173	180	193	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1648	1648	1648	1796	1796	1796	1796	1796	1796	1767	1767	1767
Adj Flow Rate, veh/h	48	124	29	141	188	151	66	212	182	189	203	69
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	17	17	17	7	7	7	7	7	7	9	9	9
Cap, veh/h	91	443	101	179	409	311	122	399	338	234	513	435
Arrive On Green	0.06	0.17	0.17	0.10	0.22	0.22	0.07	0.22	0.22	0.14	0.29	0.29
Sat Flow, veh/h	1570	2534	576	1711	1848	1402	1711	1796	1522	1682	1767	1497
Grp Volume(v), veh/h	48	75	78	141	173	166	66	212	182	189	203	69
Grp Sat Flow(s),veh/h/ln	1570	1566	1544	1711	1706	1544	1711	1796	1522	1682	1767	1497
Q Serve(g_s), s	1.5	2.1	2.2	4.1	4.5	4.8	1.9	5.3	5.4	5.6	4.7	1.8
Cycle Q Clear(g_c), s	1.5	2.1	2.2	4.1	4.5	4.8	1.9	5.3	5.4	5.6	4.7	1.8
Prop In Lane	1.00		0.37	1.00		0.91	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	91	274	270	179	378	342	122	399	338	234	513	435
V/C Ratio(X)	0.53	0.27	0.29	0.79	0.46	0.49	0.54	0.53	0.54	0.81	0.40	0.16
Avail Cap(c_a), veh/h	919	1222	1205	1001	1665	1506	1001	1227	1040	985	1207	1023
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	18.3	18.4	22.4	17.3	17.4	23.0	17.6	17.6	21.4	14.6	13.5
Incr Delay (d2), s/veh	1.8	1.1	1.2	2.9	1.8	2.3	1.4	2.3	2.8	2.5	1.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.8	0.8	1.7	1.8	1.7	0.8	2.2	2.0	2.2	1.8	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.2	19.5	19.6	25.3	19.1	19.7	24.4	19.9	20.4	23.9	15.6	13.9
LnGrp LOS	C	B	B	C	B	B	C	B	C	C	B	B
Approach Vol, veh/h		201			480			460			461	
Approach Delay, s/veh		20.9			21.1			20.8			18.8	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	14.4	7.7	19.9	7.0	16.7	11.1	16.4
Change Period (Y+Rc), s	4.0	5.4	4.0	5.0	4.0	5.4	4.0	5.0
Max Green Setting (Gmax), s	30.0	40.0	30.0	35.0	30.0	50.0	30.0	35.0
Max Q Clear Time (g_c+I1), s	6.1	4.2	3.9	6.7	3.5	6.8	7.6	7.4
Green Ext Time (p_c), s	0.1	1.8	0.0	2.9	0.0	4.5	0.1	4.0

Intersection Summary	
HCM 6th Ctrl Delay	20.3
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	616	87	266	418	0	0	0	0	372	6	103
Future Volume (veh/h)	0	616	87	266	418	0	0	0	0	372	6	103
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1841	1841	0				1856	1856	1856
Adj Flow Rate, veh/h	0	700	99	302	475	0				423	7	117
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88				0.88	0.88	0.88
Percent Heavy Veh, %	0	2	2	4	4	0				3	3	3
Cap, veh/h	0	1127	158	347	936	0				468	8	129
Arrive On Green	0.00	0.25	0.25	0.20	0.51	0.00				0.35	0.35	0.35
Sat Flow, veh/h	0	4694	634	1753	1841	0				1332	22	368
Grp Volume(v), veh/h	0	525	274	302	475	0				547	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1756	1753	1841	0				1723	0	0
Q Serve(g_s), s	0.0	9.0	9.1	10.9	11.2	0.0				19.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	9.0	9.1	10.9	11.2	0.0				19.8	0.0	0.0
Prop In Lane	0.00		0.36	1.00		0.00				0.77		0.21
Lane Grp Cap(c), veh/h	0	848	437	347	936	0				605	0	0
V/C Ratio(X)	0.00	0.62	0.63	0.87	0.51	0.00				0.90	0.00	0.00
Avail Cap(c_a), veh/h	0	1820	939	535	984	0				921	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	21.8	21.9	25.4	10.7	0.0				20.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	1.3	6.2	0.4	0.0				6.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	3.7	4.9	4.0	0.0				8.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	22.5	23.2	31.6	11.1	0.0				26.4	0.0	0.0
LnGrp LOS	A	C	C	C	B	A				C	A	A
Approach Vol, veh/h		799			777						547	
Approach Delay, s/veh		22.7			19.0						26.4	
Approach LOS		C			B						C	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	17.0	20.9		27.6		37.9						
Change Period (Y+Rc), s	4.0	4.6		4.6		4.6						
Max Green Setting (Gmax), s	20.0	35.0		35.0		35.0						
Max Q Clear Time (g_c+I1), s	12.9	11.1		21.8		13.2						
Green Ext Time (p_c), s	0.1	5.2		1.2		2.8						
Intersection Summary												
HCM 6th Ctrl Delay			22.3									
HCM 6th LOS			C									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	900	0	0	616	283	68	4	405	0	0	0
Future Volume (veh/h)	88	900	0	0	616	283	68	4	405	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1796	1796	1796			
Adj Flow Rate, veh/h	98	1000	0	0	684	314	76	4	450			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	3	3	0	0	3	3	7	7	7			
Cap, veh/h	126	1750	0	0	864	397	83	4	489			
Arrive On Green	0.07	0.50	0.00	0.00	0.37	0.37	0.37	0.37	0.37			
Sat Flow, veh/h	1767	3618	0	0	2440	1077	222	12	1315			
Grp Volume(v), veh/h	98	1000	0	0	514	484	530	0	0			
Grp Sat Flow(s),veh/h/ln	1767	1763	0	0	1763	1662	1549	0	0			
Q Serve(g_s), s	3.8	14.0	0.0	0.0	18.2	18.2	22.9	0.0	0.0			
Cycle Q Clear(g_c), s	3.8	14.0	0.0	0.0	18.2	18.2	22.9	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.65	0.14		0.85			
Lane Grp Cap(c), veh/h	126	1750	0	0	649	612	576	0	0			
V/C Ratio(X)	0.78	0.57	0.00	0.00	0.79	0.79	0.92	0.00	0.00			
Avail Cap(c_a), veh/h	505	1763	0	0	881	831	774	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	32.0	12.4	0.0	0.0	19.7	19.7	21.0	0.0	0.0			
Incr Delay (d2), s/veh	3.9	0.4	0.0	0.0	3.4	3.5	11.4	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.7	4.9	0.0	0.0	7.4	7.0	9.3	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.9	12.8	0.0	0.0	23.1	23.3	32.4	0.0	0.0			
LnGrp LOS	D	B	A	A	C	C	C	A	A			
Approach Vol, veh/h		1098			998			530				
Approach Delay, s/veh		14.9			23.2			32.4				
Approach LOS		B			C			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		39.3			9.0	30.4		30.7				
Change Period (Y+Rc), s		4.6			4.0	4.6		4.6				
Max Green Setting (Gmax), s		35.0			20.0	35.0		35.0				
Max Q Clear Time (g_c+I1), s		16.0			5.8	20.2		24.9				
Green Ext Time (p_c), s		6.7			0.0	5.6		1.2				

Intersection Summary		
HCM 6th Ctrl Delay		21.6
HCM 6th LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	535	170	67	373	43	74	249	127	105	250	80
Future Volume (veh/h)	86	535	170	67	373	43	74	249	127	105	250	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1767	1767	1767	1826	1826	1826	1781	1781	1781
Adj Flow Rate, veh/h	91	563	179	71	393	45	78	262	134	111	263	84
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	9	9	9	5	5	5	8	8	8
Cap, veh/h	121	630	534	91	503	58	103	328	168	142	557	472
Arrive On Green	0.07	0.34	0.34	0.05	0.32	0.32	0.06	0.29	0.29	0.08	0.31	0.31
Sat Flow, veh/h	1781	1870	1585	1682	1556	178	1739	1139	582	1697	1781	1510
Grp Volume(v), veh/h	91	563	179	71	0	438	78	0	396	111	263	84
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1682	0	1735	1739	0	1721	1697	1781	1510
Q Serve(g_s), s	4.2	24.1	7.1	3.5	0.0	19.3	3.7	0.0	17.9	5.4	10.0	3.4
Cycle Q Clear(g_c), s	4.2	24.1	7.1	3.5	0.0	19.3	3.7	0.0	17.9	5.4	10.0	3.4
Prop In Lane	1.00		1.00	1.00		0.10	1.00		0.34	1.00		1.00
Lane Grp Cap(c), veh/h	121	630	534	91	0	560	103	0	496	142	557	472
V/C Ratio(X)	0.75	0.89	0.34	0.78	0.00	0.78	0.76	0.00	0.80	0.78	0.47	0.18
Avail Cap(c_a), veh/h	422	665	564	399	0	617	412	0	796	402	809	686
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.6	26.5	20.9	39.4	0.0	25.9	39.1	0.0	27.7	37.9	23.4	21.1
Incr Delay (d2), s/veh	13.6	15.2	0.8	13.3	0.0	7.4	16.2	0.0	6.2	9.1	1.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	12.9	2.7	1.8	0.0	8.7	2.0	0.0	8.0	2.6	4.3	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.2	41.7	21.7	52.7	0.0	33.2	55.3	0.0	34.0	47.0	24.7	21.5
LnGrp LOS	D	D	C	D	A	C	E	A	C	D	C	C
Approach Vol, veh/h		833			509			474			458	
Approach Delay, s/veh		38.5			35.9			37.5			29.5	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	34.4	11.0	30.3	9.7	33.2	9.0	32.4
Change Period (Y+Rc), s	4.0	6.0	4.0	* 6	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	20.0	30.0	20.0	* 39	20.0	30.0	20.0	38.3
Max Q Clear Time (g_c+I1), s	5.5	26.1	7.4	19.9	6.2	21.3	5.7	12.0
Green Ext Time (p_c), s	0.1	2.3	0.2	4.4	0.3	3.0	0.2	3.7

Intersection Summary	
HCM 6th Ctrl Delay	35.9
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	837	98	83	493	36	101	0	432	83	373	272
Future Volume (veh/h)	0	837	98	83	493	36	101	0	432	83	373	272
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1841	1841	1841	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	900	105	89	530	39	109	0	465	89	401	292
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	3	3	4	4	4	2	0	2	2	2	2
Cap, veh/h	0	1721	534	203	1649	735	144	0	0	117	693	544
Arrive On Green	0.00	0.34	0.34	0.06	0.47	0.47	0.08	0.00	0.00	0.07	0.20	0.20
Sat Flow, veh/h	0	5233	1572	3401	3497	1560	1781	109		1781	3554	2790
Grp Volume(v), veh/h	0	900	105	89	530	39	109	41.7		89	401	292
Grp Sat Flow(s),veh/h/ln	0	1689	1572	1700	1749	1560	1781	D		1781	1777	1395
Q Serve(g_s), s	0.0	9.7	3.2	1.7	6.4	0.9	4.1			3.3	7.0	6.4
Cycle Q Clear(g_c), s	0.0	9.7	3.2	1.7	6.4	0.9	4.1			3.3	7.0	6.4
Prop In Lane	0.00		1.00	1.00		1.00	1.00			1.00		1.00
Lane Grp Cap(c), veh/h	0	1721	534	203	1649	735	144			117	693	544
V/C Ratio(X)	0.00	0.52	0.20	0.44	0.32	0.05	0.75			0.76	0.58	0.54
Avail Cap(c_a), veh/h	0	3717	1154	749	2566	1145	392			392	1565	1228
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	18.1	15.9	30.9	11.2	9.8	30.6			31.3	24.9	24.7
Incr Delay (d2), s/veh	0.0	0.3	0.2	1.7	0.2	0.0	11.1			10.9	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.6	1.1	0.7	2.3	0.3	2.1			1.7	2.9	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	18.4	16.2	32.6	11.4	9.8	41.7			42.2	25.7	25.6
LnGrp LOS	A	B	B	C	B	A	D			D	C	C
Approach Vol, veh/h		1005			658						782	
Approach Delay, s/veh		18.2			14.2						27.6	
Approach LOS		B			B						C	
Timer - Assigned Phs	1	2	3	4		6	7					
Phs Duration (G+Y+Rc), s	9.0	29.1	10.2	19.8		38.1	9.2					
Change Period (Y+Rc), s	4.9	* 6	* 4.7	6.5		6.0	* 4.7					
Max Green Setting (Gmax), s	15.0	* 50	* 15	30.0		50.0	* 15					
Max Q Clear Time (g_c+I1), s	3.7	11.7	6.1	9.0		8.4	5.3					
Green Ext Time (p_c), s	0.2	11.4	0.3	4.3		5.9	0.1					
Intersection Summary												
HCM 6th Ctrl Delay			21.0									
HCM 6th LOS			C									
Notes												

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	401	553	54	267	345	50
Future Volume (veh/h)	401	553	54	267	345	50
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	441	0	59	293	379	55
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	5	5
Cap, veh/h	1010		111	1636	756	347
Arrive On Green	0.28	0.00	0.06	0.46	0.22	0.22
Sat Flow, veh/h	3647	1585	1781	3647	3374	1547
Grp Volume(v), veh/h	441	0	59	293	379	55
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1687	1547
Q Serve(g_s), s	3.6	0.0	1.1	1.7	3.5	1.0
Cycle Q Clear(g_c), s	3.6	0.0	1.1	1.7	3.5	1.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1010		111	1636	756	347
V/C Ratio(X)	0.44		0.53	0.18	0.50	0.16
Avail Cap(c_a), veh/h	2526		760	2526	1439	660
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.3	0.0	16.0	5.6	11.9	11.0
Incr Delay (d2), s/veh	0.1	0.0	1.5	0.0	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.4	0.4	1.0	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.4	0.0	17.5	5.6	12.1	11.1
LnGrp LOS	B		B	A	B	B
Approach Vol, veh/h	441	A		352	434	
Approach Delay, s/veh	10.4			7.6	12.0	
Approach LOS	B			A	B	

Timer - Assigned Phs	1	2	6	8
Phs Duration (G+Y+Rc), s	6.2	16.2	22.4	12.8
Change Period (Y+Rc), s	4.0	* 6.2	6.2	4.9
Max Green Setting (Gmax), s	15.0	* 25	25.0	15.0
Max Q Clear Time (g_c+I1), s	3.1	5.6	3.7	5.5
Green Ext Time (p_c), s	0.0	0.6	0.4	0.3

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

Notes

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

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	137	162	79	284	272	63
Future Volume (veh/h)	137	162	79	284	272	63
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1604	1604	1781	1781	1648	1648
Adj Flow Rate, veh/h	156	184	90	323	309	72
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	20	20	8	8	17	17
Cap, veh/h	300	267	117	874	771	177
Arrive On Green	0.20	0.20	0.07	0.49	0.30	0.30
Sat Flow, veh/h	1527	1359	1697	1781	2611	581
Grp Volume(v), veh/h	156	184	90	323	190	191
Grp Sat Flow(s),veh/h/ln	1527	1359	1697	1781	1566	1544
Q Serve(g_s), s	3.5	4.8	2.0	4.3	3.7	3.8
Cycle Q Clear(g_c), s	3.5	4.8	2.0	4.3	3.7	3.8
Prop In Lane	1.00	1.00	1.00			0.38
Lane Grp Cap(c), veh/h	300	267	117	874	477	471
V/C Ratio(X)	0.52	0.69	0.77	0.37	0.40	0.41
Avail Cap(c_a), veh/h	796	708	884	1624	1428	1407
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.8	14.3	17.6	6.1	10.6	10.6
Incr Delay (d2), s/veh	1.4	3.2	14.1	0.9	1.9	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.4	1.1	1.2	1.2	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.2	17.5	31.7	7.0	12.5	12.6
LnGrp LOS	B	B	C	A	B	B
Approach Vol, veh/h	340			413	381	
Approach Delay, s/veh	16.4			12.4	12.6	
Approach LOS	B			B	B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	7.1	17.7		13.5		24.8
Change Period (Y+Rc), s	4.5	6.0		6.0		6.0
Max Green Setting (Gmax), s	20.0	35.0		20.0		35.0
Max Q Clear Time (g_c+I1), s	4.0	5.8		6.8		6.3
Green Ext Time (p_c), s	0.3	5.9		0.9		5.0

Intersection Summary	
HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	336	165	74	228	60	165	388	165	112	312	61
Future Volume (veh/h)	82	336	165	74	228	60	165	388	165	112	312	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1826	1826	1826	1811	1811	1811
Adj Flow Rate, veh/h	85	346	170	76	235	62	170	400	170	115	322	63
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	2	2	2	5	5	5	6	6	6
Cap, veh/h	128	378	186	105	576	488	209	526	446	157	381	75
Arrive On Green	0.07	0.32	0.32	0.06	0.31	0.31	0.12	0.29	0.29	0.09	0.26	0.26
Sat Flow, veh/h	1767	1175	577	1781	1870	1585	1739	1826	1547	1725	1471	288
Grp Volume(v), veh/h	85	0	516	76	235	62	170	400	170	115	0	385
Grp Sat Flow(s),veh/h/ln	1767	0	1752	1781	1870	1585	1739	1826	1547	1725	0	1759
Q Serve(g_s), s	4.0	0.0	24.0	3.6	8.4	2.4	8.1	16.9	7.5	5.5	0.0	17.6
Cycle Q Clear(g_c), s	4.0	0.0	24.0	3.6	8.4	2.4	8.1	16.9	7.5	5.5	0.0	17.6
Prop In Lane	1.00		0.33	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	128	0	563	105	576	488	209	526	446	157	0	456
V/C Ratio(X)	0.66	0.00	0.92	0.72	0.41	0.13	0.81	0.76	0.38	0.73	0.00	0.85
Avail Cap(c_a), veh/h	521	0	619	525	661	560	410	860	729	406	0	829
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.4	0.0	27.7	39.3	23.2	21.1	36.4	27.5	24.2	37.6	0.0	29.8
Incr Delay (d2), s/veh	5.8	0.0	17.6	9.1	0.5	0.1	7.4	2.3	0.5	6.5	0.0	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	12.3	1.8	3.7	0.9	3.8	7.5	2.7	2.6	0.0	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.1	0.0	45.3	48.3	23.7	21.3	43.8	29.8	24.7	44.0	0.0	34.2
LnGrp LOS	D	A	D	D	C	C	D	C	C	D	A	C
Approach Vol, veh/h		601			373			740			500	
Approach Delay, s/veh		45.1			28.3			31.9			36.5	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	33.0	14.7	27.7	10.6	31.8	12.2	30.2
Change Period (Y+Rc), s	4.5	5.7	4.5	5.7	4.5	5.7	4.5	5.7
Max Green Setting (Gmax), s	25.0	30.0	20.0	40.0	25.0	30.0	20.0	40.0
Max Q Clear Time (g_c+I1), s	5.6	26.0	10.1	19.6	6.0	10.4	7.5	18.9
Green Ext Time (p_c), s	0.1	1.2	0.3	2.4	0.2	1.5	0.2	3.0

Intersection Summary	
HCM 6th Ctrl Delay	35.9
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	324	60	244	222	313	39	308	203	208	331	59
Future Volume (veh/h)	185	324	60	244	222	313	39	308	203	208	331	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1856	1856	1856	1841	1841	1841	1826	1826	1826
Adj Flow Rate, veh/h	195	341	63	257	234	329	41	324	214	219	348	62
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	5	5	5
Cap, veh/h	228	757	138	291	512	457	74	436	369	252	620	526
Arrive On Green	0.13	0.26	0.26	0.16	0.29	0.29	0.04	0.24	0.24	0.15	0.34	0.34
Sat Flow, veh/h	1753	2953	540	1767	1763	1572	1753	1841	1560	1739	1826	1547
Grp Volume(v), veh/h	195	200	204	257	234	329	41	324	214	219	348	62
Grp Sat Flow(s),veh/h/ln	1753	1749	1744	1767	1763	1572	1753	1841	1560	1739	1826	1547
Q Serve(g_s), s	10.2	9.0	9.2	13.3	10.1	17.5	2.1	15.2	11.3	11.5	14.5	2.6
Cycle Q Clear(g_c), s	10.2	9.0	9.2	13.3	10.1	17.5	2.1	15.2	11.3	11.5	14.5	2.6
Prop In Lane	1.00		0.31	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	228	448	447	291	512	457	74	436	369	252	620	526
V/C Ratio(X)	0.85	0.45	0.46	0.88	0.46	0.72	0.56	0.74	0.58	0.87	0.56	0.12
Avail Cap(c_a), veh/h	564	750	748	568	945	843	564	691	585	559	685	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.7	29.1	29.2	38.1	27.1	29.7	43.8	33.0	31.5	39.0	25.1	21.2
Incr Delay (d2), s/veh	3.5	1.5	1.5	3.5	1.4	4.5	2.4	5.3	3.1	3.5	1.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	3.9	4.0	5.9	4.4	7.0	1.0	7.3	4.5	5.1	6.4	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.2	30.6	30.7	41.6	28.4	34.2	46.2	38.3	34.5	42.5	26.8	21.4
LnGrp LOS	D	C	C	D	C	C	D	D	C	D	C	C
Approach Vol, veh/h		599			820			579			629	
Approach Delay, s/veh		34.7			34.9			37.4			31.8	
Approach LOS		C			C			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.3	29.3	7.9	36.7	16.1	32.5	17.5	27.1				
Change Period (Y+Rc), s	4.0	5.4	4.0	5.0	4.0	5.4	4.0	5.0				
Max Green Setting (Gmax), s	30.0	40.0	30.0	35.0	30.0	50.0	30.0	35.0				
Max Q Clear Time (g_c+I1), s	15.3	11.2	4.1	16.5	12.2	19.5	13.5	17.2				
Green Ext Time (p_c), s	0.1	4.9	0.0	4.1	0.1	7.6	0.1	4.9				
Intersection Summary												
HCM 6th Ctrl Delay			34.7									
HCM 6th LOS			C									

EXISTING PLUS PROJECT CONDITIONS SYNCHRO RESULTS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	290	29	363	341	0	0	0	0	259	3	77
Future Volume (veh/h)	0	290	29	363	341	0	0	0	0	259	3	77
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1841	1841	1841	1841	0				1767	1767	1767
Adj Flow Rate, veh/h	0	345	35	432	406	0				308	4	92
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84				0.84	0.84	0.84
Percent Heavy Veh, %	0	4	4	4	4	0				9	9	9
Cap, veh/h	0	872	87	484	993	0				359	5	107
Arrive On Green	0.00	0.19	0.19	0.28	0.54	0.00				0.29	0.29	0.29
Sat Flow, veh/h	0	4810	463	1753	1841	0				1248	16	373
Grp Volume(v), veh/h	0	247	133	432	406	0				404	0	0
Grp Sat Flow(s),veh/h/ln	0	1675	1757	1753	1841	0				1637	0	0
Q Serve(g_s), s	0.0	3.4	3.5	12.6	6.9	0.0				12.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	3.4	3.5	12.6	6.9	0.0				12.4	0.0	0.0
Prop In Lane	0.00		0.26	1.00		0.00				0.76		0.23
Lane Grp Cap(c), veh/h	0	629	330	484	993	0				471	0	0
V/C Ratio(X)	0.00	0.39	0.40	0.89	0.41	0.00				0.86	0.00	0.00
Avail Cap(c_a), veh/h	0	2202	1155	658	1210	0				1076	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	19.0	19.0	18.5	7.3	0.0				17.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.7	9.4	0.2	0.0				1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	1.4	5.8	2.1	0.0				4.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	19.3	19.7	27.9	7.5	0.0				19.7	0.0	0.0
LnGrp LOS	A	B	B	C	A	A				B	A	A
Approach Vol, veh/h		380			838						404	
Approach Delay, s/veh		19.5			18.0						19.7	
Approach LOS		B			B						B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	18.7	14.6		19.9		33.3
Change Period (Y+Rc), s	4.0	4.6		4.6		4.6
Max Green Setting (Gmax), s	20.0	35.0		35.0		35.0
Max Q Clear Time (g_c+I1), s	14.6	5.5		14.4		8.9
Green Ext Time (p_c), s	0.1	2.3		1.0		2.4

Intersection Summary			
HCM 6th Ctrl Delay			18.8
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	500	0	0	651	346	53	2	224	0	0	0
Future Volume (veh/h)	49	500	0	0	651	346	53	2	224	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1811	1811	0	0	1826	1826	1737	1737	1737			
Adj Flow Rate, veh/h	58	588	0	0	766	407	62	2	264			
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85			
Percent Heavy Veh, %	6	6	0	0	5	5	11	11	11			
Cap, veh/h	91	1998	0	0	1001	530	73	2	310			
Arrive On Green	0.05	0.58	0.00	0.00	0.46	0.46	0.26	0.26	0.26			
Sat Flow, veh/h	1725	3532	0	0	2283	1160	284	9	1211			
Grp Volume(v), veh/h	58	588	0	0	606	567	328	0	0			
Grp Sat Flow(s),veh/h/ln	1725	1721	0	0	1735	1617	1505	0	0			
Q Serve(g_s), s	1.9	4.9	0.0	0.0	16.4	16.5	11.7	0.0	0.0			
Cycle Q Clear(g_c), s	1.9	4.9	0.0	0.0	16.4	16.5	11.7	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.72	0.19		0.80			
Lane Grp Cap(c), veh/h	91	1998	0	0	792	738	385	0	0			
V/C Ratio(X)	0.64	0.29	0.00	0.00	0.76	0.77	0.85	0.00	0.00			
Avail Cap(c_a), veh/h	613	2139	0	0	1078	1005	935	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	26.1	6.0	0.0	0.0	12.8	12.8	19.9	0.0	0.0			
Incr Delay (d2), s/veh	2.7	0.1	0.0	0.0	2.1	2.4	2.1	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.8	1.3	0.0	0.0	5.7	5.4	3.9	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.8	6.0	0.0	0.0	14.9	15.2	22.0	0.0	0.0			
LnGrp LOS	C	A	A	A	B	B	C	A	A			
Approach Vol, veh/h		646			1173			328				
Approach Delay, s/veh		8.1			15.0			22.0				
Approach LOS		A			B			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		37.3			7.0	30.3		19.0				
Change Period (Y+Rc), s		4.6			4.0	4.6		4.6				
Max Green Setting (Gmax), s		35.0			20.0	35.0		35.0				
Max Q Clear Time (g_c+I1), s		6.9			3.9	18.5		13.7				
Green Ext Time (p_c), s		4.0			0.0	7.2		0.8				
Intersection Summary												
HCM 6th Ctrl Delay			14.0									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	337	117	70	402	74	139	173	72	69	176	83
Future Volume (veh/h)	70	337	117	70	402	74	139	173	72	69	176	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1767	1767	1767	1737	1737	1737	1663	1663	1663
Adj Flow Rate, veh/h	81	392	136	81	467	86	162	201	84	80	205	97
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	8	8	8	9	9	9	11	11	11	16	16	16
Cap, veh/h	104	680	576	104	555	102	206	278	116	101	296	251
Arrive On Green	0.06	0.38	0.38	0.06	0.38	0.38	0.12	0.24	0.24	0.06	0.18	0.18
Sat Flow, veh/h	1697	1781	1510	1682	1451	267	1654	1163	486	1584	1663	1409
Grp Volume(v), veh/h	81	392	136	81	0	553	162	0	285	80	205	97
Grp Sat Flow(s),veh/h/ln	1697	1781	1510	1682	0	1719	1654	0	1649	1584	1663	1409
Q Serve(g_s), s	3.6	13.2	4.6	3.6	0.0	22.3	7.2	0.0	12.1	3.8	8.8	4.6
Cycle Q Clear(g_c), s	3.6	13.2	4.6	3.6	0.0	22.3	7.2	0.0	12.1	3.8	8.8	4.6
Prop In Lane	1.00		1.00	1.00		0.16	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	104	680	576	104	0	657	206	0	394	101	296	251
V/C Ratio(X)	0.78	0.58	0.24	0.78	0.00	0.84	0.79	0.00	0.72	0.79	0.69	0.39
Avail Cap(c_a), veh/h	447	915	775	443	0	882	436	0	652	417	657	557
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	18.6	16.0	35.1	0.0	21.4	32.3	0.0	26.6	35.1	29.3	27.6
Incr Delay (d2), s/veh	11.5	1.7	0.4	11.7	0.0	6.8	10.1	0.0	5.3	13.1	6.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	5.4	1.6	1.8	0.0	9.5	3.4	0.0	5.1	1.8	3.9	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.6	20.3	16.4	46.8	0.0	28.2	42.4	0.0	31.9	48.2	35.4	29.6
LnGrp LOS	D	C	B	D	A	C	D	A	C	D	D	C
Approach Vol, veh/h		609			634			447			382	
Approach Delay, s/veh		22.9			30.6			35.7			36.6	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	24.1	8.7	34.3	13.4	19.5	8.7	34.3
Change Period (Y+Rc), s	4.0	6.0	4.0	5.3	4.0	6.0	4.0	5.3
Max Green Setting (Gmax), s	20.0	30.0	20.0	39.0	20.0	30.0	20.0	39.0
Max Q Clear Time (g_c+I1), s	5.8	14.1	5.6	15.2	9.2	10.8	5.6	24.3
Green Ext Time (p_c), s	0.1	2.7	0.1	5.8	0.5	2.7	0.1	4.8

Intersection Summary	
HCM 6th Ctrl Delay	30.5
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	840	83	87	499	44	70	0	353	49	288	226
Future Volume (veh/h)	0	840	83	87	499	44	70	0	353	49	288	226
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1811	1811	1781	1781	1781	1841	0	1841	1841	1841	1841
Adj Flow Rate, veh/h	0	988	98	102	587	52	82	0	415	58	339	266
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	6	6	8	8	8	4	0	4	4	4	4
Cap, veh/h	0	1850	574	208	1726	770	108	0	0	86	608	477
Arrive On Green	0.00	0.37	0.37	0.06	0.51	0.51	0.06	0.00	0.00	0.05	0.17	0.17
Sat Flow, veh/h	0	5107	1535	3291	3385	1510	1753	82		1753	3497	2745
Grp Volume(v), veh/h	0	988	98	102	587	52	82	46.0		58	339	266
Grp Sat Flow(s),veh/h/ln	0	1648	1535	1646	1692	1510	1753	D		1753	1749	1373
Q Serve(g_s), s	0.0	10.5	2.9	2.0	6.9	1.2	3.1			2.2	6.0	6.0
Cycle Q Clear(g_c), s	0.0	10.5	2.9	2.0	6.9	1.2	3.1			2.2	6.0	6.0
Prop In Lane	0.00		1.00	1.00		1.00	1.00			1.00		1.00
Lane Grp Cap(c), veh/h	0	1850	574	208	1726	770	108			86	608	477
V/C Ratio(X)	0.00	0.53	0.17	0.49	0.34	0.07	0.76			0.67	0.56	0.56
Avail Cap(c_a), veh/h	0	3663	1137	732	2508	1118	390			390	1555	1220
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	16.5	14.1	30.6	9.8	8.4	31.2			31.6	25.5	25.5
Incr Delay (d2), s/veh	0.0	0.3	0.2	2.0	0.2	0.1	14.9			9.8	0.9	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.7	1.0	0.8	2.3	0.3	1.7			1.1	2.4	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.8	14.3	32.6	10.0	8.4	46.0			41.4	26.4	26.7
LnGrp LOS	A	B	B	C	A	A	D			D	C	C
Approach Vol, veh/h		1086			741						663	
Approach Delay, s/veh		16.6			13.0						27.8	
Approach LOS		B			B						C	

Timer - Assigned Phs	1	2	3	4		6	7
Phs Duration (G+Y+Rc), s	9.2	31.3	8.9	18.2		40.4	8.0
Change Period (Y+Rc), s	4.9	* 6	* 4.7	6.5		6.0	* 4.7
Max Green Setting (Gmax), s	15.0	* 50	* 15	30.0		50.0	* 15
Max Q Clear Time (g_c+I1), s	4.0	12.5	5.1	8.0		8.9	4.2
Green Ext Time (p_c), s	0.2	12.7	0.2	3.7		6.8	0.1

Intersection Summary		
HCM 6th Ctrl Delay		19.4
HCM 6th LOS		B

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	254	478	92	293	337	35
Future Volume (veh/h)	254	478	92	293	337	35
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1826	1826	1752	1752
Adj Flow Rate, veh/h	295	0	107	341	392	41
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	4	4	5	5	10	10
Cap, veh/h	964		158	1653	704	323
Arrive On Green	0.28	0.00	0.09	0.48	0.22	0.22
Sat Flow, veh/h	3589	1560	1739	3561	3237	1485
Grp Volume(v), veh/h	295	0	107	341	392	41
Grp Sat Flow(s),veh/h/ln	1749	1560	1739	1735	1618	1485
Q Serve(g_s), s	2.4	0.0	2.2	2.1	3.9	0.8
Cycle Q Clear(g_c), s	2.4	0.0	2.2	2.1	3.9	0.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	964		158	1653	704	323
V/C Ratio(X)	0.31		0.68	0.21	0.56	0.13
Avail Cap(c_a), veh/h	2409		719	2389	1338	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.4	0.0	16.0	5.5	12.6	11.4
Incr Delay (d2), s/veh	0.1	0.0	1.9	0.0	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.8	0.5	1.1	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.5	0.0	17.9	5.5	12.9	11.5
LnGrp LOS	B		B	A	B	B
Approach Vol, veh/h	295	A		448	433	
Approach Delay, s/veh	10.5			8.5	12.8	
Approach LOS	B			A	B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	16.2				23.5		12.8
Change Period (Y+Rc), s	4.0	* 6.2				6.2		4.9
Max Green Setting (Gmax), s	15.0	* 25				25.0		15.0
Max Q Clear Time (g_c+I1), s	4.2	4.4				4.1		5.9
Green Ext Time (p_c), s	0.0	0.4				0.5		0.3

Intersection Summary	
HCM 6th Ctrl Delay	10.6
HCM 6th LOS	B

Notes

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

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	71	78	240	198	99
Future Volume (veh/h)	70	71	78	240	198	99
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1218	1218	1618	1618	1559	1559
Adj Flow Rate, veh/h	77	78	86	264	218	109
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	46	46	19	19	23	23
Cap, veh/h	128	114	104	839	604	291
Arrive On Green	0.11	0.11	0.07	0.52	0.31	0.31
Sat Flow, veh/h	1160	1032	1541	1618	2016	934
Grp Volume(v), veh/h	77	78	86	264	165	162
Grp Sat Flow(s),veh/h/ln	1160	1032	1541	1618	1481	1391
Q Serve(g_s), s	2.0	2.3	1.8	3.0	2.8	2.9
Cycle Q Clear(g_c), s	2.0	2.3	1.8	3.0	2.8	2.9
Prop In Lane	1.00	1.00	1.00			0.67
Lane Grp Cap(c), veh/h	128	114	104	839	461	433
V/C Ratio(X)	0.60	0.68	0.83	0.31	0.36	0.37
Avail Cap(c_a), veh/h	719	639	954	1754	1605	1507
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.7	13.8	14.9	4.5	8.6	8.7
Incr Delay (d2), s/veh	4.5	7.1	20.4	0.8	1.7	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.7	1.1	0.6	0.8	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.2	20.9	35.3	5.3	10.3	10.6
LnGrp LOS	B	C	D	A	B	B
Approach Vol, veh/h	155			350	327	
Approach Delay, s/veh	19.5			12.6	10.5	
Approach LOS	B			B	B	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.7	16.1		9.6		22.7
Change Period (Y+Rc), s	4.5	6.0		6.0		6.0
Max Green Setting (Gmax), s	20.0	35.0		20.0		35.0
Max Q Clear Time (g_c+I1), s	3.8	4.9		4.3		5.0
Green Ext Time (p_c), s	0.3	5.1		0.4		4.1
Intersection Summary						
HCM 6th Ctrl Delay			13.1			
HCM 6th LOS			B			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	194	122	78	248	66	168	199	55	53	242	57
Future Volume (veh/h)	33	194	122	78	248	66	168	199	55	53	242	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1841	1841	1841	1781	1781	1781	1737	1737	1737
Adj Flow Rate, veh/h	36	211	133	85	270	72	183	216	60	58	263	62
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	10	10	4	4	4	8	8	8	11	11	11
Cap, veh/h	147	256	161	123	436	370	229	514	436	145	328	77
Arrive On Green	0.09	0.25	0.25	0.07	0.24	0.24	0.13	0.29	0.29	0.09	0.24	0.24
Sat Flow, veh/h	1668	1005	633	1753	1841	1560	1697	1781	1510	1654	1359	320
Grp Volume(v), veh/h	36	0	344	85	270	72	183	216	60	58	0	325
Grp Sat Flow(s),veh/h/ln	1668	0	1638	1753	1841	1560	1697	1781	1510	1654	0	1679
Q Serve(g_s), s	1.4	0.0	13.5	3.2	9.0	2.5	7.1	6.7	2.0	2.3	0.0	12.4
Cycle Q Clear(g_c), s	1.4	0.0	13.5	3.2	9.0	2.5	7.1	6.7	2.0	2.3	0.0	12.4
Prop In Lane	1.00		0.39	1.00		1.00	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	147	0	417	123	436	370	229	514	436	145	0	406
V/C Ratio(X)	0.25	0.00	0.83	0.69	0.62	0.19	0.80	0.42	0.14	0.40	0.00	0.80
Avail Cap(c_a), veh/h	611	0	720	642	809	685	497	1043	884	484	0	984
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.0	0.0	24.0	31.0	23.3	20.8	28.6	19.7	18.0	29.4	0.0	24.4
Incr Delay (d2), s/veh	0.9	0.0	4.2	6.7	1.4	0.3	6.4	0.5	0.1	1.8	0.0	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	5.4	1.5	3.8	0.9	3.2	2.7	0.7	0.9	0.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.9	0.0	28.2	37.7	24.7	21.1	35.0	20.2	18.1	31.2	0.0	28.1
LnGrp LOS	C	A	C	D	C	C	D	C	B	C	A	C
Approach Vol, veh/h		380			427			459			383	
Approach Delay, s/veh		28.4			26.7			25.8			28.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	23.1	13.7	22.2	10.5	21.9	10.5	25.4
Change Period (Y+Rc), s	4.5	5.7	4.5	5.7	4.5	5.7	4.5	5.7
Max Green Setting (Gmax), s	25.0	30.0	20.0	40.0	25.0	30.0	20.0	40.0
Max Q Clear Time (g_c+I1), s	5.2	15.5	9.1	14.4	3.4	11.0	4.3	8.7
Green Ext Time (p_c), s	0.2	1.8	0.4	2.1	0.1	1.7	0.1	1.5

Intersection Summary		
HCM 6th Ctrl Delay		27.3
HCM 6th LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	118	28	134	179	146	63	204	173	187	202	67
Future Volume (veh/h)	46	118	28	134	179	146	63	204	173	187	202	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1648	1648	1648	1796	1796	1796	1796	1796	1796	1767	1767	1767
Adj Flow Rate, veh/h	48	124	29	141	188	154	66	215	182	197	213	71
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	17	17	17	7	7	7	7	7	7	9	9	9
Cap, veh/h	91	443	101	179	406	314	121	398	337	243	522	442
Arrive On Green	0.06	0.18	0.18	0.10	0.22	0.22	0.07	0.22	0.22	0.14	0.30	0.30
Sat Flow, veh/h	1570	2534	576	1711	1831	1417	1711	1796	1522	1682	1767	1497
Grp Volume(v), veh/h	48	75	78	141	174	168	66	215	182	197	213	71
Grp Sat Flow(s),veh/h/ln	1570	1566	1544	1711	1706	1541	1711	1796	1522	1682	1767	1497
Q Serve(g_s), s	1.5	2.2	2.3	4.2	4.6	4.9	1.9	5.5	5.5	5.9	5.0	1.8
Cycle Q Clear(g_c), s	1.5	2.2	2.3	4.2	4.6	4.9	1.9	5.5	5.5	5.9	5.0	1.8
Prop In Lane	1.00		0.37	1.00		0.92	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	91	274	270	179	378	342	121	398	337	243	522	442
V/C Ratio(X)	0.53	0.27	0.29	0.79	0.46	0.49	0.54	0.54	0.54	0.81	0.41	0.16
Avail Cap(c_a), veh/h	907	1206	1190	989	1643	1484	989	1211	1026	972	1191	1009
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	18.6	18.6	22.7	17.5	17.6	23.3	17.9	17.9	21.5	14.7	13.5
Incr Delay (d2), s/veh	1.8	1.1	1.2	2.9	1.9	2.3	1.4	2.4	2.9	2.5	1.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.8	0.8	1.7	1.8	1.8	0.8	2.3	2.0	2.3	1.9	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.6	19.7	19.8	25.6	19.4	20.0	24.7	20.3	20.7	24.0	15.8	13.9
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	B	B
Approach Vol, veh/h		201			483			463			481	
Approach Delay, s/veh		21.2			21.4			21.1			18.8	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	14.5	7.7	20.3	7.0	16.9	11.5	16.5
Change Period (Y+Rc), s	4.0	5.4	4.0	5.0	4.0	5.4	4.0	5.0
Max Green Setting (Gmax), s	30.0	40.0	30.0	35.0	30.0	50.0	30.0	35.0
Max Q Clear Time (g_c+I1), s	6.2	4.3	3.9	7.0	3.5	6.9	7.9	7.5
Green Ext Time (p_c), s	0.1	1.8	0.0	3.0	0.0	4.6	0.1	4.0

Intersection Summary	
HCM 6th Ctrl Delay	20.5
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	12	314	10	6	266
Future Vol, veh/h	26	12	314	10	6	266
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	15	2	2	15
Mvmt Flow	28	13	341	11	7	289

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	650	347	0	0	352	0
Stage 1	347	-	-	-	-	-
Stage 2	303	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	434	696	-	-	1207	-
Stage 1	716	-	-	-	-	-
Stage 2	749	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	431	696	-	-	1207	-
Mov Cap-2 Maneuver	431	-	-	-	-	-
Stage 1	716	-	-	-	-	-
Stage 2	745	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	490	1207	-
HCM Lane V/C Ratio	-	-	0.084	0.005	-
HCM Control Delay (s)	-	-	13	8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection						
Int Delay, s/veh	1.1					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	38	15	309	12	4	288
Future Vol, veh/h	38	15	309	12	4	288
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	15	2	2	15
Mvmt Flow	41	16	336	13	4	313

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	664	343	0	0	349	0
Stage 1	343	-	-	-	-	-
Stage 2	321	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	426	700	-	-	1210	-
Stage 1	719	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	425	700	-	-	1210	-
Mov Cap-2 Maneuver	425	-	-	-	-	-
Stage 1	719	-	-	-	-	-
Stage 2	733	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	478	1210	-
HCM Lane V/C Ratio	-	-	0.121	0.004	-
HCM Control Delay (s)	-	-	13.6	8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	620	87	276	420	0	0	0	0	372	6	103
Future Volume (veh/h)	0	620	87	276	420	0	0	0	0	372	6	103
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1841	1841	0				1856	1856	1856
Adj Flow Rate, veh/h	0	705	99	314	477	0				423	7	117
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88				0.88	0.88	0.88
Percent Heavy Veh, %	0	2	2	4	4	0				3	3	3
Cap, veh/h	0	1124	156	358	943	0				467	8	129
Arrive On Green	0.00	0.25	0.25	0.20	0.51	0.00				0.35	0.35	0.35
Sat Flow, veh/h	0	4699	630	1753	1841	0				1332	22	368
Grp Volume(v), veh/h	0	528	276	314	477	0				547	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1757	1753	1841	0				1723	0	0
Q Serve(g_s), s	0.0	9.2	9.4	11.6	11.4	0.0				20.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	9.2	9.4	11.6	11.4	0.0				20.2	0.0	0.0
Prop In Lane	0.00		0.36	1.00		0.00				0.77		0.21
Lane Grp Cap(c), veh/h	0	845	436	358	943	0				604	0	0
V/C Ratio(X)	0.00	0.63	0.63	0.88	0.51	0.00				0.91	0.00	0.00
Avail Cap(c_a), veh/h	0	1780	919	524	962	0				901	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	22.4	22.4	25.8	10.7	0.0				20.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	1.4	8.2	0.4	0.0				6.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.6	3.8	5.4	4.1	0.0				8.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	23.1	23.8	34.0	11.1	0.0				27.6	0.0	0.0
LnGrp LOS	A	C	C	C	B	A				C	A	A
Approach Vol, veh/h		804			791						547	
Approach Delay, s/veh		23.3			20.2						27.6	
Approach LOS		C			C						C	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	17.7	21.2		28.1		38.9						
Change Period (Y+Rc), s	4.0	4.6		4.6		4.6						
Max Green Setting (Gmax), s	20.0	35.0		35.0		35.0						
Max Q Clear Time (g_c+I1), s	13.6	11.4		22.2		13.4						
Green Ext Time (p_c), s	0.1	5.2		1.2		2.8						
Intersection Summary												
HCM 6th Ctrl Delay			23.3									
HCM 6th LOS			C									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	904	0	0	628	283	68	4	422	0	0	0
Future Volume (veh/h)	88	904	0	0	628	283	68	4	422	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1796	1796	1796			
Adj Flow Rate, veh/h	98	1004	0	0	698	314	76	4	469			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	3	3	0	0	3	3	7	7	7			
Cap, veh/h	126	1735	0	0	866	390	82	4	505			
Arrive On Green	0.07	0.49	0.00	0.00	0.37	0.37	0.38	0.38	0.38			
Sat Flow, veh/h	1767	3618	0	0	2456	1063	214	11	1322			
Grp Volume(v), veh/h	98	1004	0	0	521	491	549	0	0			
Grp Sat Flow(s),veh/h/ln	1767	1763	0	0	1763	1664	1548	0	0			
Q Serve(g_s), s	4.0	14.8	0.0	0.0	19.4	19.4	24.9	0.0	0.0			
Cycle Q Clear(g_c), s	4.0	14.8	0.0	0.0	19.4	19.4	24.9	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.64	0.14		0.85			
Lane Grp Cap(c), veh/h	126	1735	0	0	646	610	592	0	0			
V/C Ratio(X)	0.78	0.58	0.00	0.00	0.81	0.81	0.93	0.00	0.00			
Avail Cap(c_a), veh/h	483	1735	0	0	842	795	739	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	33.5	13.2	0.0	0.0	20.9	20.9	21.7	0.0	0.0			
Incr Delay (d2), s/veh	3.9	0.5	0.0	0.0	4.2	4.5	14.3	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.8	5.3	0.0	0.0	8.2	7.8	10.6	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.4	13.7	0.0	0.0	25.1	25.4	36.0	0.0	0.0			
LnGrp LOS	D	B	A	A	C	C	D	A	A			
Approach Vol, veh/h		1102			1012			549				
Approach Delay, s/veh		15.8			25.2			36.0				
Approach LOS		B			C			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		40.6			9.2	31.4		32.6				
Change Period (Y+Rc), s		4.6			4.0	4.6		4.6				
Max Green Setting (Gmax), s		35.0			20.0	35.0		35.0				
Max Q Clear Time (g_c+I1), s		16.8			6.0	21.4		26.9				
Green Ext Time (p_c), s		6.6			0.0	5.4		1.1				
Intersection Summary												
HCM 6th Ctrl Delay			23.5									
HCM 6th LOS			C									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	535	170	67	373	73	74	272	127	122	265	92
Future Volume (veh/h)	107	535	170	67	373	73	74	272	127	122	265	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1767	1767	1767	1826	1826	1826	1781	1781	1781
Adj Flow Rate, veh/h	113	563	179	71	393	77	78	286	134	128	279	97
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	9	9	9	5	5	5	8	8	8
Cap, veh/h	148	624	528	91	437	86	103	349	163	160	591	501
Arrive On Green	0.08	0.33	0.33	0.05	0.30	0.30	0.06	0.30	0.30	0.09	0.33	0.33
Sat Flow, veh/h	1781	1870	1585	1682	1435	281	1739	1176	551	1697	1781	1510
Grp Volume(v), veh/h	113	563	179	71	0	470	78	0	420	128	279	97
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1682	0	1716	1739	0	1727	1697	1781	1510
Q Serve(g_s), s	5.6	25.9	7.7	3.8	0.0	23.7	4.0	0.0	20.4	6.7	11.2	4.1
Cycle Q Clear(g_c), s	5.6	25.9	7.7	3.8	0.0	23.7	4.0	0.0	20.4	6.7	11.2	4.1
Prop In Lane	1.00		1.00	1.00		0.16	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	148	624	528	91	0	523	103	0	512	160	591	501
V/C Ratio(X)	0.76	0.90	0.34	0.78	0.00	0.90	0.76	0.00	0.82	0.80	0.47	0.19
Avail Cap(c_a), veh/h	394	624	528	373	0	570	385	0	746	376	756	640
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	28.7	22.6	42.2	0.0	30.1	41.8	0.0	29.5	40.0	23.9	21.5
Incr Delay (d2), s/veh	12.1	17.2	0.8	13.3	0.0	17.9	16.4	0.0	7.8	8.7	1.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	14.1	2.9	1.9	0.0	12.0	2.2	0.0	9.3	3.1	4.8	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.7	45.9	23.4	55.5	0.0	48.0	58.2	0.0	37.3	48.8	25.2	21.9
LnGrp LOS	D	D	C	E	A	D	E	A	D	D	C	C
Approach Vol, veh/h		855			541			498			504	
Approach Delay, s/veh		42.1			49.0			40.6			30.5	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	36.1	12.5	32.8	11.5	33.5	9.3	36.0
Change Period (Y+Rc), s	4.0	6.0	4.0	* 6	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	20.0	30.0	20.0	* 39	20.0	30.0	20.0	38.3
Max Q Clear Time (g_c+I1), s	5.8	27.9	8.7	22.4	7.6	25.7	6.0	13.2
Green Ext Time (p_c), s	0.1	1.3	0.2	4.3	0.4	1.8	0.2	4.0

Intersection Summary	
HCM 6th Ctrl Delay	40.9
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	849	101	83	515	36	106	0	432	83	373	272
Future Volume (veh/h)	0	849	101	83	515	36	106	0	432	83	373	272
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1841	1841	1841	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	913	109	89	554	39	114	0	465	89	401	292
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	3	3	4	4	4	2	0	2	2	2	2
Cap, veh/h	0	1733	538	202	1652	737	151	0	0	117	689	541
Arrive On Green	0.00	0.34	0.34	0.06	0.47	0.47	0.08	0.00	0.00	0.07	0.19	0.19
Sat Flow, veh/h	0	5233	1572	3401	3497	1560	1781	114		1781	3554	2790
Grp Volume(v), veh/h	0	913	109	89	554	39	114	41.7		89	401	292
Grp Sat Flow(s),veh/h/ln	0	1689	1572	1700	1749	1560	1781	D		1781	1777	1395
Q Serve(g_s), s	0.0	10.0	3.4	1.7	6.9	0.9	4.3			3.4	7.1	6.5
Cycle Q Clear(g_c), s	0.0	10.0	3.4	1.7	6.9	0.9	4.3			3.4	7.1	6.5
Prop In Lane	0.00		1.00	1.00		1.00	1.00			1.00		1.00
Lane Grp Cap(c), veh/h	0	1733	538	202	1652	737	151			117	689	541
V/C Ratio(X)	0.00	0.53	0.20	0.44	0.34	0.05	0.76			0.76	0.58	0.54
Avail Cap(c_a), veh/h	0	3668	1139	739	2532	1130	387			387	1544	1212
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	18.2	16.1	31.4	11.4	9.9	30.9			31.7	25.3	25.1
Incr Delay (d2), s/veh	0.0	0.3	0.3	1.7	0.2	0.0	10.8			10.9	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.7	1.2	0.7	2.4	0.3	2.2			1.8	2.9	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	18.6	16.3	33.1	11.6	9.9	41.7			42.6	26.2	26.0
LnGrp LOS	A	B	B	C	B	A	D			D	C	C
Approach Vol, veh/h		1022			682						782	
Approach Delay, s/veh		18.3			14.3						28.0	
Approach LOS		B			B						C	
Timer - Assigned Phs	1	2	3	4		6	7					
Phs Duration (G+Y+Rc), s	9.0	29.6	10.5	19.9		38.6	9.2					
Change Period (Y+Rc), s	4.9	* 6	* 4.7	6.5		6.0	* 4.7					
Max Green Setting (Gmax), s	15.0	* 50	* 15	30.0		50.0	* 15					
Max Q Clear Time (g_c+I1), s	3.7	12.0	6.3	9.1		8.9	5.4					
Green Ext Time (p_c), s	0.2	11.6	0.3	4.3		6.2	0.1					

Intersection Summary		
HCM 6th Ctrl Delay		21.2
HCM 6th LOS		C

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	402	553	54	268	366	50
Future Volume (veh/h)	402	553	54	268	366	50
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	442	0	59	295	402	55
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	5	5
Cap, veh/h	1010		111	1635	758	348
Arrive On Green	0.28	0.00	0.06	0.46	0.22	0.22
Sat Flow, veh/h	3647	1585	1781	3647	3374	1547
Grp Volume(v), veh/h	442	0	59	295	402	55
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1687	1547
Q Serve(g_s), s	3.6	0.0	1.1	1.7	3.7	1.0
Cycle Q Clear(g_c), s	3.6	0.0	1.1	1.7	3.7	1.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1010		111	1635	758	348
V/C Ratio(X)	0.44		0.53	0.18	0.53	0.16
Avail Cap(c_a), veh/h	2524		759	2524	1438	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.3	0.0	16.0	5.6	12.0	11.0
Incr Delay (d2), s/veh	0.1	0.0	1.5	0.0	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.4	0.4	1.1	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.4	0.0	17.5	5.6	12.2	11.0
LnGrp LOS	B		B	A	B	B
Approach Vol, veh/h	442	A		354	457	
Approach Delay, s/veh	10.4			7.6	12.1	
Approach LOS	B			A	B	

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.2	16.2				22.4		12.8
Change Period (Y+Rc), s	4.0	* 6.2				6.2		4.9
Max Green Setting (Gmax), s	15.0	* 25				25.0		15.0
Max Q Clear Time (g_c+I1), s	3.1	5.6				3.7		5.7
Green Ext Time (p_c), s	0.0	0.6				0.4		0.3

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

Notes

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

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	137	178	88	287	277	63
Future Volume (veh/h)	137	178	88	287	277	63
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1604	1604	1781	1781	1648	1648
Adj Flow Rate, veh/h	156	202	100	326	315	72
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	20	20	8	8	17	17
Cap, veh/h	318	283	132	875	764	172
Arrive On Green	0.21	0.21	0.08	0.49	0.30	0.30
Sat Flow, veh/h	1527	1359	1697	1781	2621	572
Grp Volume(v), veh/h	156	202	100	326	193	194
Grp Sat Flow(s),veh/h/ln	1527	1359	1697	1781	1566	1545
Q Serve(g_s), s	3.6	5.5	2.3	4.6	3.9	4.0
Cycle Q Clear(g_c), s	3.6	5.5	2.3	4.6	3.9	4.0
Prop In Lane	1.00	1.00	1.00			0.37
Lane Grp Cap(c), veh/h	318	283	132	875	471	465
V/C Ratio(X)	0.49	0.71	0.76	0.37	0.41	0.42
Avail Cap(c_a), veh/h	765	680	849	1561	1372	1354
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.9	14.7	18.1	6.3	11.1	11.2
Incr Delay (d2), s/veh	1.2	3.3	12.0	1.0	2.1	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.7	1.2	1.3	1.3	1.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.1	18.0	30.1	7.3	13.2	13.3
LnGrp LOS	B	B	C	A	B	B
Approach Vol, veh/h	358			426	387	
Approach Delay, s/veh	16.8			12.6	13.3	
Approach LOS	B			B	B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	7.6	18.0		14.3		25.6
Change Period (Y+Rc), s	4.5	6.0		6.0		6.0
Max Green Setting (Gmax), s	20.0	35.0		20.0		35.0
Max Q Clear Time (g_c+I1), s	4.3	6.0		7.5		6.6
Green Ext Time (p_c), s	0.3	6.0		1.0		5.1

Intersection Summary				
HCM 6th Ctrl Delay			14.1	
HCM 6th LOS			B	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	336	165	74	228	61	165	407	165	113	324	63
Future Volume (veh/h)	85	336	165	74	228	61	165	407	165	113	324	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1826	1826	1826	1811	1811	1811
Adj Flow Rate, veh/h	88	346	170	76	235	63	170	420	170	116	334	65
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	2	2	2	5	5	5	6	6	6
Cap, veh/h	130	376	185	104	569	482	209	539	457	157	392	76
Arrive On Green	0.07	0.32	0.32	0.06	0.30	0.30	0.12	0.30	0.30	0.09	0.27	0.27
Sat Flow, veh/h	1767	1175	577	1781	1870	1585	1739	1826	1547	1725	1473	287
Grp Volume(v), veh/h	88	0	516	76	235	63	170	420	170	116	0	399
Grp Sat Flow(s),veh/h/ln	1767	0	1752	1781	1870	1585	1739	1826	1547	1725	0	1759
Q Serve(g_s), s	4.2	0.0	24.6	3.6	8.7	2.5	8.3	18.2	7.5	5.7	0.0	18.6
Cycle Q Clear(g_c), s	4.2	0.0	24.6	3.6	8.7	2.5	8.3	18.2	7.5	5.7	0.0	18.6
Prop In Lane	1.00		0.33	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	130	0	560	104	569	482	209	539	457	157	0	468
V/C Ratio(X)	0.68	0.00	0.92	0.73	0.41	0.13	0.82	0.78	0.37	0.74	0.00	0.85
Avail Cap(c_a), veh/h	511	0	607	515	648	550	402	844	715	399	0	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.1	0.0	28.4	40.1	23.9	21.8	37.1	27.9	24.1	38.3	0.0	30.1
Incr Delay (d2), s/veh	6.0	0.0	18.7	9.6	0.5	0.1	7.5	2.5	0.5	6.6	0.0	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	12.8	1.8	3.8	0.9	3.9	8.0	2.7	2.6	0.0	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.0	0.0	47.1	49.6	24.4	21.9	44.7	30.4	24.7	45.0	0.0	34.6
LnGrp LOS	D	A	D	D	C	C	D	C	C	D	A	C
Approach Vol, veh/h		604			374			760			515	
Approach Delay, s/veh		46.8			29.1			32.3			36.9	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	33.4	14.9	28.7	10.9	32.0	12.4	31.2
Change Period (Y+Rc), s	4.5	5.7	4.5	5.7	4.5	5.7	4.5	5.7
Max Green Setting (Gmax), s	25.0	30.0	20.0	40.0	25.0	30.0	20.0	40.0
Max Q Clear Time (g_c+I1), s	15.6	26.6	10.3	20.6	6.2	10.7	7.7	20.2
Green Ext Time (p_c), s	0.1	1.1	0.3	2.4	0.2	1.5	0.2	3.1

Intersection Summary		
HCM 6th Ctrl Delay		36.7
HCM 6th LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	186	324	60	244	222	321	39	318	203	213	337	60
Future Volume (veh/h)	186	324	60	244	222	321	39	318	203	213	337	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1856	1856	1856	1841	1841	1841	1826	1826	1826
Adj Flow Rate, veh/h	196	341	63	257	234	338	41	335	214	224	355	63
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	5	5	5
Cap, veh/h	228	766	140	289	516	461	73	441	374	256	631	535
Arrive On Green	0.13	0.26	0.26	0.16	0.29	0.29	0.04	0.24	0.24	0.15	0.35	0.35
Sat Flow, veh/h	1753	2953	540	1767	1763	1572	1753	1841	1560	1739	1826	1547
Grp Volume(v), veh/h	196	200	204	257	234	338	41	335	214	224	355	63
Grp Sat Flow(s),veh/h/ln	1753	1749	1744	1767	1763	1572	1753	1841	1560	1739	1826	1547
Q Serve(g_s), s	10.6	9.3	9.5	13.8	10.5	18.8	2.2	16.4	11.7	12.2	15.3	2.7
Cycle Q Clear(g_c), s	10.6	9.3	9.5	13.8	10.5	18.8	2.2	16.4	11.7	12.2	15.3	2.7
Prop In Lane	1.00		0.31	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	228	454	452	289	516	461	73	441	374	256	631	535
V/C Ratio(X)	0.86	0.44	0.45	0.89	0.45	0.73	0.57	0.76	0.57	0.87	0.56	0.12
Avail Cap(c_a), veh/h	543	722	720	547	909	811	543	665	563	538	659	559
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.3	30.0	30.1	39.6	27.9	30.9	45.6	34.2	32.5	40.4	25.8	21.6
Incr Delay (d2), s/veh	3.6	1.4	1.5	3.7	1.3	4.8	2.5	5.7	2.9	3.7	1.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	4.0	4.1	6.2	4.6	7.6	1.0	7.9	4.7	5.4	6.8	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.9	31.5	31.6	43.3	29.3	35.6	48.1	40.0	35.4	44.1	27.6	21.8
LnGrp LOS	D	C	C	D	C	D	D	D	D	D	C	C
Approach Vol, veh/h		600			829			590			642	
Approach Delay, s/veh		35.9			36.2			38.9			32.8	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.9	30.5	8.0	38.5	16.6	33.8	18.3	28.2
Change Period (Y+Rc), s	4.0	5.4	4.0	5.0	4.0	5.4	4.0	5.0
Max Green Setting (Gmax), s	30.0	40.0	30.0	35.0	30.0	50.0	30.0	35.0
Max Q Clear Time (g_c+I1), s	15.8	11.5	4.2	17.3	12.6	20.8	14.2	18.4
Green Ext Time (p_c), s	0.1	4.9	0.0	4.1	0.1	7.6	0.1	4.8

Intersection Summary	
HCM 6th Ctrl Delay	35.9
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	18	8	373	33	17	447
Future Vol, veh/h	18	8	373	33	17	447
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	9	405	36	18	486

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	945	423	0	0	441	0
Stage 1	423	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	291	631	-	-	1119	-
Stage 1	661	-	-	-	-	-
Stage 2	595	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	286	631	-	-	1119	-
Mov Cap-2 Maneuver	286	-	-	-	-	-
Stage 1	661	-	-	-	-	-
Stage 2	585	-	-	-	-	-

Approach	WB		NB		SB	
HCM Control Delay, s	16.4		0		0.3	
HCM LOS	C					

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	344	1119	-
HCM Lane V/C Ratio	-	-	0.082	0.017	-
HCM Control Delay (s)	-	-	16.4	8.3	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	10	396	41	13	452
Future Vol, veh/h	26	10	396	41	13	452
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	11	430	45	14	491

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	972	453	0	0	475	0
Stage 1	453	-	-	-	-	-
Stage 2	519	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	280	607	-	-	1087	-
Stage 1	640	-	-	-	-	-
Stage 2	597	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	276	607	-	-	1087	-
Mov Cap-2 Maneuver	276	-	-	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	589	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.6	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	325	1087	-
HCM Lane V/C Ratio	-	-	0.12	0.013	-
HCM Control Delay (s)	-	-	17.6	8.4	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0	-

CUMULATIVE CONDITIONS SYNCHRO RESULTS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1941	1427	348	2480	0	0	0	0	259	3	1186
Future Volume (veh/h)	0	1941	1427	348	2480	0	0	0	0	259	3	1186
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1841	1841	0				1856	1856	1856
Adj Flow Rate, veh/h	0	2206	1622	395	2818	0				294	3	1348
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88				0.88	0.88	0.88
Percent Heavy Veh, %	0	2	2	4	4	0				3	3	3
Cap, veh/h	0	1303	607	187	950	0				121	1	556
Arrive On Green	0.00	0.38	0.38	0.11	0.52	0.00				0.42	0.42	0.42
Sat Flow, veh/h	0	3572	1585	1753	1841	0				287	3	1315
Grp Volume(v), veh/h	0	2206	1622	395	2818	0				1645	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1585	1753	1841	0				1605	0	0
Q Serve(g_s), s	0.0	57.4	57.4	16.0	77.4	0.0				63.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	57.4	57.4	16.0	77.4	0.0				63.4	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				0.18		0.82
Lane Grp Cap(c), veh/h	0	1303	607	187	950	0				678	0	0
V/C Ratio(X)	0.00	1.69	2.67	2.11	2.97	0.00				2.43	0.00	0.00
Avail Cap(c_a), veh/h	0	1303	607	187	950	0				678	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	46.3	46.3	67.0	36.3	0.0				43.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	315.4	758.1	502.2	885.4	0.0				646.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	81.1	150.2	33.3	267.5	0.0				146.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	361.7	804.4	569.2	921.7	0.0				689.3	0.0	0.0
LnGrp LOS	A	F	F	F	F	A				F	A	A
Approach Vol, veh/h		3828			3213						1645	
Approach Delay, s/veh		549.3			878.3						689.3	
Approach LOS		F			F						F	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	20.0	62.0		68.0		82.0						
Change Period (Y+Rc), s	4.0	4.6		4.6		4.6						
Max Green Setting (Gmax), s	16.0	57.4		63.4		77.4						
Max Q Clear Time (g_c+I1), s	18.0	59.4		65.4		79.4						
Green Ext Time (p_c), s	0.0	0.0		0.0		0.0						

Intersection Summary			
HCM 6th Ctrl Delay			697.5
HCM 6th LOS			F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	344	1856	0	0	2090	576	738	2	313	0	0	0
Future Volume (veh/h)	344	1856	0	0	2090	576	738	2	313	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1796	1796	1796			
Adj Flow Rate, veh/h	382	2062	0	0	2322	640	820	2	348			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	3	3	0	0	3	3	7	7	7			
Cap, veh/h	188	2078	0	0	1259	331	404	1	171			
Arrive On Green	0.21	1.00	0.00	0.00	0.46	0.46	0.35	0.35	0.35			
Sat Flow, veh/h	1767	3618	0	0	2854	727	1156	3	491			
Grp Volume(v), veh/h	382	2062	0	0	1443	1519	1170	0	0			
Grp Sat Flow(s),veh/h/ln	1767	1763	0	0	1763	1725	1650	0	0			
Q Serve(g_s), s	16.0	0.0	0.0	0.0	68.4	68.4	52.4	0.0	0.0			
Cycle Q Clear(g_c), s	16.0	0.0	0.0	0.0	68.4	68.4	52.4	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.42	0.70		0.30			
Lane Grp Cap(c), veh/h	188	2078	0	0	804	786	576	0	0			
V/C Ratio(X)	2.03	0.99	0.00	0.00	1.80	1.93	2.03	0.00	0.00			
Avail Cap(c_a), veh/h	188	2078	0	0	804	786	576	0	0			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	59.0	0.0	0.0	0.0	40.8	40.8	48.8	0.0	0.0			
Incr Delay (d2), s/veh	463.6	4.4	0.0	0.0	362.8	423.8	469.5	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	30.7	1.3	0.0	0.0	110.2	121.2	96.6	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	522.6	4.4	0.0	0.0	403.6	464.6	518.3	0.0	0.0			
LnGrp LOS	F	A	A	A	F	F	F	A	A			
Approach Vol, veh/h		2444			2962			1170				
Approach Delay, s/veh		85.4			434.9			518.3				
Approach LOS		F			F			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		93.0			20.0	73.0		57.0				
Change Period (Y+Rc), s		4.6			4.0	4.6		4.6				
Max Green Setting (Gmax), s		88.4			16.0	68.4		52.4				
Max Q Clear Time (g_c+I1), s		2.0			18.0	70.4		54.4				
Green Ext Time (p_c), s		37.2			0.0	0.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			319.8
HCM 6th LOS			F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	1021	225	103	1274	65	526	361	146	74	488	105
Future Volume (veh/h)	114	1021	225	103	1274	65	526	361	146	74	488	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1767	1767	1767	1826	1826	1826	1781	1781	1781
Adj Flow Rate, veh/h	120	1075	237	108	1341	68	554	380	154	78	514	111
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	9	9	9	5	5	5	8	8	8
Cap, veh/h	131	1572	976	129	1496	720	585	1084	602	117	590	374
Arrive On Green	0.07	0.44	0.44	0.08	0.45	0.45	0.17	0.31	0.31	0.04	0.17	0.17
Sat Flow, veh/h	1781	3554	1585	1682	3357	1497	3374	3469	1547	3291	3385	1510
Grp Volume(v), veh/h	120	1075	237	108	1341	68	554	380	154	78	514	111
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1682	1678	1497	1687	1735	1547	1646	1692	1510
Q Serve(g_s), s	10.0	36.3	10.1	9.5	55.3	3.7	24.4	12.7	10.1	3.5	22.2	9.0
Cycle Q Clear(g_c), s	10.0	36.3	10.1	9.5	55.3	3.7	24.4	12.7	10.1	3.5	22.2	9.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	131	1572	976	129	1496	720	585	1084	602	117	590	374
V/C Ratio(X)	0.92	0.68	0.24	0.84	0.90	0.09	0.95	0.35	0.26	0.67	0.87	0.30
Avail Cap(c_a), veh/h	131	1572	976	191	1496	720	585	1103	610	154	632	393
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.85	0.85	0.85	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.1	33.4	13.0	68.3	38.4	21.2	61.3	39.8	31.1	71.5	60.3	45.8
Incr Delay (d2), s/veh	55.3	2.4	0.6	16.2	7.6	0.2	23.2	0.4	0.4	6.8	13.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	16.2	3.8	4.7	24.2	1.4	12.3	5.6	3.9	1.6	10.6	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	124.4	35.9	13.6	84.5	46.0	21.4	84.5	40.2	31.5	78.3	73.6	46.7
LnGrp LOS	F	D	B	F	D	C	F	D	C	E	E	D
Approach Vol, veh/h		1432			1517			1088			703	
Approach Delay, s/veh		39.6			47.7			61.5			69.9	
Approach LOS		D			D			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.5	72.4	9.3	52.8	15.0	72.8	30.0	32.2				
Change Period (Y+Rc), s	4.0	6.0	4.0	* 6	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	17.0	59.0	7.0	* 48	11.0	65.0	26.0	28.0				
Max Q Clear Time (g_c+I1), s	11.5	38.3	5.5	14.7	12.0	57.3	26.4	24.2				
Green Ext Time (p_c), s	0.1	14.2	0.0	6.5	0.0	6.6	0.0	2.0				
Intersection Summary												
HCM 6th Ctrl Delay			51.7									
HCM 6th LOS			D									

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1593	194	153	1100	44	146	0	364	53	506	429
Future Volume (veh/h)	0	1593	194	153	1100	44	146	0	364	53	506	429
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1841	1841	1841	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1713	209	165	1183	47	157	0	391	57	544	461
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	3	3	4	4	4	2	0	2	2	2	2
Cap, veh/h	0	2229	692	223	1914	918	188	0	0	74	714	561
Arrive On Green	0.00	0.44	0.44	0.07	0.55	0.55	0.11	0.00	0.00	0.04	0.20	0.20
Sat Flow, veh/h	0	5233	1572	3401	3497	1560	1781	157		1781	3554	2790
Grp Volume(v), veh/h	0	1713	209	165	1183	47	157	69.0		57	544	461
Grp Sat Flow(s),veh/h/ln	0	1689	1572	1700	1749	1560	1781	E		1781	1777	1395
Q Serve(g_s), s	0.0	33.6	10.1	5.6	27.2	1.5	10.2			3.7	17.0	18.6
Cycle Q Clear(g_c), s	0.0	33.6	10.1	5.6	27.2	1.5	10.2			3.7	17.0	18.6
Prop In Lane	0.00		1.00	1.00		1.00	1.00			1.00		1.00
Lane Grp Cap(c), veh/h	0	2229	692	223	1914	918	188			74	714	561
V/C Ratio(X)	0.00	0.77	0.30	0.74	0.62	0.05	0.84			0.77	0.76	0.82
Avail Cap(c_a), veh/h	0	2416	750	287	2103	1002	267			150	802	630
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	27.8	21.2	53.9	18.2	10.2	51.5			55.7	44.3	44.9
Incr Delay (d2), s/veh	0.0	1.6	0.3	7.8	0.6	0.0	17.4			17.3	4.0	8.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.6	3.8	2.6	10.8	0.5	5.4			2.0	7.8	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	29.4	21.6	61.7	18.8	10.3	69.0			73.1	48.2	52.9
LnGrp LOS	A	C	C	E	B	B	E			E	D	D
Approach Vol, veh/h		1922			1395						1062	
Approach Delay, s/veh		28.5			23.6						51.6	
Approach LOS		C			C						D	

Timer - Assigned Phs	1	2	3	4		6	7
Phs Duration (G+Y+Rc), s	12.6	57.7	17.1	30.1		70.3	9.6
Change Period (Y+Rc), s	4.9	* 6	* 4.7	6.5		6.0	* 4.7
Max Green Setting (Gmax), s	9.9	* 56	* 18	26.5		70.6	* 9.9
Max Q Clear Time (g_c+I1), s	7.6	35.6	12.2	20.6		29.2	5.7
Green Ext Time (p_c), s	0.1	16.1	0.3	3.0		16.7	0.0

Intersection Summary	
HCM 6th Ctrl Delay	33.8
HCM 6th LOS	C

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	327	766	92	365	932	46
Future Volume (veh/h)	327	766	92	365	932	46
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	359	0	101	401	1024	51
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	5	5
Cap, veh/h	808		144	1418	1176	539
Arrive On Green	0.23	0.00	0.08	0.40	0.35	0.35
Sat Flow, veh/h	3647	1585	1781	3647	3374	1547
Grp Volume(v), veh/h	359	0	101	401	1024	51
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1687	1547
Q Serve(g_s), s	3.8	0.0	2.4	3.4	12.5	1.0
Cycle Q Clear(g_c), s	3.8	0.0	2.4	3.4	12.5	1.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	808		144	1418	1176	539
V/C Ratio(X)	0.44		0.70	0.28	0.87	0.09
Avail Cap(c_a), veh/h	1123		324	2061	2539	1165
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.6	0.0	19.7	9.0	13.4	9.6
Incr Delay (d2), s/veh	0.1	0.0	2.3	0.0	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	1.0	1.0	3.9	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.7	0.0	22.0	9.0	14.2	9.7
LnGrp LOS	B		C	A	B	A
Approach Vol, veh/h	359	A		502	1075	
Approach Delay, s/veh	14.7			11.6	14.0	
Approach LOS	B			B	B	

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.5	16.2				23.7		20.2
Change Period (Y+Rc), s	4.0	* 6.2				6.2		4.9
Max Green Setting (Gmax), s	8.0	* 14				25.5		33.1
Max Q Clear Time (g_c+I1), s	4.4	5.8				5.4		14.5
Green Ext Time (p_c), s	0.0	0.4				0.5		0.8

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	171	66	64	482	461	462
Future Volume (veh/h)	171	66	64	482	461	462
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1604	1604	1781	1781	1648	1648
Adj Flow Rate, veh/h	194	75	73	548	524	525
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	20	20	8	8	17	17
Cap, veh/h	300	242	93	2418	924	825
Arrive On Green	0.10	0.10	0.05	0.71	0.59	0.59
Sat Flow, veh/h	2963	2392	1697	3474	1648	1397
Grp Volume(v), veh/h	194	75	73	548	524	525
Grp Sat Flow(s),veh/h/ln	1481	1196	1697	1692	1566	1397
Q Serve(g_s), s	4.1	1.9	2.8	3.6	13.4	16.0
Cycle Q Clear(g_c), s	4.1	1.9	2.8	3.6	13.4	16.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	300	242	93	2418	924	825
V/C Ratio(X)	0.65	0.31	0.79	0.23	0.57	0.64
Avail Cap(c_a), veh/h	592	478	274	3460	1239	1106
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.1	27.1	30.4	3.2	8.2	8.7
Incr Delay (d2), s/veh	2.3	0.7	18.4	0.2	2.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.5	1.6	0.8	4.1	4.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.4	27.8	48.8	3.3	10.2	11.7
LnGrp LOS	C	C	D	A	B	B
Approach Vol, veh/h	269			621	1049	
Approach Delay, s/veh	29.7			8.7	10.9	
Approach LOS	C			A	B	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	8.1	44.4		12.6		52.5
Change Period (Y+Rc), s	4.5	6.0		6.0		6.0
Max Green Setting (Gmax), s	10.5	51.5		13.0		66.5
Max Q Clear Time (g_c+I1), s	4.8	18.0		6.1		5.6
Green Ext Time (p_c), s	0.1	20.4		0.5		11.5

Intersection Summary						
HCM 6th Ctrl Delay			12.8			
HCM 6th LOS			B			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	649	383	212	615	128	517	545	146	135	714	124
Future Volume (veh/h)	147	649	383	212	615	128	517	545	146	135	714	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1826	1826	1826	1811	1811	1811
Adj Flow Rate, veh/h	152	669	395	219	634	132	533	562	151	139	736	128
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	2	2	2	5	5	5	6	6	6
Cap, veh/h	167	678	778	223	793	506	526	1490	858	166	768	488
Arrive On Green	0.09	0.19	0.19	0.13	0.22	0.22	0.30	0.43	0.43	0.10	0.22	0.22
Sat Flow, veh/h	1767	3526	1572	1781	3554	1585	1739	3469	1547	1725	3441	1535
Grp Volume(v), veh/h	152	669	395	219	634	132	533	562	151	139	736	128
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1781	1777	1585	1739	1735	1547	1725	1721	1535
Q Serve(g_s), s	11.1	24.6	22.0	15.9	21.9	8.0	39.3	14.3	6.3	10.3	27.5	8.1
Cycle Q Clear(g_c), s	11.1	24.6	22.0	15.9	21.9	8.0	39.3	14.3	6.3	10.3	27.5	8.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	167	678	778	223	793	506	526	1490	858	166	768	488
V/C Ratio(X)	0.91	0.99	0.51	0.98	0.80	0.26	1.01	0.38	0.18	0.84	0.96	0.26
Avail Cap(c_a), veh/h	167	678	778	223	793	506	526	1490	858	252	768	488
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.71	0.71	0.71
Uniform Delay (d), s/veh	58.3	52.3	22.2	56.7	47.8	32.9	45.4	25.3	14.3	57.8	49.9	33.0
Incr Delay (d2), s/veh	44.3	31.5	2.4	54.5	8.3	1.3	42.8	0.2	0.1	10.5	18.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	13.8	8.6	10.5	10.6	3.3	23.0	6.0	2.2	5.0	13.7	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	102.6	83.8	24.5	111.2	56.1	34.1	88.1	25.4	14.4	68.2	68.2	33.2
LnGrp LOS	F	F	C	F	E	C	F	C	B	E	E	C
Approach Vol, veh/h		1216			985			1246			1003	
Approach Delay, s/veh		66.9			65.4			50.9			63.7	
Approach LOS		E			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.8	30.7	43.8	34.7	16.8	34.7	17.0	61.5
Change Period (Y+Rc), s	4.5	5.7	4.5	5.7	4.5	5.7	4.5	5.7
Max Green Setting (Gmax), s	16.3	25.0	39.3	29.0	12.3	29.0	19.0	49.3
Max Q Clear Time (g_c+I1), s	17.9	26.6	41.3	29.5	13.1	23.9	12.3	16.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.1	0.2	4.8

Intersection Summary	
HCM 6th Ctrl Delay	61.4
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	247	312	104	440	796	294	309	463	418	318	484	517
Future Volume (veh/h)	247	312	104	440	796	294	309	463	418	318	484	517
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1856	1856	1856	1841	1841	1841	1826	1826	1826
Adj Flow Rate, veh/h	260	328	109	463	838	309	325	487	440	335	509	544
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	5	5	5
Cap, veh/h	253	878	392	457	846	377	312	816	572	309	809	585
Arrive On Green	0.14	0.25	0.25	0.13	0.24	0.24	0.18	0.23	0.23	0.18	0.23	0.23
Sat Flow, veh/h	1753	3497	1560	3428	3526	1572	1753	3497	1560	1739	3469	1547
Grp Volume(v), veh/h	260	328	109	463	838	309	325	487	440	335	509	544
Grp Sat Flow(s),veh/h/ln	1753	1749	1560	1714	1763	1572	1753	1749	1560	1739	1735	1547
Q Serve(g_s), s	13.0	7.0	5.1	12.0	21.3	16.7	16.0	11.2	21.0	16.0	11.9	21.0
Cycle Q Clear(g_c), s	13.0	7.0	5.1	12.0	21.3	16.7	16.0	11.2	21.0	16.0	11.9	21.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	253	878	392	457	846	377	312	816	572	309	809	585
V/C Ratio(X)	1.03	0.37	0.28	1.01	0.99	0.82	1.04	0.60	0.77	1.08	0.63	0.93
Avail Cap(c_a), veh/h	253	878	392	457	846	377	312	816	572	309	809	585
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	27.8	27.1	39.0	34.1	32.3	37.0	30.7	25.1	37.0	31.0	26.9
Incr Delay (d2), s/veh	63.6	1.2	1.8	45.4	28.7	17.7	62.6	1.8	7.4	75.3	2.2	22.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.9	3.0	2.0	7.8	12.2	8.0	12.1	4.8	9.1	13.1	5.1	14.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	102.1	29.1	28.9	84.4	62.8	50.1	99.6	32.6	32.5	112.3	33.2	49.2
LnGrp LOS	F	C	C	F	E	D	F	C	C	F	C	D
Approach Vol, veh/h		697			1610			1252			1388	
Approach Delay, s/veh		56.3			66.6			49.9			58.6	
Approach LOS		E			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	28.0	20.0	26.0	17.0	27.0	20.0	26.0
Change Period (Y+Rc), s	4.0	5.4	4.0	5.0	4.0	5.4	4.0	5.0
Max Green Setting (Gmax), s	12.0	22.6	16.0	21.0	13.0	21.6	16.0	21.0
Max Q Clear Time (g_c+I1), s	14.0	9.0	18.0	23.0	15.0	23.3	18.0	23.0
Green Ext Time (p_c), s	0.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	58.7
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2961	1843	266	2989	0	0	0	0	372	6	760
Future Volume (veh/h)	0	2961	1843	266	2989	0	0	0	0	372	6	760
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1841	1841	0				1856	1856	1856
Adj Flow Rate, veh/h	0	3365	2094	302	3397	0				423	7	864
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88				0.88	0.88	0.88
Percent Heavy Veh, %	0	2	2	4	4	0				3	3	3
Cap, veh/h	0	1620	754	164	1097	0				183	3	374
Arrive On Green	0.00	0.48	0.48	0.12	0.79	0.00				0.34	0.34	0.34
Sat Flow, veh/h	0	3572	1585	1753	1841	0				534	9	1090
Grp Volume(v), veh/h	0	3365	2094	302	3397	0				1294	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1585	1753	1841	0				1633	0	0
Q Serve(g_s), s	0.0	71.4	71.4	14.0	89.4	0.0				51.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	71.4	71.4	14.0	89.4	0.0				51.4	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				0.33		0.67
Lane Grp Cap(c), veh/h	0	1620	754	164	1097	0				559	0	0
V/C Ratio(X)	0.00	2.08	2.78	1.85	3.10	0.00				2.31	0.00	0.00
Avail Cap(c_a), veh/h	0	1620	754	164	1097	0				559	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	39.3	39.3	65.7	15.5	0.0				49.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	486.7	802.6	382.7	943.6	0.0				596.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	138.8	195.5	23.5	312.9	0.0				113.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	526.0	841.9	448.4	959.2	0.0				645.8	0.0	0.0
LnGrp LOS	A	F	F	F	F	A				F	A	A
Approach Vol, veh/h		5459			3699						1294	
Approach Delay, s/veh		647.2			917.5						645.8	
Approach LOS		F			F						F	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	18.0	76.0		56.0		94.0						
Change Period (Y+Rc), s	4.0	4.6		4.6		4.6						
Max Green Setting (Gmax), s	14.0	71.4		51.4		89.4						
Max Q Clear Time (g_c+I1), s	16.0	73.4		53.4		91.4						
Green Ext Time (p_c), s	0.0	0.0		0.0		0.0						
Intersection Summary												
HCM 6th Ctrl Delay			742.7									
HCM 6th LOS			F									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	443	2890	0	0	1954	506	1301	4	405	0	0	0
Future Volume (veh/h)	443	2890	0	0	1954	506	1301	4	405	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1796	1796	1796			
Adj Flow Rate, veh/h	492	3211	0	0	2171	562	1446	4	450			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	3	3	0	0	3	3	7	7	7			
Cap, veh/h	200	1796	0	0	1034	256	543	2	169			
Arrive On Green	0.15	0.68	0.00	0.00	0.37	0.37	0.43	0.43	0.43			
Sat Flow, veh/h	1767	3618	0	0	2892	694	1265	3	394			
Grp Volume(v), veh/h	492	3211	0	0	1331	1402	1900	0	0			
Grp Sat Flow(s),veh/h/ln	1767	1763	0	0	1763	1731	1662	0	0			
Q Serve(g_s), s	17.0	76.4	0.0	0.0	55.4	55.4	64.4	0.0	0.0			
Cycle Q Clear(g_c), s	17.0	76.4	0.0	0.0	55.4	55.4	64.4	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.40	0.76		0.24			
Lane Grp Cap(c), veh/h	200	1796	0	0	651	639	714	0	0			
V/C Ratio(X)	2.46	1.79	0.00	0.00	2.05	2.19	2.66	0.00	0.00			
Avail Cap(c_a), veh/h	200	1796	0	0	651	639	714	0	0			
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	63.7	24.2	0.0	0.0	47.3	47.3	42.8	0.0	0.0			
Incr Delay (d2), s/veh	656.8	354.9	0.0	0.0	475.6	541.9	752.1	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	44.0	115.2	0.0	0.0	110.2	119.9	175.2	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	720.5	379.1	0.0	0.0	522.9	589.2	794.9	0.0	0.0			
LnGrp LOS	F	F	A	A	F	F	F	A	A			
Approach Vol, veh/h		3703			2733			1900				
Approach Delay, s/veh		424.4			556.9			794.9				
Approach LOS		F			F			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		81.0			21.0	60.0		69.0				
Change Period (Y+Rc), s		4.6			4.0	4.6		4.6				
Max Green Setting (Gmax), s		76.4			17.0	55.4		64.4				
Max Q Clear Time (g_c+I1), s		78.4			19.0	57.4		66.4				
Green Ext Time (p_c), s		0.0			0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			552.3									
HCM 6th LOS			F									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	208	1230	350	93	1295	75	187	701	197	184	412	80
Future Volume (veh/h)	208	1230	350	93	1295	75	187	701	197	184	412	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1767	1767	1767	1826	1826	1826	1781	1781	1781
Adj Flow Rate, veh/h	219	1295	368	98	1363	79	197	738	207	194	434	84
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	9	9	9	5	5	5	8	8	8
Cap, veh/h	238	1780	909	118	1469	755	246	794	463	219	754	537
Arrive On Green	0.13	0.50	0.50	0.07	0.44	0.44	0.07	0.23	0.23	0.07	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	1682	3357	1497	3374	3469	1547	3291	3385	1510
Grp Volume(v), veh/h	219	1295	368	98	1363	79	197	738	207	194	434	84
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1682	1678	1497	1687	1735	1547	1646	1692	1510
Q Serve(g_s), s	18.2	42.9	19.3	8.6	57.7	4.1	8.6	31.3	16.2	8.8	17.2	5.7
Cycle Q Clear(g_c), s	18.2	42.9	19.3	8.6	57.7	4.1	8.6	31.3	16.2	8.8	17.2	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	238	1780	909	118	1469	755	246	794	463	219	754	537
V/C Ratio(X)	0.92	0.73	0.40	0.83	0.93	0.10	0.80	0.93	0.45	0.88	0.58	0.16
Avail Cap(c_a), veh/h	238	1780	909	179	1477	759	315	803	467	219	754	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.82	0.82	0.82	0.45	0.45	0.45	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.2	29.4	17.7	68.8	39.9	19.4	68.5	56.6	42.5	69.4	52.0	32.9
Incr Delay (d2), s/veh	38.4	2.6	1.3	14.7	9.9	0.2	6.3	9.5	0.7	31.8	1.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.8	18.9	7.5	4.2	25.6	1.5	4.0	14.7	6.4	4.7	7.5	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	102.6	32.0	19.1	83.5	49.8	19.7	74.8	66.1	43.2	101.2	53.7	33.2
LnGrp LOS	F	C	B	F	D	B	E	E	D	F	D	C
Approach Vol, veh/h		1882			1540			1142			712	
Approach Delay, s/veh		37.7			50.4			63.4			64.3	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	81.1	14.0	40.3	24.0	71.7	14.9	39.4
Change Period (Y+Rc), s	4.0	6.0	4.0	* 6	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	16.0	70.0	10.0	* 35	20.0	66.0	14.0	30.0
Max Q Clear Time (g_c+I1), s	10.6	44.9	10.8	33.3	20.2	59.7	10.6	19.2
Green Ext Time (p_c), s	0.1	19.6	0.0	1.1	0.0	5.6	0.3	3.9

Intersection Summary	
HCM 6th Ctrl Delay	50.6
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1672	128	83	1234	36	165	0	572	83	373	373
Future Volume (veh/h)	0	1672	128	83	1234	36	165	0	572	83	373	373
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1841	1841	1841	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1798	138	89	1327	39	177	0	615	89	401	401
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	3	3	4	4	4	2	0	2	2	2	2
Cap, veh/h	0	2453	761	139	1984	983	210	0	0	112	592	465
Arrive On Green	0.00	0.48	0.48	0.04	0.57	0.57	0.12	0.00	0.00	0.06	0.17	0.17
Sat Flow, veh/h	0	5233	1572	3401	3497	1560	1781	177		1781	3554	2790
Grp Volume(v), veh/h	0	1798	138	89	1327	39	177	65.7		89	401	401
Grp Sat Flow(s),veh/h/ln	0	1689	1572	1700	1749	1560	1781	E		1781	1777	1395
Q Serve(g_s), s	0.0	32.9	5.8	3.0	30.7	1.1	11.3			5.7	12.3	16.2
Cycle Q Clear(g_c), s	0.0	32.9	5.8	3.0	30.7	1.1	11.3			5.7	12.3	16.2
Prop In Lane	0.00		1.00	1.00		1.00	1.00			1.00		1.00
Lane Grp Cap(c), veh/h	0	2453	761	139	1984	983	210			112	592	465
V/C Ratio(X)	0.00	0.73	0.18	0.64	0.67	0.04	0.84			0.79	0.68	0.86
Avail Cap(c_a), veh/h	0	2757	856	179	2230	1093	312			158	628	493
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	23.9	16.9	54.8	17.5	8.1	50.1			53.5	45.4	47.0
Incr Delay (d2), s/veh	0.0	1.0	0.2	5.5	0.8	0.0	15.6			17.3	2.8	14.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.0	2.1	1.4	12.0	0.4	5.9			3.1	5.6	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	24.9	17.1	60.2	18.3	8.1	65.7			70.9	48.2	61.2
LnGrp LOS	A	C	B	E	B	A	E			E	D	E
Approach Vol, veh/h		1936			1455						891	
Approach Delay, s/veh		24.4			20.6						56.3	
Approach LOS		C			C						E	

Timer - Assigned Phs	1	2	3	4		6	7
Phs Duration (G+Y+Rc), s	9.6	62.1	18.4	25.8		71.8	12.0
Change Period (Y+Rc), s	4.9	* 6	* 4.7	6.5		6.0	* 4.7
Max Green Setting (Gmax), s	6.1	* 63	* 20	20.5		73.9	* 10
Max Q Clear Time (g_c+I1), s	5.0	34.9	13.3	18.2		32.7	7.7
Green Ext Time (p_c), s	0.0	21.2	0.4	1.1		19.5	0.0

Intersection Summary		
HCM 6th Ctrl Delay		31.2
HCM 6th LOS		C

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	446	870	54	379	974	50
Future Volume (veh/h)	446	870	54	379	974	50
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	490	0	59	416	1070	55
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	5	5
Cap, veh/h	819		104	1355	1224	561
Arrive On Green	0.23	0.00	0.06	0.38	0.36	0.36
Sat Flow, veh/h	3647	1585	1781	3647	3374	1547
Grp Volume(v), veh/h	490	0	59	416	1070	55
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1687	1547
Q Serve(g_s), s	5.3	0.0	1.4	3.6	12.8	1.0
Cycle Q Clear(g_c), s	5.3	0.0	1.4	3.6	12.8	1.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	819		104	1355	1224	561
V/C Ratio(X)	0.60		0.56	0.31	0.87	0.10
Avail Cap(c_a), veh/h	1303		246	2089	2574	1181
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	0.0	19.9	9.4	12.9	9.1
Incr Delay (d2), s/veh	0.3	0.0	1.8	0.0	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.6	1.1	3.9	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.2	0.0	21.7	9.4	13.7	9.2
LnGrp LOS	B		C	A	B	A
Approach Vol, veh/h	490	A		475	1125	
Approach Delay, s/veh	15.2			11.0	13.5	
Approach LOS	B			B	B	

Timer - Assigned Phs	1	2	6	8
Phs Duration (G+Y+Rc), s	6.5	16.2	22.7	20.6
Change Period (Y+Rc), s	4.0	* 6.2	6.2	4.9
Max Green Setting (Gmax), s	6.0	* 16	25.5	33.1
Max Q Clear Time (g_c+I1), s	3.4	7.3	5.6	14.8
Green Ext Time (p_c), s	0.0	0.6	0.6	0.9

Intersection Summary	
HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

Notes

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

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	262	162	79	716	384	266
Future Volume (veh/h)	262	162	79	716	384	266
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1604	1604	1781	1781	1648	1648
Adj Flow Rate, veh/h	298	184	90	814	436	302
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	20	20	8	8	17	17
Cap, veh/h	481	388	117	2061	806	555
Arrive On Green	0.16	0.16	0.07	0.61	0.45	0.45
Sat Flow, veh/h	2963	2392	1697	3474	1856	1220
Grp Volume(v), veh/h	298	184	90	814	384	354
Grp Sat Flow(s),veh/h/ln	1481	1196	1697	1692	1566	1428
Q Serve(g_s), s	4.9	3.7	2.7	6.5	9.3	9.4
Cycle Q Clear(g_c), s	4.9	3.7	2.7	6.5	9.3	9.4
Prop In Lane	1.00	1.00	1.00			0.85
Lane Grp Cap(c), veh/h	481	388	117	2061	712	649
V/C Ratio(X)	0.62	0.47	0.77	0.39	0.54	0.54
Avail Cap(c_a), veh/h	1186	957	469	3773	1178	1075
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.5	19.9	24.0	5.3	10.4	10.4
Incr Delay (d2), s/veh	1.3	0.9	14.2	0.4	2.3	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.0	1.5	1.6	3.0	2.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.8	20.8	38.2	5.7	12.7	13.0
LnGrp LOS	C	C	D	A	B	B
Approach Vol, veh/h	482			904	738	
Approach Delay, s/veh	21.4			9.0	12.8	
Approach LOS	C			A	B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	8.1	29.8		14.5		38.0
Change Period (Y+Rc), s	4.5	6.0		6.0		6.0
Max Green Setting (Gmax), s	14.5	39.5		21.0		58.5
Max Q Clear Time (g_c+I1), s	4.7	11.4		6.9		8.5
Green Ext Time (p_c), s	0.2	12.4		1.6		18.4

Intersection Summary	
HCM 6th Ctrl Delay	13.1
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	403	1143	475	165	821	115	566	878	168	112	752	61
Future Volume (veh/h)	403	1143	475	165	821	115	566	878	168	112	752	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1826	1826	1826	1811	1811	1811
Adj Flow Rate, veh/h	415	1178	490	170	846	119	584	905	173	115	775	63
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	2	2	2	5	5	5	6	6	6
Cap, veh/h	336	1112	910	148	742	457	458	1337	725	138	695	602
Arrive On Green	0.19	0.32	0.32	0.08	0.21	0.21	0.26	0.39	0.39	0.08	0.20	0.20
Sat Flow, veh/h	1767	3526	1572	1781	3554	1585	1739	3469	1547	1725	3441	1535
Grp Volume(v), veh/h	415	1178	490	170	846	119	584	905	173	115	775	63
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1781	1777	1585	1739	1735	1547	1725	1721	1535
Q Serve(g_s), s	28.5	47.3	28.6	12.5	31.3	8.7	39.5	32.5	10.0	9.9	30.3	3.9
Cycle Q Clear(g_c), s	28.5	47.3	28.6	12.5	31.3	8.7	39.5	32.5	10.0	9.9	30.3	3.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	336	1112	910	148	742	457	458	1337	725	138	695	602
V/C Ratio(X)	1.24	1.06	0.54	1.15	1.14	0.26	1.28	0.68	0.24	0.83	1.11	0.10
Avail Cap(c_a), veh/h	336	1112	910	148	742	457	458	1337	725	213	695	602
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.7	51.3	19.3	68.8	59.3	41.0	55.3	38.3	23.8	68.0	59.8	28.9
Incr Delay (d2), s/veh	129.3	44.3	0.6	118.2	79.1	0.3	140.0	1.4	0.2	15.2	70.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.8	27.6	10.6	10.6	22.2	3.5	35.1	14.2	3.8	5.0	20.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	190.0	95.6	20.0	187.0	138.5	41.3	195.3	39.7	24.0	83.3	130.1	29.0
LnGrp LOS	F	F	B	F	F	D	F	D	C	F	F	C
Approach Vol, veh/h		2083			1135			1662			953	
Approach Delay, s/veh		96.6			135.6			92.7			117.7	
Approach LOS		F			F			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	53.0	44.0	36.0	33.0	37.0	16.5	63.5				
Change Period (Y+Rc), s	4.5	5.7	4.5	5.7	4.5	5.7	4.5	5.7				
Max Green Setting (Gmax), s	12.5	47.3	39.5	30.3	28.5	31.3	18.5	51.3				
Max Q Clear Time (g_c+I1), s	14.5	49.3	41.5	32.3	30.5	33.3	11.9	34.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.1	6.6				
Intersection Summary												
HCM 6th Ctrl Delay			106.5									
HCM 6th LOS			F									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	675	516	241	447	298	599	257	591	314	224	678	266
Future Volume (veh/h)	675	516	241	447	298	599	257	591	314	224	678	266
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1856	1856	1856	1841	1841	1841	1826	1826	1826
Adj Flow Rate, veh/h	711	543	254	471	314	631	271	622	331	236	714	280
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	5	5	5
Cap, veh/h	651	1335	818	519	569	487	250	656	528	258	669	873
Arrive On Green	0.37	0.38	0.38	0.15	0.16	0.16	0.14	0.19	0.19	0.15	0.19	0.19
Sat Flow, veh/h	1753	3497	1560	3428	3526	1572	1753	3497	1560	1739	3469	1547
Grp Volume(v), veh/h	711	543	254	471	314	631	271	622	331	236	714	280
Grp Sat Flow(s),veh/h/ln	1753	1749	1560	1714	1763	1572	1753	1749	1560	1739	1735	1547
Q Serve(g_s), s	52.0	15.9	12.9	18.9	11.5	22.6	20.0	24.6	24.9	18.7	27.0	13.5
Cycle Q Clear(g_c), s	52.0	15.9	12.9	18.9	11.5	22.6	20.0	24.6	24.9	18.7	27.0	13.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	651	1335	818	519	569	487	250	656	528	258	669	873
V/C Ratio(X)	1.09	0.41	0.31	0.91	0.55	1.30	1.08	0.95	0.63	0.92	1.07	0.32
Avail Cap(c_a), veh/h	651	1335	818	661	569	487	250	656	528	286	669	873
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.0	31.7	18.9	58.5	54.0	48.3	60.0	56.2	38.9	58.8	56.5	16.2
Incr Delay (d2), s/veh	62.9	0.9	1.0	12.4	3.8	147.7	80.5	23.7	3.4	29.1	54.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	33.7	7.0	5.0	9.1	5.4	36.9	14.5	13.0	10.1	10.3	16.8	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	106.9	32.6	19.9	70.9	57.9	196.0	140.5	79.9	42.2	87.9	110.6	16.7
LnGrp LOS	F	C	B	E	E	F	F	E	D	F	F	B
Approach Vol, veh/h		1508			1416			1224			1230	
Approach Delay, s/veh		65.5			123.8			83.1			84.9	
Approach LOS		E			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.2	58.8	24.0	32.0	56.0	28.0	24.8	31.2
Change Period (Y+Rc), s	4.0	5.4	4.0	5.0	4.0	5.4	4.0	5.0
Max Green Setting (Gmax), s	27.0	47.6	20.0	27.0	52.0	22.6	23.0	24.0
Max Q Clear Time (g_c+I1), s	20.9	17.9	22.0	29.0	54.0	24.6	20.7	26.9
Green Ext Time (p_c), s	0.2	9.9	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	89.3
HCM 6th LOS	F

CUMULATIVE PLUS PROJECT CONDITIONS SYNCHRO RESULTS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1942	1427	363	2484	0	0	0	0	259	3	1186
Future Volume (veh/h)	0	1942	1427	363	2484	0	0	0	0	259	3	1186
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1841	1841	0				1856	1856	1856
Adj Flow Rate, veh/h	0	2207	1622	412	2823	0				294	3	1348
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88				0.88	0.88	0.88
Percent Heavy Veh, %	0	2	2	4	4	0				3	3	3
Cap, veh/h	0	1303	607	187	950	0				121	1	556
Arrive On Green	0.00	0.38	0.38	0.11	0.52	0.00				0.42	0.42	0.42
Sat Flow, veh/h	0	3572	1585	1753	1841	0				287	3	1315
Grp Volume(v), veh/h	0	2207	1622	412	2823	0				1645	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1585	1753	1841	0				1605	0	0
Q Serve(g_s), s	0.0	57.4	57.4	16.0	77.4	0.0				63.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	57.4	57.4	16.0	77.4	0.0				63.4	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				0.18		0.82
Lane Grp Cap(c), veh/h	0	1303	607	187	950	0				678	0	0
V/C Ratio(X)	0.00	1.69	2.67	2.20	2.97	0.00				2.43	0.00	0.00
Avail Cap(c_a), veh/h	0	1303	607	187	950	0				678	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	46.3	46.3	67.0	36.3	0.0				43.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	315.8	758.1	543.1	887.7	0.0				646.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	81.2	150.2	35.4	268.1	0.0				146.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	362.1	804.4	610.1	924.0	0.0				689.3	0.0	0.0
LnGrp LOS	A	F	F	F	F	A				F	A	A
Approach Vol, veh/h		3829			3235						1645	
Approach Delay, s/veh		549.4			884.0						689.3	
Approach LOS		F			F						F	

Timer - Assigned Phs	1	2	4	6
Phs Duration (G+Y+Rc), s	20.0	62.0	68.0	82.0
Change Period (Y+Rc), s	4.0	4.6	4.6	4.6
Max Green Setting (Gmax), s	16.0	57.4	63.4	77.4
Max Q Clear Time (g_c+I1), s	18.0	59.4	65.4	79.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	700.1
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	344	1857	0	0	2109	576	738	2	318	0	0	0
Future Volume (veh/h)	344	1857	0	0	2109	576	738	2	318	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1796	1796	1796			
Adj Flow Rate, veh/h	382	2063	0	0	2343	640	820	2	353			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	3	3	0	0	3	3	7	7	7			
Cap, veh/h	188	2078	0	0	1261	329	402	1	173			
Arrive On Green	0.21	1.00	0.00	0.00	0.46	0.46	0.35	0.35	0.35			
Sat Flow, veh/h	1767	3618	0	0	2859	722	1151	3	496			
Grp Volume(v), veh/h	382	2063	0	0	1453	1530	1175	0	0			
Grp Sat Flow(s),veh/h/ln	1767	1763	0	0	1763	1726	1650	0	0			
Q Serve(g_s), s	16.0	0.0	0.0	0.0	68.4	68.4	52.4	0.0	0.0			
Cycle Q Clear(g_c), s	16.0	0.0	0.0	0.0	68.4	68.4	52.4	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.42	0.70		0.30			
Lane Grp Cap(c), veh/h	188	2078	0	0	804	787	576	0	0			
V/C Ratio(X)	2.03	0.99	0.00	0.00	1.81	1.94	2.04	0.00	0.00			
Avail Cap(c_a), veh/h	188	2078	0	0	804	787	576	0	0			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	59.0	0.0	0.0	0.0	40.8	40.8	48.8	0.0	0.0			
Incr Delay (d2), s/veh	463.6	4.5	0.0	0.0	368.5	429.5	473.7	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	30.7	1.3	0.0	0.0	111.5	122.5	97.3	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	522.6	4.5	0.0	0.0	409.3	470.3	522.5	0.0	0.0			
LnGrp LOS	F	A	A	A	F	F	F	A	A			
Approach Vol, veh/h		2445			2983			1175				
Approach Delay, s/veh		85.5			440.6			522.5				
Approach LOS		F			F			F				

Timer - Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		93.0			20.0	73.0		57.0
Change Period (Y+Rc), s		4.6			4.0	4.6		4.6
Max Green Setting (Gmax), s		88.4			16.0	68.4		52.4
Max Q Clear Time (g_c+I1), s		2.0			18.0	70.4		54.4
Green Ext Time (p_c), s		37.2			0.0	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	323.7
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	1021	225	103	1274	74	526	368	146	98	509	124
Future Volume (veh/h)	120	1021	225	103	1274	74	526	368	146	98	509	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1767	1767	1767	1826	1826	1826	1781	1781	1781
Adj Flow Rate, veh/h	126	1075	237	108	1341	78	554	387	154	103	536	131
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	9	9	9	5	5	5	8	8	8
Cap, veh/h	143	1557	969	129	1460	717	585	1068	595	145	604	390
Arrive On Green	0.08	0.44	0.44	0.08	0.43	0.43	0.17	0.31	0.31	0.04	0.18	0.18
Sat Flow, veh/h	1781	3554	1585	1682	3357	1497	3374	3469	1547	3291	3385	1510
Grp Volume(v), veh/h	126	1075	237	108	1341	78	554	387	154	103	536	131
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1682	1678	1497	1687	1735	1547	1646	1692	1510
Q Serve(g_s), s	10.5	36.5	10.2	9.5	56.4	4.3	24.4	13.0	10.2	4.6	23.2	10.6
Cycle Q Clear(g_c), s	10.5	36.5	10.2	9.5	56.4	4.3	24.4	13.0	10.2	4.6	23.2	10.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	143	1557	969	129	1460	717	585	1068	595	145	604	390
V/C Ratio(X)	0.88	0.69	0.24	0.84	0.92	0.11	0.95	0.36	0.26	0.71	0.89	0.34
Avail Cap(c_a), veh/h	143	1557	969	202	1460	717	585	1068	595	197	632	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.85	0.85	0.85	0.88	0.88	0.88	0.77	0.77	0.77
Uniform Delay (d), s/veh	68.3	33.9	13.3	68.3	39.9	21.5	61.3	40.4	31.6	70.8	60.1	45.2
Incr Delay (d2), s/veh	44.2	2.5	0.6	13.9	9.4	0.3	23.0	0.4	0.4	5.7	12.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	16.4	3.9	4.6	25.0	1.6	12.3	5.7	4.0	2.1	11.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	112.5	36.5	13.9	82.3	49.3	21.8	84.3	40.8	32.0	76.4	72.3	46.0
LnGrp LOS	F	D	B	F	D	C	F	D	C	E	E	D
Approach Vol, veh/h		1438			1527			1095			770	
Approach Delay, s/veh		39.4			50.2			61.6			68.4	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.5	71.7	10.6	52.2	16.0	71.2	30.0	32.8
Change Period (Y+Rc), s	4.0	6.0	4.0	* 6	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	18.0	58.0	9.0	* 46	12.0	64.0	26.0	28.0
Max Q Clear Time (g_c+I1), s	11.5	38.5	6.6	15.0	12.5	58.4	26.4	25.2
Green Ext Time (p_c), s	0.1	13.6	0.1	6.5	0.0	4.9	0.0	1.6

Intersection Summary			
HCM 6th Ctrl Delay			52.5
HCM 6th LOS			D

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1609	199	153	1106	44	148	0	364	53	506	429
Future Volume (veh/h)	0	1609	199	153	1106	44	148	0	364	53	506	429
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1841	1841	1841	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1730	214	165	1189	47	159	0	391	57	544	461
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	3	3	4	4	4	2	0	2	2	2	2
Cap, veh/h	0	2232	693	222	1915	919	189	0	0	74	712	559
Arrive On Green	0.00	0.44	0.44	0.07	0.55	0.55	0.11	0.00	0.00	0.04	0.20	0.20
Sat Flow, veh/h	0	5233	1572	3401	3497	1560	1781	159		1781	3554	2790
Grp Volume(v), veh/h	0	1730	214	165	1189	47	159	69.8		57	544	461
Grp Sat Flow(s),veh/h/ln	0	1689	1572	1700	1749	1560	1781	E		1781	1777	1395
Q Serve(g_s), s	0.0	34.2	10.4	5.6	27.5	1.5	10.3			3.7	17.1	18.7
Cycle Q Clear(g_c), s	0.0	34.2	10.4	5.6	27.5	1.5	10.3			3.7	17.1	18.7
Prop In Lane	0.00		1.00	1.00		1.00	1.00			1.00		1.00
Lane Grp Cap(c), veh/h	0	2232	693	222	1915	919	189			74	712	559
V/C Ratio(X)	0.00	0.78	0.31	0.74	0.62	0.05	0.84			0.77	0.76	0.82
Avail Cap(c_a), veh/h	0	2403	746	285	2092	997	266			149	798	626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	28.0	21.4	54.2	18.3	10.3	51.8			56.0	44.6	45.2
Incr Delay (d2), s/veh	0.0	1.7	0.3	7.9	0.6	0.0	18.0			17.3	4.1	8.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.9	3.9	2.7	10.9	0.5	5.6			2.0	7.9	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	29.7	21.7	62.1	18.9	10.3	69.8			73.4	48.6	53.4
LnGrp LOS	A	C	C	E	B	B	E			E	D	D
Approach Vol, veh/h		1944			1401						1062	
Approach Delay, s/veh		28.8			23.7						52.0	
Approach LOS		C			C						D	

Timer - Assigned Phs	1	2	3	4		6	7
Phs Duration (G+Y+Rc), s	12.6	58.0	17.3	30.2		70.6	9.6
Change Period (Y+Rc), s	4.9	* 6	* 4.7	6.5		6.0	* 4.7
Max Green Setting (Gmax), s	9.9	* 56	* 18	26.5		70.6	* 9.9
Max Q Clear Time (g_c+I1), s	7.6	36.2	12.3	20.7		29.5	5.7
Green Ext Time (p_c), s	0.1	15.8	0.3	3.0		16.8	0.0

Intersection Summary	
HCM 6th Ctrl Delay	34.1
HCM 6th LOS	C

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	328	766	92	365	938	46
Future Volume (veh/h)	328	766	92	365	938	46
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	360	0	101	401	1031	51
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	5	5
Cap, veh/h	806		143	1414	1183	542
Arrive On Green	0.23	0.00	0.08	0.40	0.35	0.35
Sat Flow, veh/h	3647	1585	1781	3647	3374	1547
Grp Volume(v), veh/h	360	0	101	401	1031	51
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1687	1547
Q Serve(g_s), s	3.8	0.0	2.4	3.4	12.6	1.0
Cycle Q Clear(g_c), s	3.8	0.0	2.4	3.4	12.6	1.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	806		143	1414	1183	542
V/C Ratio(X)	0.45		0.70	0.28	0.87	0.09
Avail Cap(c_a), veh/h	1120		323	2054	2531	1161
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.7	0.0	19.8	9.0	13.4	9.6
Incr Delay (d2), s/veh	0.1	0.0	2.4	0.0	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	1.0	1.0	3.9	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.8	0.0	22.1	9.1	14.2	9.6
LnGrp LOS	B		C	A	B	A
Approach Vol, veh/h	360	A		502	1082	
Approach Delay, s/veh	14.8			11.7	14.0	
Approach LOS	B			B	B	

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.5	16.2				23.7		20.4
Change Period (Y+Rc), s	4.0	* 6.2				6.2		4.9
Max Green Setting (Gmax), s	8.0	* 14				25.5		33.1
Max Q Clear Time (g_c+I1), s	14.4	5.8				5.4		14.6
Green Ext Time (p_c), s	0.0	0.4				0.5		0.9

Intersection Summary	
HCM 6th Ctrl Delay	13.6
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	171	71	78	487	463	462
Future Volume (veh/h)	171	71	78	487	463	462
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1604	1604	1781	1781	1648	1648
Adj Flow Rate, veh/h	194	81	89	553	526	525
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	20	20	8	8	17	17
Cap, veh/h	299	241	114	2433	914	815
Arrive On Green	0.10	0.10	0.07	0.72	0.58	0.58
Sat Flow, veh/h	2963	2392	1697	3474	1648	1397
Grp Volume(v), veh/h	194	81	89	553	526	525
Grp Sat Flow(s),veh/h/ln	1481	1196	1697	1692	1566	1397
Q Serve(g_s), s	4.2	2.1	3.4	3.7	14.0	16.7
Cycle Q Clear(g_c), s	4.2	2.1	3.4	3.7	14.0	16.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	299	241	114	2433	914	815
V/C Ratio(X)	0.65	0.34	0.78	0.23	0.58	0.64
Avail Cap(c_a), veh/h	579	468	268	3385	1213	1082
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	27.8	30.5	3.1	8.7	9.2
Incr Delay (d2), s/veh	2.4	0.8	14.9	0.2	2.1	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.6	1.8	0.8	4.3	4.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.1	28.6	45.4	3.3	10.8	12.3
LnGrp LOS	C	C	D	A	B	B
Approach Vol, veh/h	275			642	1051	
Approach Delay, s/veh	30.4			9.2	11.5	
Approach LOS	C			A	B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.0	44.8		12.7		53.8
Change Period (Y+Rc), s	4.5	6.0		6.0		6.0
Max Green Setting (Gmax), s	10.5	51.5		13.0		66.5
Max Q Clear Time (g_c+I1), s	5.4	18.7		6.2		5.7
Green Ext Time (p_c), s	0.1	20.1		0.6		11.7

Intersection Summary		
HCM 6th Ctrl Delay		13.4
HCM 6th LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	649	383	212	615	128	517	551	146	136	731	127
Future Volume (veh/h)	148	649	383	212	615	128	517	551	146	136	731	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1826	1826	1826	1811	1811	1811
Adj Flow Rate, veh/h	153	669	395	219	634	132	533	568	151	140	754	131
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	2	2	2	5	5	5	6	6	6
Cap, veh/h	167	678	778	223	793	507	526	1488	858	167	768	488
Arrive On Green	0.09	0.19	0.19	0.13	0.22	0.22	0.30	0.43	0.43	0.10	0.22	0.22
Sat Flow, veh/h	1767	3526	1572	1781	3554	1585	1739	3469	1547	1725	3441	1535
Grp Volume(v), veh/h	153	669	395	219	634	132	533	568	151	140	754	131
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1781	1777	1585	1739	1735	1547	1725	1721	1535
Q Serve(g_s), s	11.2	24.6	22.0	15.9	21.9	8.0	39.3	14.5	6.3	10.4	28.3	8.3
Cycle Q Clear(g_c), s	11.2	24.6	22.0	15.9	21.9	8.0	39.3	14.5	6.3	10.4	28.3	8.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	167	678	778	223	793	507	526	1488	858	167	768	488
V/C Ratio(X)	0.92	0.99	0.51	0.98	0.80	0.26	1.01	0.38	0.18	0.84	0.98	0.27
Avail Cap(c_a), veh/h	167	678	778	223	793	507	526	1488	858	252	768	488
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.68	0.68	0.68
Uniform Delay (d), s/veh	58.3	52.3	22.2	56.7	47.8	32.8	45.4	25.4	14.3	57.7	50.2	33.1
Incr Delay (d2), s/veh	45.8	31.5	2.4	54.5	8.3	1.2	42.8	0.2	0.1	10.3	22.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	13.8	8.6	10.5	10.6	3.3	23.0	6.1	2.2	5.0	14.5	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	104.1	83.8	24.5	111.2	56.1	34.1	88.1	25.5	14.4	68.0	72.7	33.3
LnGrp LOS	F	F	C	F	E	C	F	C	B	E	E	C
Approach Vol, veh/h		1217			985			1252			1025	
Approach Delay, s/veh		67.1			65.4			50.8			67.0	
Approach LOS		E			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.8	30.7	43.8	34.7	16.8	34.7	17.1	61.4
Change Period (Y+Rc), s	4.5	5.7	4.5	5.7	4.5	5.7	4.5	5.7
Max Green Setting (Gmax), s	16.3	25.0	39.3	29.0	12.3	29.0	19.0	49.3
Max Q Clear Time (g_c+I1), s	17.9	26.6	41.3	30.3	13.2	23.9	12.4	16.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.1	0.2	4.9

Intersection Summary	
HCM 6th Ctrl Delay	62.2
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	247	312	104	440	796	297	309	466	418	325	493	518
Future Volume (veh/h)	247	312	104	440	796	297	309	466	418	325	493	518
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1856	1856	1856	1841	1841	1841	1826	1826	1826
Adj Flow Rate, veh/h	260	328	109	463	838	313	325	491	440	342	519	545
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	5	5	5
Cap, veh/h	263	1148	512	520	1163	519	336	879	510	333	607	503
Arrive On Green	0.15	0.33	0.33	0.15	0.33	0.33	0.19	0.17	0.17	0.19	0.17	0.17
Sat Flow, veh/h	1753	3497	1560	3428	3526	1572	1753	5025	1560	1739	3469	1547
Grp Volume(v), veh/h	260	328	109	463	838	313	325	491	440	342	519	545
Grp Sat Flow(s),veh/h/ln	1753	1749	1560	1714	1763	1572	1753	1675	1560	1739	1735	1547
Q Serve(g_s), s	17.8	8.3	6.1	15.9	25.1	20.0	22.1	10.7	21.0	23.0	17.4	21.0
Cycle Q Clear(g_c), s	17.8	8.3	6.1	15.9	25.1	20.0	22.1	10.7	21.0	23.0	17.4	21.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	263	1148	512	520	1163	519	336	879	510	333	607	503
V/C Ratio(X)	0.99	0.29	0.21	0.89	0.72	0.60	0.97	0.56	0.86	1.03	0.85	1.08
Avail Cap(c_a), veh/h	263	1148	512	943	1163	519	336	879	510	333	607	503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	29.9	29.1	49.9	35.3	33.6	48.1	45.3	37.9	48.5	48.0	40.5
Incr Delay (d2), s/veh	52.1	0.6	0.9	2.1	3.9	5.1	40.0	1.3	15.2	56.2	12.4	64.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.6	3.6	0.1	6.9	11.3	8.3	13.3	4.6	14.1	15.1	8.5	23.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	103.0	30.5	30.1	52.1	39.2	38.8	88.1	46.6	53.1	104.7	60.4	105.2
LnGrp LOS	F	C	C	D	D	D	F	D	D	F	E	F
Approach Vol, veh/h		697			1614			1256			1406	
Approach Delay, s/veh		57.5			42.8			59.6			88.5	
Approach LOS		E			D			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.2	44.8	27.0	26.0	22.0	45.0	27.0	26.0
Change Period (Y+Rc), s	4.0	5.4	4.0	5.0	4.0	5.4	4.0	5.0
Max Green Setting (Gmax), s	33.0	24.6	23.0	21.0	18.0	39.6	23.0	21.0
Max Q Clear Time (g_c+I1), s	17.9	10.3	24.1	23.0	19.8	27.1	25.0	23.0
Green Ext Time (p_c), s	0.3	3.7	0.0	0.0	0.0	8.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	62.0
HCM 6th LOS	E

Intersection						
Int Delay, s/veh	0.3					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	38	623	16	0	786
Future Vol, veh/h	0	38	623	16	0	786
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	41	677	17	0	854

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	347	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	649	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	649	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	649	-
HCM Lane V/C Ratio	-	-	0.064	-
HCM Control Delay (s)	-	-	10.9	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	53	586	16	0	786
Future Vol, veh/h	0	53	586	16	0	786
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	58	637	17	0	854

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	327	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	669	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	669	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	669	-
HCM Lane V/C Ratio	-	-	0.086	-
HCM Control Delay (s)	-	-	10.9	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.3	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2965	1843	276	2991	0	0	0	0	372	6	760
Future Volume (veh/h)	0	2965	1843	276	2991	0	0	0	0	372	6	760
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1841	1841	0				1856	1856	1856
Adj Flow Rate, veh/h	0	3369	2094	314	3399	0				423	7	864
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88				0.88	0.88	0.88
Percent Heavy Veh, %	0	2	2	4	4	0				3	3	3
Cap, veh/h	0	1620	754	164	1097	0				183	3	374
Arrive On Green	0.00	0.48	0.48	0.12	0.79	0.00				0.34	0.34	0.34
Sat Flow, veh/h	0	3572	1585	1753	1841	0				534	9	1090
Grp Volume(v), veh/h	0	3369	2094	314	3399	0				1294	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1585	1753	1841	0				1633	0	0
Q Serve(g_s), s	0.0	71.4	71.4	14.0	89.4	0.0				51.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	71.4	71.4	14.0	89.4	0.0				51.4	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				0.33		0.67
Lane Grp Cap(c), veh/h	0	1620	754	164	1097	0				559	0	0
V/C Ratio(X)	0.00	2.08	2.78	1.92	3.10	0.00				2.31	0.00	0.00
Avail Cap(c_a), veh/h	0	1620	754	164	1097	0				559	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	39.3	39.3	65.7	15.5	0.0				49.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	487.8	802.6	415.6	944.4	0.0				596.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	139.1	195.5	25.0	313.2	0.0				113.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	527.1	841.9	481.3	960.0	0.0				645.8	0.0	0.0
LnGrp LOS	A	F	F	F	F	A				F	A	A
Approach Vol, veh/h		5463			3713						1294	
Approach Delay, s/veh		647.8			919.5						645.8	
Approach LOS		F			F						F	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	18.0	76.0		56.0		94.0						
Change Period (Y+Rc), s	4.0	4.6		4.6		4.6						
Max Green Setting (Gmax), s	14.0	71.4		51.4		89.4						
Max Q Clear Time (g_c+I1), s	16.0	73.4		53.4		91.4						
Green Ext Time (p_c), s	0.0	0.0		0.0		0.0						
Intersection Summary												
HCM 6th Ctrl Delay			743.9									
HCM 6th LOS			F									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	443	2894	0	0	1966	506	1301	4	422	0	0	0
Future Volume (veh/h)	443	2894	0	0	1966	506	1301	4	422	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1796	1796	1796			
Adj Flow Rate, veh/h	492	3216	0	0	2184	562	1446	4	469			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	3	3	0	0	3	3	7	7	7			
Cap, veh/h	200	1796	0	0	1035	255	537	1	174			
Arrive On Green	0.15	0.68	0.00	0.00	0.37	0.37	0.43	0.43	0.43			
Sat Flow, veh/h	1767	3618	0	0	2896	691	1251	3	406			
Grp Volume(v), veh/h	492	3216	0	0	1338	1408	1919	0	0			
Grp Sat Flow(s),veh/h/ln	1767	1763	0	0	1763	1731	1661	0	0			
Q Serve(g_s), s	17.0	76.4	0.0	0.0	55.4	55.4	64.4	0.0	0.0			
Cycle Q Clear(g_c), s	17.0	76.4	0.0	0.0	55.4	55.4	64.4	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.40	0.75		0.24			
Lane Grp Cap(c), veh/h	200	1796	0	0	651	639	713	0	0			
V/C Ratio(X)	2.46	1.79	0.00	0.00	2.05	2.20	2.69	0.00	0.00			
Avail Cap(c_a), veh/h	200	1796	0	0	651	639	713	0	0			
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	63.7	24.2	0.0	0.0	47.3	47.3	42.8	0.0	0.0			
Incr Delay (d2), s/veh	656.8	356.1	0.0	0.0	480.0	546.2	765.2	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	44.0	115.5	0.0	0.0	110.9	120.7	177.6	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	720.5	380.3	0.0	0.0	527.3	593.5	808.0	0.0	0.0			
LnGrp LOS	F	F	A	A	F	F	F	A	A			
Approach Vol, veh/h		3708			2746			1919				
Approach Delay, s/veh		425.5			561.3			808.0				
Approach LOS		F			F			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		81.0			21.0	60.0		69.0				
Change Period (Y+Rc), s		4.6			4.0	4.6		4.6				
Max Green Setting (Gmax), s		76.4			17.0	55.4		64.4				
Max Q Clear Time (g_c+I1), s		78.4			19.0	57.4		66.4				
Green Ext Time (p_c), s		0.0			0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			557.7									
HCM 6th LOS			F									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	229	1230	350	93	1295	105	187	724	197	201	427	92
Future Volume (veh/h)	229	1230	350	93	1295	105	187	724	197	201	427	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1767	1767	1767	1826	1826	1826	1781	1781	1781
Adj Flow Rate, veh/h	241	1295	368	98	1363	111	197	762	207	212	449	97
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	9	9	9	5	5	5	8	8	8
Cap, veh/h	214	1767	908	118	1501	787	254	766	450	260	759	520
Arrive On Green	0.12	0.50	0.50	0.07	0.45	0.45	0.08	0.22	0.22	0.08	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	1682	3357	1497	3374	3469	1547	3291	3385	1510
Grp Volume(v), veh/h	241	1295	368	98	1363	111	197	762	207	212	449	97
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1682	1678	1497	1687	1735	1547	1646	1692	1510
Q Serve(g_s), s	18.0	43.2	19.4	8.6	56.7	5.7	8.6	32.9	16.4	9.5	17.8	6.8
Cycle Q Clear(g_c), s	18.0	43.2	19.4	8.6	56.7	5.7	8.6	32.9	16.4	9.5	17.8	6.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	214	1767	908	118	1501	787	254	766	450	260	759	520
V/C Ratio(X)	1.13	0.73	0.41	0.83	0.91	0.14	0.78	1.00	0.46	0.82	0.59	0.19
Avail Cap(c_a), veh/h	214	1767	908	135	1501	787	450	766	450	373	759	520
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.82	0.82	0.82	0.43	0.43	0.43	0.85	0.85	0.85
Uniform Delay (d), s/veh	66.0	29.8	17.8	68.9	38.6	18.2	68.1	58.4	43.6	68.0	52.0	34.5
Incr Delay (d2), s/veh	100.1	2.7	1.3	26.7	8.1	0.3	3.5	20.2	0.7	7.7	1.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.1	19.1	7.5	4.6	24.8	2.1	3.8	16.6	6.5	4.3	7.8	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	166.1	32.6	19.2	95.6	46.7	18.5	71.6	78.6	44.3	75.8	53.7	34.8
LnGrp LOS	F	C	B	F	D	B	E	E	D	E	D	C
Approach Vol, veh/h		1904			1572			1166			758	
Approach Delay, s/veh		46.9			47.8			71.3			57.4	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	80.6	15.8	39.1	22.0	73.1	15.3	39.6
Change Period (Y+Rc), s	4.0	6.0	4.0	* 6	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	12.0	68.6	17.0	* 33	18.0	62.6	20.0	29.4
Max Q Clear Time (g_c+I1), s	10.6	45.2	11.5	34.9	20.0	58.7	10.6	19.8
Green Ext Time (p_c), s	0.0	18.5	0.3	0.0	0.0	3.5	0.7	3.7

Intersection Summary	
HCM 6th Ctrl Delay	53.9
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1684	131	83	1256	36	170	0	572	83	373	373
Future Volume (veh/h)	0	1684	131	83	1256	36	170	0	572	83	373	373
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1841	1841	1841	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1811	141	89	1351	39	183	0	615	89	401	401
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	3	3	4	4	4	2	0	2	2	2	2
Cap, veh/h	0	2449	760	138	1980	981	215	0	0	112	589	463
Arrive On Green	0.00	0.48	0.48	0.04	0.57	0.57	0.12	0.00	0.00	0.06	0.17	0.17
Sat Flow, veh/h	0	5233	1572	3401	3497	1560	1781	183		1781	3554	2790
Grp Volume(v), veh/h	0	1811	141	89	1351	39	183	67.1		89	401	401
Grp Sat Flow(s),veh/h/ln	0	1689	1572	1700	1749	1560	1781	E		1781	1777	1395
Q Serve(g_s), s	0.0	33.6	6.0	3.0	31.9	1.1	11.8			5.8	12.4	16.4
Cycle Q Clear(g_c), s	0.0	33.6	6.0	3.0	31.9	1.1	11.8			5.8	12.4	16.4
Prop In Lane	0.00		1.00	1.00		1.00	1.00			1.00		1.00
Lane Grp Cap(c), veh/h	0	2449	760	138	1980	981	215			112	589	463
V/C Ratio(X)	0.00	0.74	0.19	0.64	0.68	0.04	0.85			0.79	0.68	0.87
Avail Cap(c_a), veh/h	0	2733	848	177	2210	1084	309			157	623	489
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	24.3	17.1	55.3	17.9	8.2	50.4			54.0	45.9	47.5
Incr Delay (d2), s/veh	0.0	1.1	0.2	5.6	0.9	0.0	16.8			17.8	2.9	14.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.3	2.2	1.4	12.6	0.4	6.2			3.1	5.7	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	25.4	17.3	60.8	18.8	8.3	67.1			71.8	48.8	62.3
LnGrp LOS	A	C	B	E	B	A	E			E	D	E
Approach Vol, veh/h		1952			1479						891	
Approach Delay, s/veh		24.8			21.1						57.2	
Approach LOS		C			C						E	

Timer - Assigned Phs	1	2	3	4		6	7
Phs Duration (G+Y+Rc), s	9.7	62.6	18.8	25.9		72.2	12.1
Change Period (Y+Rc), s	4.9	* 6	* 4.7	6.5		6.0	* 4.7
Max Green Setting (Gmax), s	6.1	* 63	* 20	20.5		73.9	* 10
Max Q Clear Time (g_c+I1), s	5.0	35.6	13.8	18.4		33.9	7.8
Green Ext Time (p_c), s	0.0	20.9	0.4	1.0		19.7	0.0

Intersection Summary		
HCM 6th Ctrl Delay		31.7
HCM 6th LOS		C

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	447	870	54	380	995	50
Future Volume (veh/h)	447	870	54	380	995	50
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	491	0	59	418	1093	55
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	5	5
Cap, veh/h	811		104	1343	1245	571
Arrive On Green	0.23	0.00	0.06	0.38	0.37	0.37
Sat Flow, veh/h	3647	1585	1781	3647	3374	1547
Grp Volume(v), veh/h	491	0	59	418	1093	55
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1687	1547
Q Serve(g_s), s	5.4	0.0	1.4	3.6	13.3	1.0
Cycle Q Clear(g_c), s	5.4	0.0	1.4	3.6	13.3	1.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	811		104	1343	1245	571
V/C Ratio(X)	0.61		0.57	0.31	0.88	0.10
Avail Cap(c_a), veh/h	1289		244	2067	2547	1168
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.2	0.0	20.1	9.6	12.9	9.0
Incr Delay (d2), s/veh	0.3	0.0	1.8	0.0	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.6	1.1	4.0	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.4	0.0	21.9	9.7	13.7	9.1
LnGrp LOS	B		C	A	B	A
Approach Vol, veh/h	491	A		477	1148	
Approach Delay, s/veh	15.4			11.2	13.5	
Approach LOS	B			B	B	

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.6	16.2				22.8		21.1
Change Period (Y+Rc), s	4.0	* 6.2				6.2		4.9
Max Green Setting (Gmax), s	6.8	* 16				25.5		33.1
Max Q Clear Time (g_c+I1), s	3.4	7.4				5.6		15.3
Green Ext Time (p_c), s	0.0	0.6				0.6		0.9

Intersection Summary	
HCM 6th Ctrl Delay	13.4
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	262	178	88	719	389	266
Future Volume (veh/h)	262	178	88	719	389	266
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1604	1604	1781	1781	1648	1648
Adj Flow Rate, veh/h	298	202	100	817	442	302
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	20	20	8	8	17	17
Cap, veh/h	481	388	130	2076	807	548
Arrive On Green	0.16	0.16	0.08	0.61	0.45	0.45
Sat Flow, veh/h	2963	2392	1697	3474	1867	1211
Grp Volume(v), veh/h	298	202	100	817	387	357
Grp Sat Flow(s),veh/h/ln	1481	1196	1697	1692	1566	1430
Q Serve(g_s), s	5.0	4.1	3.1	6.6	9.6	9.7
Cycle Q Clear(g_c), s	5.0	4.1	3.1	6.6	9.6	9.7
Prop In Lane	1.00	1.00	1.00			0.85
Lane Grp Cap(c), veh/h	481	388	130	2076	708	647
V/C Ratio(X)	0.62	0.52	0.77	0.39	0.55	0.55
Avail Cap(c_a), veh/h	1163	939	460	3701	1156	1056
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.9	20.5	24.2	5.3	10.7	10.7
Incr Delay (d2), s/veh	1.3	1.1	12.5	0.4	2.4	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.1	1.6	1.7	3.2	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.2	21.6	36.7	5.7	13.1	13.3
LnGrp LOS	C	C	D	A	B	B
Approach Vol, veh/h	500			917	744	
Approach Delay, s/veh	21.9			9.1	13.2	
Approach LOS	C			A	B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	8.6	30.2		14.7		38.8
Change Period (Y+Rc), s	4.5	6.0		6.0		6.0
Max Green Setting (Gmax), s	14.5	39.5		21.0		58.5
Max Q Clear Time (g_c+I1), s	5.1	11.7		7.0		8.6
Green Ext Time (p_c), s	0.2	12.5		1.7		18.5

Intersection Summary			
HCM 6th Ctrl Delay			13.5
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	406	1143	475	165	821	116	566	897	168	113	764	63
Future Volume (veh/h)	406	1143	475	165	821	116	566	897	168	113	764	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1826	1826	1826	1811	1811	1811
Adj Flow Rate, veh/h	419	1178	490	170	846	120	584	925	173	116	788	65
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	2	2	2	5	5	5	6	6	6
Cap, veh/h	336	1112	910	148	742	458	458	1335	724	139	695	602
Arrive On Green	0.19	0.32	0.32	0.08	0.21	0.21	0.26	0.38	0.38	0.08	0.20	0.20
Sat Flow, veh/h	1767	3526	1572	1781	3554	1585	1739	3469	1547	1725	3441	1535
Grp Volume(v), veh/h	419	1178	490	170	846	120	584	925	173	116	788	65
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1781	1777	1585	1739	1735	1547	1725	1721	1535
Q Serve(g_s), s	28.5	47.3	28.6	12.5	31.3	8.7	39.5	33.5	10.0	9.9	30.3	4.0
Cycle Q Clear(g_c), s	28.5	47.3	28.6	12.5	31.3	8.7	39.5	33.5	10.0	9.9	30.3	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	336	1112	910	148	742	458	458	1335	724	139	695	602
V/C Ratio(X)	1.25	1.06	0.54	1.15	1.14	0.26	1.28	0.69	0.24	0.84	1.13	0.11
Avail Cap(c_a), veh/h	336	1112	910	148	742	458	458	1335	724	213	695	602
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.7	51.3	19.3	68.8	59.3	41.0	55.3	38.7	23.9	68.0	59.8	29.0
Incr Delay (d2), s/veh	134.0	44.3	0.6	118.2	79.1	0.3	140.0	1.6	0.2	15.6	77.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.3	27.6	10.6	10.6	22.2	3.5	35.1	14.6	3.8	5.0	20.7	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	194.8	95.6	20.0	187.0	138.5	41.3	195.3	40.3	24.1	83.6	137.1	29.0
LnGrp LOS	F	F	B	F	F	D	F	D	C	F	F	C
Approach Vol, veh/h		2087			1136			1682			969	
Approach Delay, s/veh		97.8			135.5			92.4			123.4	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	53.0	44.0	36.0	33.0	37.0	16.6	63.4
Change Period (Y+Rc), s	4.5	5.7	4.5	5.7	4.5	5.7	4.5	5.7
Max Green Setting (Gmax), s	12.5	47.3	39.5	30.3	28.5	31.3	18.5	51.3
Max Q Clear Time (g_c+I1), s	14.5	49.3	41.5	32.3	30.5	33.3	11.9	35.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.1	6.5

Intersection Summary	
HCM 6th Ctrl Delay	107.8
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	676	516	241	447	298	607	257	601	314	229	684	267
Future Volume (veh/h)	676	516	241	447	298	607	257	601	314	229	684	267
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1856	1856	1856	1841	1841	1841	1826	1826	1826
Adj Flow Rate, veh/h	712	543	254	471	314	639	271	633	331	241	720	281
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	5	5	5
Cap, veh/h	580	1392	825	524	776	564	229	592	502	241	614	786
Arrive On Green	0.33	0.40	0.40	0.15	0.22	0.22	0.13	0.17	0.17	0.14	0.18	0.18
Sat Flow, veh/h	1753	3497	1560	3428	3526	1572	1753	3497	1560	1739	3469	1547
Grp Volume(v), veh/h	712	543	254	471	314	639	271	633	331	241	720	281
Grp Sat Flow(s),veh/h/ln	1753	1749	1560	1714	1763	1572	1753	1749	1560	1739	1735	1547
Q Serve(g_s), s	43.0	14.4	11.9	17.5	9.9	28.6	17.0	22.0	22.0	18.0	23.0	14.2
Cycle Q Clear(g_c), s	43.0	14.4	11.9	17.5	9.9	28.6	17.0	22.0	22.0	18.0	23.0	14.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	580	1392	825	524	776	564	229	592	502	241	614	786
V/C Ratio(X)	1.23	0.39	0.31	0.90	0.40	1.13	1.18	1.07	0.66	1.00	1.17	0.36
Avail Cap(c_a), veh/h	580	1392	825	949	776	564	229	592	502	241	614	786
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.5	27.9	17.2	54.1	43.4	41.7	56.5	54.0	37.9	56.0	53.5	19.2
Incr Delay (d2), s/veh	117.2	0.8	1.0	2.3	1.6	80.4	117.5	57.0	4.3	58.2	94.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	37.3	6.2	4.5	7.7	4.5	30.4	15.0	14.3	9.7	11.8	18.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	160.7	28.7	18.2	56.4	45.0	122.1	174.0	111.0	42.2	114.2	147.8	19.8
LnGrp LOS	F	C	B	E	D	F	F	F	D	F	F	B
Approach Vol, veh/h		1509			1424			1235			1242	
Approach Delay, s/veh		89.2			83.4			106.4			112.3	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.9	57.1	21.0	28.0	47.0	34.0	22.0	27.0
Change Period (Y+Rc), s	4.0	5.4	4.0	5.0	4.0	5.4	4.0	5.0
Max Green Setting (Gmax), s	36.0	35.6	17.0	23.0	43.0	28.6	18.0	22.0
Max Q Clear Time (g_c+I1), s	19.5	16.4	19.0	25.0	45.0	30.6	20.0	24.0
Green Ext Time (p_c), s	0.3	8.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	96.9
HCM 6th LOS	F

Intersection						
Int Delay, s/veh	0.2					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	26	1032	50	0	700
Future Vol, veh/h	0	26	1032	50	0	700
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	28	1122	54	0	761

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	588	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	452	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	452	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	452	-
HCM Lane V/C Ratio	-	-	0.063	-
HCM Control Delay (s)	-	-	13.5	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.2	-

Intersection						
Int Delay, s/veh	0.3					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	36	1046	54	0	700
Future Vol, veh/h	0	36	1046	54	0	700
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	39	1137	59	0	761

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	598	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	445	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	445	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	445	-
HCM Lane V/C Ratio	-	-	0.088	-
HCM Control Delay (s)	-	-	13.9	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.3	-

IMPROVEMENT PHASING ANALYSIS SYNCHRO RESULTS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	551	250	363	679	0	0	0	0	259	3	252
Future Volume (veh/h)	0	551	250	363	679	0	0	0	0	259	3	252
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1841	1841	0				1856	1856	1856
Adj Flow Rate, veh/h	0	626	284	412	772	0				294	3	286
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88				0.88	0.88	0.88
Percent Heavy Veh, %	0	2	2	4	4	0				3	3	3
Cap, veh/h	0	791	351	444	969	0				312	3	304
Arrive On Green	0.00	0.23	0.23	0.25	0.53	0.00				0.37	0.37	0.37
Sat Flow, veh/h	0	3629	1537	1753	1841	0				840	9	817
Grp Volume(v), veh/h	0	616	294	412	772	0				583	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1594	1753	1841	0				1666	0	0
Q Serve(g_s), s	0.0	15.3	15.7	20.6	30.7	0.0				30.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	15.3	15.7	20.6	30.7	0.0				30.4	0.0	0.0
Prop In Lane	0.00		0.96	1.00		0.00				0.50		0.49
Lane Grp Cap(c), veh/h	0	778	364	444	969	0				619	0	0
V/C Ratio(X)	0.00	0.79	0.81	0.93	0.80	0.00				0.94	0.00	0.00
Avail Cap(c_a), veh/h	0	895	419	547	1140	0				713	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	32.6	32.8	32.7	17.4	0.0				27.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	4.2	9.8	18.3	3.4	0.0				18.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.6	6.9	10.7	12.8	0.0				14.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	36.8	42.5	51.1	20.7	0.0				45.7	0.0	0.0
LnGrp LOS	A	D	D	D	C	A				D	A	A
Approach Vol, veh/h		910			1184						583	
Approach Delay, s/veh		38.7			31.3						45.7	
Approach LOS		D			C						D	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	26.7	25.1		37.9		51.8						
Change Period (Y+Rc), s	4.0	4.6		4.6		4.6						
Max Green Setting (Gmax), s	28.0	23.6		38.4		55.6						
Max Q Clear Time (g_c+I1), s	22.6	17.7		32.4		32.7						
Green Ext Time (p_c), s	0.1	2.8		1.0		5.5						

Intersection Summary			
HCM 6th Ctrl Delay			36.9
HCM 6th LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	714	0	0	881	382	161	2	239	0	0	0
Future Volume (veh/h)	96	714	0	0	881	382	161	2	239	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1796	1796	1796			
Adj Flow Rate, veh/h	107	793	0	0	979	424	179	2	266			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	3	3	0	0	3	3	7	7	7			
Cap, veh/h	135	2102	0	0	1144	489	192	2	286			
Arrive On Green	0.08	0.60	0.00	0.00	0.48	0.48	0.30	0.30	0.30			
Sat Flow, veh/h	1767	3618	0	0	2499	1027	638	7	948			
Grp Volume(v), veh/h	107	793	0	0	713	690	447	0	0			
Grp Sat Flow(s),veh/h/ln	1767	1763	0	0	1763	1671	1594	0	0			
Q Serve(g_s), s	5.4	10.5	0.0	0.0	32.1	33.2	24.5	0.0	0.0			
Cycle Q Clear(g_c), s	5.4	10.5	0.0	0.0	32.1	33.2	24.5	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.61	0.40		0.60			
Lane Grp Cap(c), veh/h	135	2102	0	0	838	795	480	0	0			
V/C Ratio(X)	0.79	0.38	0.00	0.00	0.85	0.87	0.93	0.00	0.00			
Avail Cap(c_a), veh/h	196	2445	0	0	948	899	560	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	40.9	9.5	0.0	0.0	20.8	21.1	30.5	0.0	0.0			
Incr Delay (d2), s/veh	7.7	0.1	0.0	0.0	6.7	8.2	19.5	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.6	3.7	0.0	0.0	13.8	13.8	11.6	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.6	9.6	0.0	0.0	27.5	29.2	50.0	0.0	0.0			
LnGrp LOS	D	A	A	A	C	C	D	A	A			
Approach Vol, veh/h		900			1403			447				
Approach Delay, s/veh		14.2			28.4			50.0				
Approach LOS		B			C			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		58.3			10.9	47.4		31.7				
Change Period (Y+Rc), s		4.6			4.0	4.6		4.6				
Max Green Setting (Gmax), s		62.4			10.0	48.4		31.6				
Max Q Clear Time (g_c+I1), s		12.5			7.4	35.2		26.5				
Green Ext Time (p_c), s		6.2			0.0	7.6		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			27.2									
HCM 6th LOS			C									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	990	364	276	826	0	0	0	0	372	6	207
Future Volume (veh/h)	0	990	364	276	826	0	0	0	0	372	6	207
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1841	1841	0				1856	1856	1856
Adj Flow Rate, veh/h	0	1125	414	314	939	0				423	7	235
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88				0.88	0.88	0.88
Percent Heavy Veh, %	0	2	2	4	4	0				3	3	3
Cap, veh/h	0	1071	394	342	967	0				414	7	230
Arrive On Green	0.00	0.29	0.29	0.20	0.53	0.00				0.38	0.38	0.38
Sat Flow, veh/h	0	3846	1353	1753	1841	0				1077	18	599
Grp Volume(v), veh/h	0	1041	498	314	939	0				665	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1627	1753	1841	0				1694	0	0
Q Serve(g_s), s	0.0	29.8	29.8	18.0	50.6	0.0				39.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	29.8	29.8	18.0	50.6	0.0				39.4	0.0	0.0
Prop In Lane	0.00		0.83	1.00		0.00				0.64		0.35
Lane Grp Cap(c), veh/h	0	991	474	342	967	0				651	0	0
V/C Ratio(X)	0.00	1.05	1.05	0.92	0.97	0.00				1.02	0.00	0.00
Avail Cap(c_a), veh/h	0	991	474	359	981	0				651	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	36.3	36.3	40.4	23.5	0.0				31.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	42.7	55.3	26.2	21.7	0.0				40.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	18.0	18.8	10.2	26.1	0.0				22.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	79.0	91.6	66.6	45.2	0.0				72.1	0.0	0.0
LnGrp LOS	A	F	F	E	D	A				F	A	A
Approach Vol, veh/h		1539			1253						665	
Approach Delay, s/veh		83.1			50.6						72.1	
Approach LOS		F			D						E	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	24.0	34.4		44.0		58.4						
Change Period (Y+Rc), s	4.0	4.6		4.6		4.6						
Max Green Setting (Gmax), s	21.0	29.6		39.4		54.6						
Max Q Clear Time (g_c+I1), s	20.0	31.8		41.4		52.6						
Green Ext Time (p_c), s	0.0	0.0		0.0		1.2						

Intersection Summary			
HCM 6th Ctrl Delay			69.2
HCM 6th LOS			E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	1218	0	0	839	318	263	4	422	0	0	0
Future Volume (veh/h)	144	1218	0	0	839	318	263	4	422	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1796	1796	1796			
Adj Flow Rate, veh/h	160	1353	0	0	932	353	292	4	469			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	3	3	0	0	3	3	7	7	7			
Cap, veh/h	161	1729	0	0	903	340	255	3	410			
Arrive On Green	0.09	0.49	0.00	0.00	0.36	0.36	0.42	0.42	0.42			
Sat Flow, veh/h	1767	3618	0	0	2599	943	607	8	975			
Grp Volume(v), veh/h	160	1353	0	0	654	631	765	0	0			
Grp Sat Flow(s),veh/h/ln	1767	1763	0	0	1763	1686	1590	0	0			
Q Serve(g_s), s	9.3	32.8	0.0	0.0	37.2	37.2	43.4	0.0	0.0			
Cycle Q Clear(g_c), s	9.3	32.8	0.0	0.0	37.2	37.2	43.4	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.56	0.38		0.61			
Lane Grp Cap(c), veh/h	161	1729	0	0	635	608	669	0	0			
V/C Ratio(X)	0.99	0.78	0.00	0.00	1.03	1.04	1.14	0.00	0.00			
Avail Cap(c_a), veh/h	161	1729	0	0	635	608	669	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	46.9	21.8	0.0	0.0	33.0	33.0	29.9	0.0	0.0			
Incr Delay (d2), s/veh	69.0	2.4	0.0	0.0	43.3	46.9	81.7	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.2	13.4	0.0	0.0	23.0	22.6	31.0	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	115.9	24.1	0.0	0.0	76.3	79.9	111.6	0.0	0.0			
LnGrp LOS	F	C	A	A	F	F	F	A	A			
Approach Vol, veh/h		1513			1285			765				
Approach Delay, s/veh		33.8			78.1			111.6				
Approach LOS		C			E			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		55.2			13.4	41.8		48.0				
Change Period (Y+Rc), s		4.6			4.0	4.6		4.6				
Max Green Setting (Gmax), s		50.6			9.4	37.2		43.4				
Max Q Clear Time (g_c+I1), s		34.8			11.3	39.2		45.4				
Green Ext Time (p_c), s		8.6			0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			66.5									
HCM 6th LOS			E									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	305	888	377	136	634	99	439	742	167	113	625	63
Future Volume (veh/h)	305	888	377	136	634	99	439	742	167	113	625	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1826	1826	1826	1811	1811	1811
Adj Flow Rate, veh/h	314	915	389	140	654	102	453	765	172	116	644	65
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	2	2	2	5	5	5	6	6	6
Cap, veh/h	335	1081	904	151	719	449	467	1350	733	139	693	600
Arrive On Green	0.19	0.31	0.31	0.08	0.20	0.20	0.27	0.39	0.39	0.08	0.20	0.20
Sat Flow, veh/h	1767	3526	1572	1781	3554	1585	1739	3469	1547	1725	3441	1535
Grp Volume(v), veh/h	314	915	389	140	654	102	453	765	172	116	644	65
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1781	1777	1585	1739	1735	1547	1725	1721	1535
Q Serve(g_s), s	25.8	35.8	20.6	11.5	26.5	7.3	37.9	25.4	9.7	9.8	27.1	4.0
Cycle Q Clear(g_c), s	25.8	35.8	20.6	11.5	26.5	7.3	37.9	25.4	9.7	9.8	27.1	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	335	1081	904	151	719	449	467	1350	733	139	693	600
V/C Ratio(X)	0.94	0.85	0.43	0.93	0.91	0.23	0.97	0.57	0.23	0.83	0.93	0.11
Avail Cap(c_a), veh/h	342	1133	927	151	756	465	467	1350	733	217	708	607
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.8	47.8	17.7	66.9	57.4	40.4	53.3	35.2	22.9	66.7	57.7	28.5
Incr Delay (d2), s/veh	32.8	5.9	0.3	51.5	14.6	0.3	34.0	0.6	0.2	14.6	18.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.6	16.6	7.6	7.4	13.4	2.9	21.0	11.0	3.6	4.9	13.6	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.6	53.7	18.0	118.3	72.0	40.7	87.3	35.8	23.1	81.2	76.2	28.6
LnGrp LOS	F	D	B	F	E	D	F	D	C	F	E	C
Approach Vol, veh/h		1618			896			1390			825	
Approach Delay, s/veh		52.4			75.7			51.0			73.2	
Approach LOS		D			E			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	50.8	44.0	35.3	32.4	35.5	16.4	63.0				
Change Period (Y+Rc), s	4.5	5.7	4.5	5.7	4.5	5.7	4.5	5.7				
Max Green Setting (Gmax), s	12.5	47.3	39.5	30.3	28.5	31.3	18.5	51.3				
Max Q Clear Time (g_c+I1), s	13.5	37.8	39.9	29.1	27.8	28.5	11.8	27.4				
Green Ext Time (p_c), s	0.0	5.3	0.0	0.6	0.1	1.3	0.1	6.4				

Intersection Summary		
HCM 6th Ctrl Delay		60.0
HCM 6th LOS		E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	521	455	184	383	274	517	188	512	279	224	574	202
Future Volume (veh/h)	521	455	184	383	274	517	188	512	279	224	574	202
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1856	1856	1856	1841	1841	1841	1826	1826	1826
Adj Flow Rate, veh/h	548	479	194	403	288	544	198	539	294	236	604	213
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	5	5	5
Cap, veh/h	542	1316	788	460	710	531	226	651	499	237	671	778
Arrive On Green	0.31	0.38	0.38	0.13	0.20	0.20	0.13	0.19	0.19	0.14	0.19	0.19
Sat Flow, veh/h	1753	3497	1560	3428	3526	1572	1753	3497	1560	1739	3469	1547
Grp Volume(v), veh/h	548	479	194	403	288	544	198	539	294	236	604	213
Grp Sat Flow(s),veh/h/ln	1753	1749	1560	1714	1763	1572	1753	1749	1560	1739	1735	1547
Q Serve(g_s), s	34.0	10.9	7.7	12.7	7.8	22.1	12.2	16.3	17.4	14.9	18.7	8.7
Cycle Q Clear(g_c), s	34.0	10.9	7.7	12.7	7.8	22.1	12.2	16.3	17.4	14.9	18.7	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	542	1316	788	460	710	531	226	651	499	237	671	778
V/C Ratio(X)	1.01	0.36	0.25	0.88	0.41	1.02	0.88	0.83	0.59	1.00	0.90	0.27
Avail Cap(c_a), veh/h	542	1316	788	499	710	531	239	668	507	237	671	778
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	24.8	15.4	46.7	38.2	36.4	47.1	43.1	31.3	47.5	43.3	15.8
Incr Delay (d2), s/veh	41.5	0.8	0.7	14.3	1.7	45.5	26.2	9.4	2.8	57.0	15.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.5	4.6	2.9	6.3	3.5	20.6	6.9	7.9	6.9	10.2	9.4	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.5	25.6	16.1	61.0	39.9	81.9	73.3	52.5	34.1	104.5	59.2	16.2
LnGrp LOS	F	C	B	E	D	F	E	D	C	F	E	B
Approach Vol, veh/h		1221			1235			1031			1053	
Approach Delay, s/veh		48.3			65.3			51.3			60.6	
Approach LOS		D			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.8	46.8	18.2	26.3	38.0	27.5	19.0	25.5
Change Period (Y+Rc), s	4.0	5.4	4.0	5.0	4.0	5.4	4.0	5.0
Max Green Setting (Gmax), s	16.0	39.6	15.0	21.0	34.0	21.6	15.0	21.0
Max Q Clear Time (g_c+I1), s	14.7	12.9	14.2	20.7	36.0	24.1	16.9	19.4
Green Ext Time (p_c), s	0.1	7.9	0.0	0.2	0.0	0.0	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	56.5
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	505	301	170	499	108	407	440	117	110	577	105
Future Volume (veh/h)	112	505	301	170	499	108	407	440	117	110	577	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1826	1826	1826	1811	1811	1811
Adj Flow Rate, veh/h	115	521	310	175	514	111	420	454	121	113	595	108
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	2	2	2	5	5	5	6	6	6
Cap, veh/h	141	967	837	200	1091	615	448	1302	755	140	683	427
Arrive On Green	0.08	0.27	0.27	0.11	0.31	0.31	0.26	0.38	0.38	0.08	0.20	0.20
Sat Flow, veh/h	1767	3526	1572	1781	3554	1585	1739	3469	1547	1725	3441	1535
Grp Volume(v), veh/h	115	521	310	175	514	111	420	454	121	113	595	108
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1781	1777	1585	1739	1735	1547	1725	1721	1535
Q Serve(g_s), s	8.3	16.4	14.9	12.6	15.2	6.0	30.7	12.2	5.7	8.4	21.8	7.1
Cycle Q Clear(g_c), s	8.3	16.4	14.9	12.6	15.2	6.0	30.7	12.2	5.7	8.4	21.8	7.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	967	837	200	1091	615	448	1302	755	140	683	427
V/C Ratio(X)	0.82	0.54	0.37	0.87	0.47	0.18	0.94	0.35	0.16	0.81	0.87	0.25
Avail Cap(c_a), veh/h	167	967	837	223	1091	615	526	1316	761	252	768	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.79	0.79	0.79
Uniform Delay (d), s/veh	58.9	40.2	17.7	56.8	36.5	26.2	47.2	29.2	18.5	58.7	50.5	36.4
Incr Delay (d2), s/veh	22.6	2.1	1.3	27.6	1.5	0.6	22.7	0.2	0.1	8.5	8.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	7.4	5.7	7.2	6.9	0.1	16.1	5.2	2.1	4.0	10.1	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.5	42.3	19.0	84.4	37.9	26.8	69.9	29.4	18.6	67.2	58.5	36.7
LnGrp LOS	F	D	B	F	D	C	E	C	B	E	E	D
Approach Vol, veh/h		946			800			995			816	
Approach Delay, s/veh		39.4			46.6			45.1			56.9	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.1	41.4	38.0	31.5	14.9	45.6	15.0	54.5
Change Period (Y+Rc), s	4.5	5.7	4.5	5.7	4.5	5.7	4.5	5.7
Max Green Setting (Gmax), s	16.3	25.0	39.3	29.0	12.3	29.0	19.0	49.3
Max Q Clear Time (g_c+I1), s	14.6	18.4	32.7	23.8	10.3	17.2	10.4	14.2
Green Ext Time (p_c), s	0.1	2.6	0.8	2.0	0.0	3.0	0.2	3.8

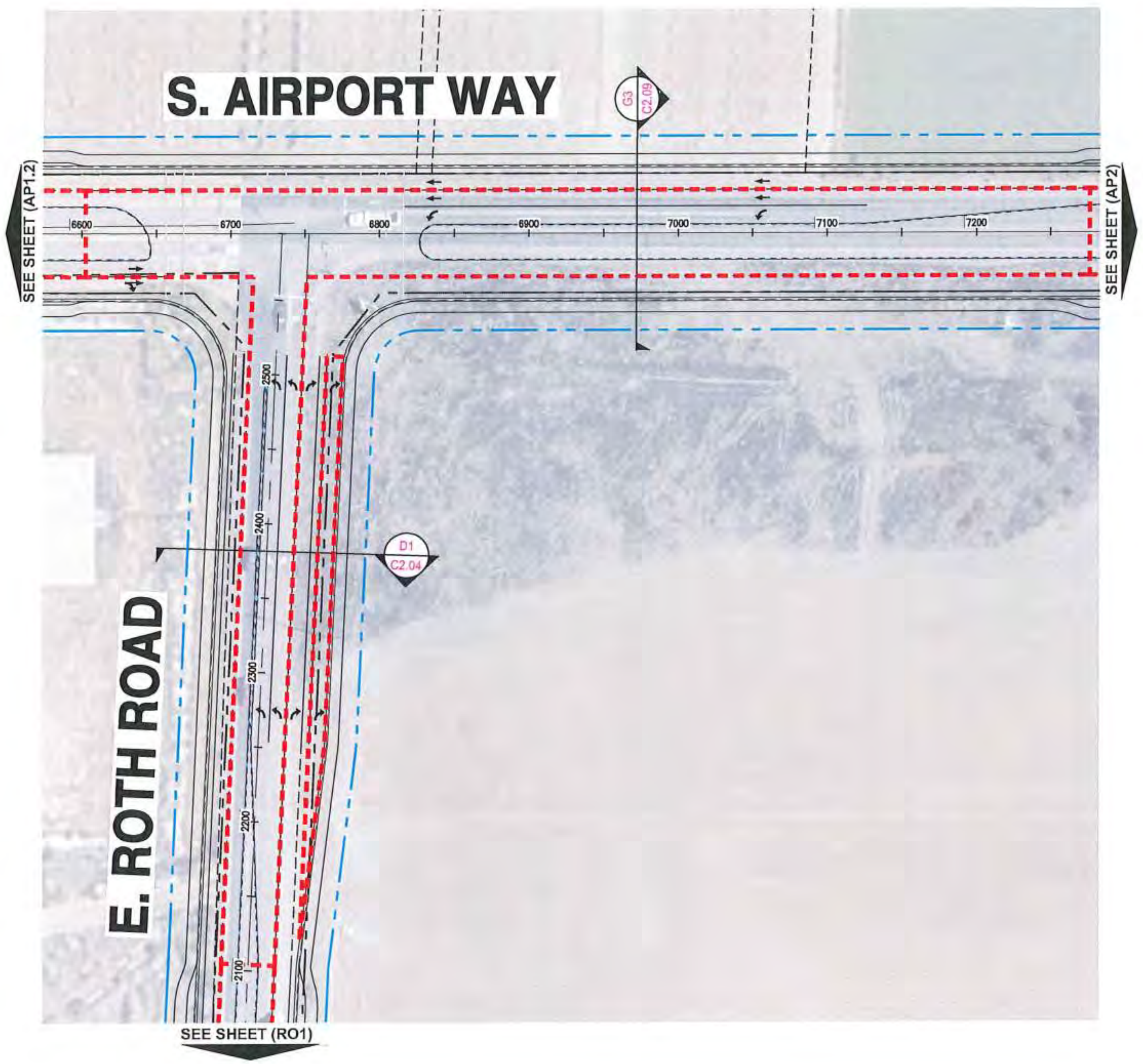
Intersection Summary	
HCM 6th Ctrl Delay	46.6
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	184	251	80	343	601	248	231	383	341	281	401	376
Future Volume (veh/h)	184	251	80	343	601	248	231	383	341	281	401	376
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1856	1856	1856	1841	1841	1841	1826	1826	1826
Adj Flow Rate, veh/h	194	264	84	361	633	261	243	403	359	296	422	396
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	5	5	5
Cap, veh/h	214	974	434	381	943	420	276	798	529	309	861	573
Arrive On Green	0.12	0.28	0.28	0.11	0.27	0.27	0.16	0.23	0.23	0.18	0.25	0.25
Sat Flow, veh/h	1753	3497	1560	3428	3526	1572	1753	3497	1560	1739	3469	1547
Grp Volume(v), veh/h	194	264	84	361	633	261	243	403	359	296	422	396
Grp Sat Flow(s),veh/h/ln	1753	1749	1560	1714	1763	1572	1753	1749	1560	1739	1735	1547
Q Serve(g_s), s	9.8	5.3	3.7	9.4	14.4	13.1	12.2	9.0	17.8	15.2	9.4	19.5
Cycle Q Clear(g_c), s	9.8	5.3	3.7	9.4	14.4	13.1	12.2	9.0	17.8	15.2	9.4	19.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	214	974	434	381	943	420	276	798	529	309	861	573
V/C Ratio(X)	0.91	0.27	0.19	0.95	0.67	0.62	0.88	0.50	0.68	0.96	0.49	0.69
Avail Cap(c_a), veh/h	214	974	434	381	943	420	312	816	537	309	861	573
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	25.3	24.8	39.7	29.4	29.0	37.1	30.3	25.5	36.7	29.0	24.0
Incr Delay (d2), s/veh	36.0	0.7	1.0	32.5	3.8	6.7	20.4	1.1	4.5	39.5	0.9	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	2.3	1.5	5.6	6.5	5.6	6.7	3.9	7.0	9.7	3.9	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.0	26.0	25.8	72.2	33.2	35.7	57.5	31.4	30.0	76.1	29.9	28.5
LnGrp LOS	E	C	C	E	C	D	E	C	C	E	C	C
Approach Vol, veh/h		542			1255			1005			1114	
Approach Delay, s/veh		43.5			45.0			37.2			41.7	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	30.5	18.2	27.3	15.0	29.5	20.0	25.5
Change Period (Y+Rc), s	4.0	5.4	4.0	5.0	4.0	5.4	4.0	5.0
Max Green Setting (Gmax), s	10.0	24.6	16.0	21.0	11.0	23.6	16.0	21.0
Max Q Clear Time (g_c+I1), s	11.4	7.3	14.2	21.5	11.8	16.4	17.2	19.8
Green Ext Time (p_c), s	0.0	3.2	0.0	0.0	0.0	4.4	0.0	0.8

Intersection Summary		
HCM 6th Ctrl Delay		41.8
HCM 6th LOS		D

PFIP PLATES



DESCRIPTION OF WORK

-Widen E. Roth Road from (2) lanes to (4) lanes with a 14'0 wide landscaped median. Construct (2) dedicated left turn lanes and (2) dedicated right turn lanes.
-Widen S. Airport Way from (2) lanes to (4) lanes with a 36'0 wide landscaped median for future expansion. Construct (1) dedicated left turn lane on the South-bound approach.
-Construct new traffic signal.

LEGEND

- CENTERLINE
- EXISTING PROPERTY LINES (PER GIS MAP)
- EXISTING RIGHT-OF-WAY (PER GIS MAP)
- PROPOSED RIGHT-OF-WAY – 2 LANE SEE SHEET C2.01 FOR TYPICAL SECTION
- PROPOSED RIGHT-OF-WAY – 4 LANE SEE SHEET C2.03 FOR TYPICAL SECTION
- PROPOSED RIGHT-OF-WAY – 6 LANE SEE SHEET C2.06 FOR TYPICAL SECTION
- PROPOSED CURB, GUTTER AND SIDEWALK
- PROPOSED MEDIAN CURB
- PROPOSED P.F.I.P. IMPROVEMENT LIMITS
- PROPOSED R/W ACQUISITION AREA

50 25 0 50
1" = 100'

CALL BEFORE YOU DIG
USA
800-227-2600

PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS

NO.	DESCRIPTIONS	DATE	APPROVED

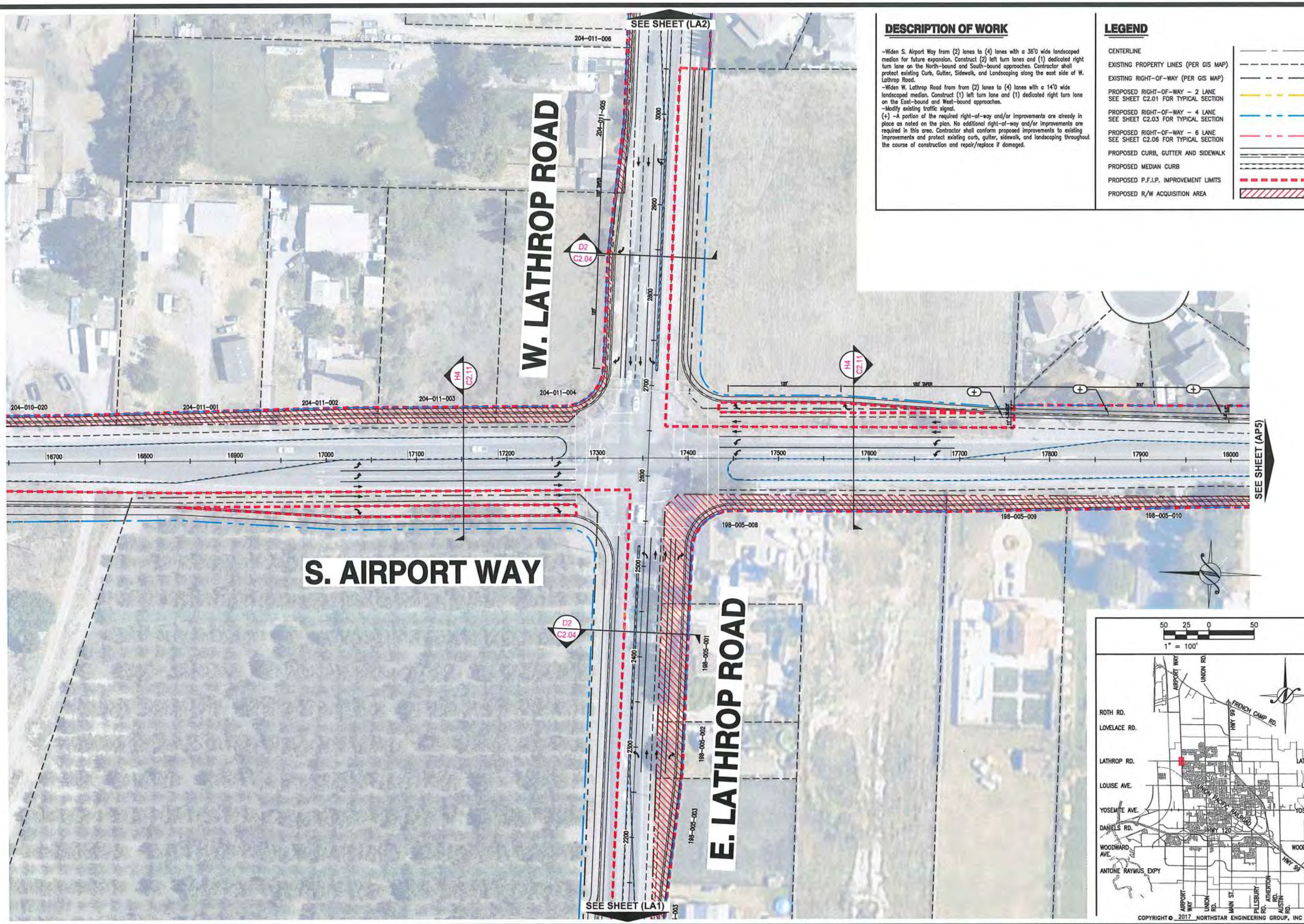
S. AIRPORT WY & E. ROTH RD

PRELIMINARY OPINION OF PROBABLE COST
PFIP TRANSPORTATION
MANTECA, CALIFORNIA

NorthStar Engineering Group, Inc.
• CIVIL ENGINEERING • SURVEYING • PLANNING •
620 12th Street Modesto, CA 95354
(209) 524-3525 Phone (209) 524-3526 Fax

JOB #:	14-1489
DATE:	6/9/2017
SCALE:	AS NOTED
DRAWN:	KM
DESIGN:	KM
CHK'D:	TD

SHEET NUMBER
INT1



DESCRIPTION OF WORK

-Widen S. Airport Way from (2) lanes to (4) lanes with a 36'0 wide landscaped median for future expansion. Construct (2) left turn lanes and (1) dedicated right turn lane on the North-bound and South-bound approaches. Contractor shall protect existing Curb, Gutter, Sidewalk, and Landscaping along the east side of W. Lathrop Road.
-Widen W. Lathrop Road from from (2) lanes to (4) lanes with a 14'0 wide landscaped median. Construct (1) left turn lane and (1) dedicated right turn lane on the East-bound and West-bound approaches.
-Modify existing traffic signal.
(+) -A portion of the required right-of-way and/or improvements are already in place as noted on the plan. No additional right-of-way and/or improvements are required in this area. Contractor shall conform proposed improvements to existing improvements and protect existing curb, gutter, sidewalk, and landscaping throughout the course of construction and repair/replace if damaged.

LEGEND

- CENTERLINE
- EXISTING PROPERTY LINES (PER GIS MAP)
- EXISTING RIGHT-OF-WAY (PER GIS MAP)
- PROPOSED RIGHT-OF-WAY – 2 LANE SEE SHEET C2.01 FOR TYPICAL SECTION
- PROPOSED RIGHT-OF-WAY – 4 LANE SEE SHEET C2.03 FOR TYPICAL SECTION
- PROPOSED RIGHT-OF-WAY – 6 LANE SEE SHEET C2.06 FOR TYPICAL SECTION
- PROPOSED CURB, GUTTER AND SIDEWALK
- PROPOSED MEDIAN CURB
- PROPOSED P.F.I.P. IMPROVEMENT LIMITS
- PROPOSED R/W ACQUISITION AREA

CALL BEFORE YOU DIG 800-227-2600

PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS

NO.	DESCRIPTIONS	DATE	APPROVED

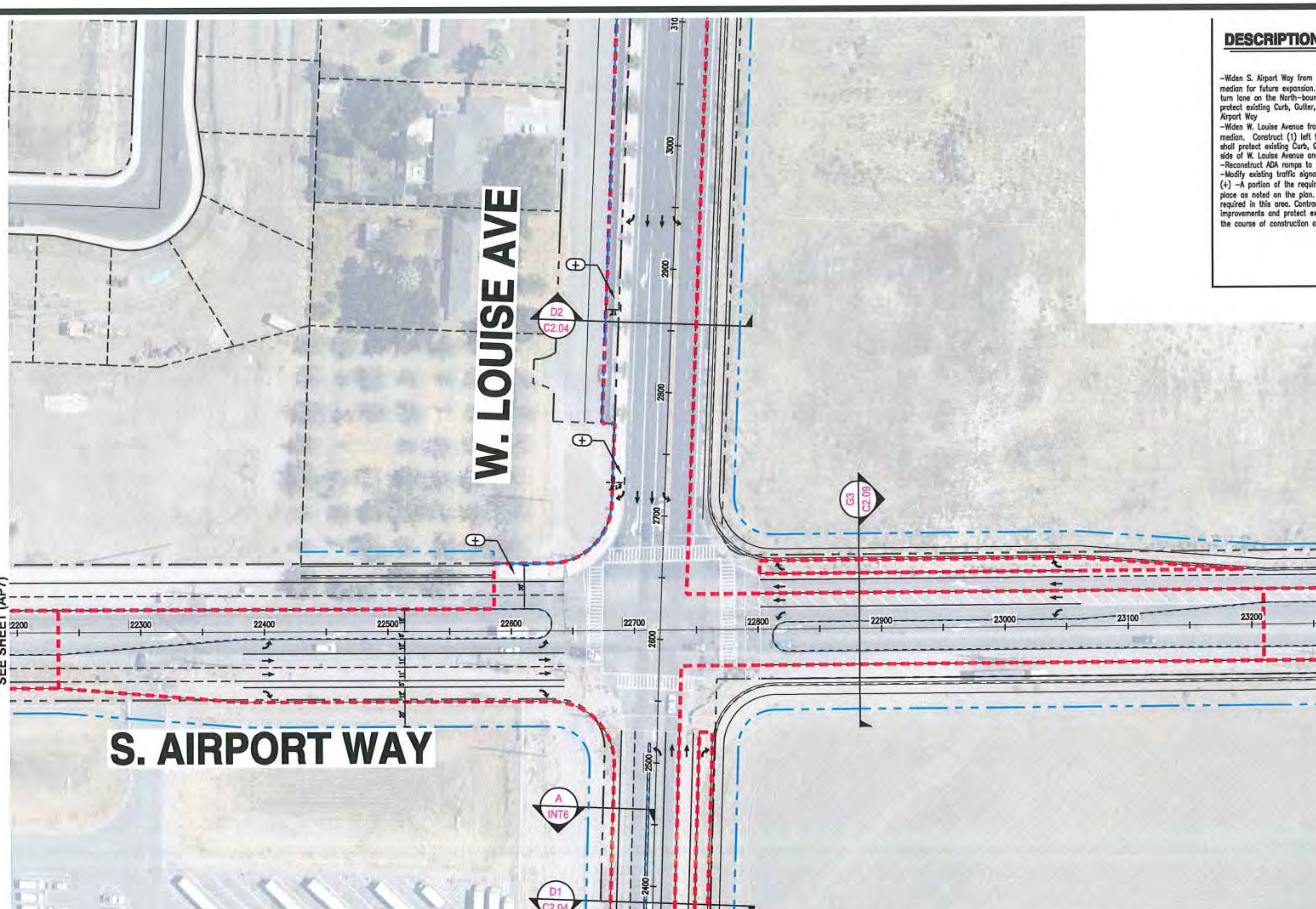
S. AIRPORT WY & LATHROP RD

PRELIMINARY OPINION OF PROBABLE COST
PFIP TRANSPORTATION
MANTECA, CALIFORNIA

NorthStar Engineering Group, Inc.
• CIVIL ENGINEERING • SURVEYING • PLANNING •
620 12th Street Modesto, CA 95354
(209) 524-3525 Phone (209) 524-3526 Fax

JOB #:	14-1489
DATE:	6/9/2017
SCALE:	AS NOTED
DRAWN:	KM
DESIGN:	KM
CHK'D:	TD

SHEET NUMBER
INT5

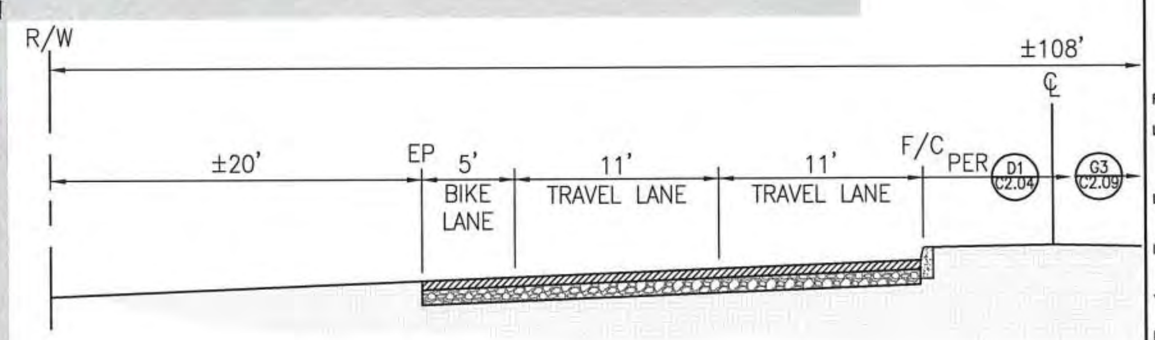


DESCRIPTION OF WORK

-Widen S. Airport Way from (2) lanes to (4) lanes with a 36'0 wide landscaped median for future expansion. Construct (1) left turn lanes and (1) dedicated right turn lane on the North-bound and South-bound approaches. Contractor shall protect existing Curb, Gutter, Sidewalk, and Landscaping along the east side of S. Airport Way
-Widen W. Louise Avenue from (2) lanes to (4) lanes with a 14'0 wide landscaped median. Construct (1) left turn lane and (1) dedicated right turn lane. Contractor shall protect existing Curb, Gutter, and Sidewalk, and Landscaping along the north side of W. Louise Avenue and existing median on West-bound W. Louise Avenue.
-Reconstruct ADA ramps to meet City of Manteca Standards and Specification.
-Modify existing traffic signal.
(+) -A portion of the required right-of-way and/or improvements are already in place as noted on the plan. No additional right-of-way and/or improvements are required in this area. Contractor shall conform proposed improvements to existing improvements and protect existing curb, gutter, sidewalk, and landscaping throughout the course of construction and repair/replace if damaged.

LEGEND

CENTERLINE
EXISTING PROPERTY LINES (PER GIS MAP)
EXISTING RIGHT-OF-WAY (PER GIS MAP)
PROPOSED RIGHT-OF-WAY – 2 LANE SEE SHEET C2.01 FOR TYPICAL SECTION
PROPOSED RIGHT-OF-WAY – 4 LANE SEE SHEET C2.03 FOR TYPICAL SECTION
PROPOSED RIGHT-OF-WAY – 6 LANE SEE SHEET C2.06 FOR TYPICAL SECTION
PROPOSED CURB, GUTTER AND SIDEWALK
PROPOSED MEDIAN CURB
PROPOSED P.F.I.P. IMPROVEMENT LIMITS
PROPOSED R/W ACQUISITION AREA



A REVISED 4 LANE STREET SECTION
(TI–11, ASSUMED R VALUE=20, 11"AC/23"AB)
NTS

50 25 0 50
1" = 100'

CALL BEFORE YOU DIG
800-227-2600

PRELIMINARY NOT FOR CONSTRUCTION

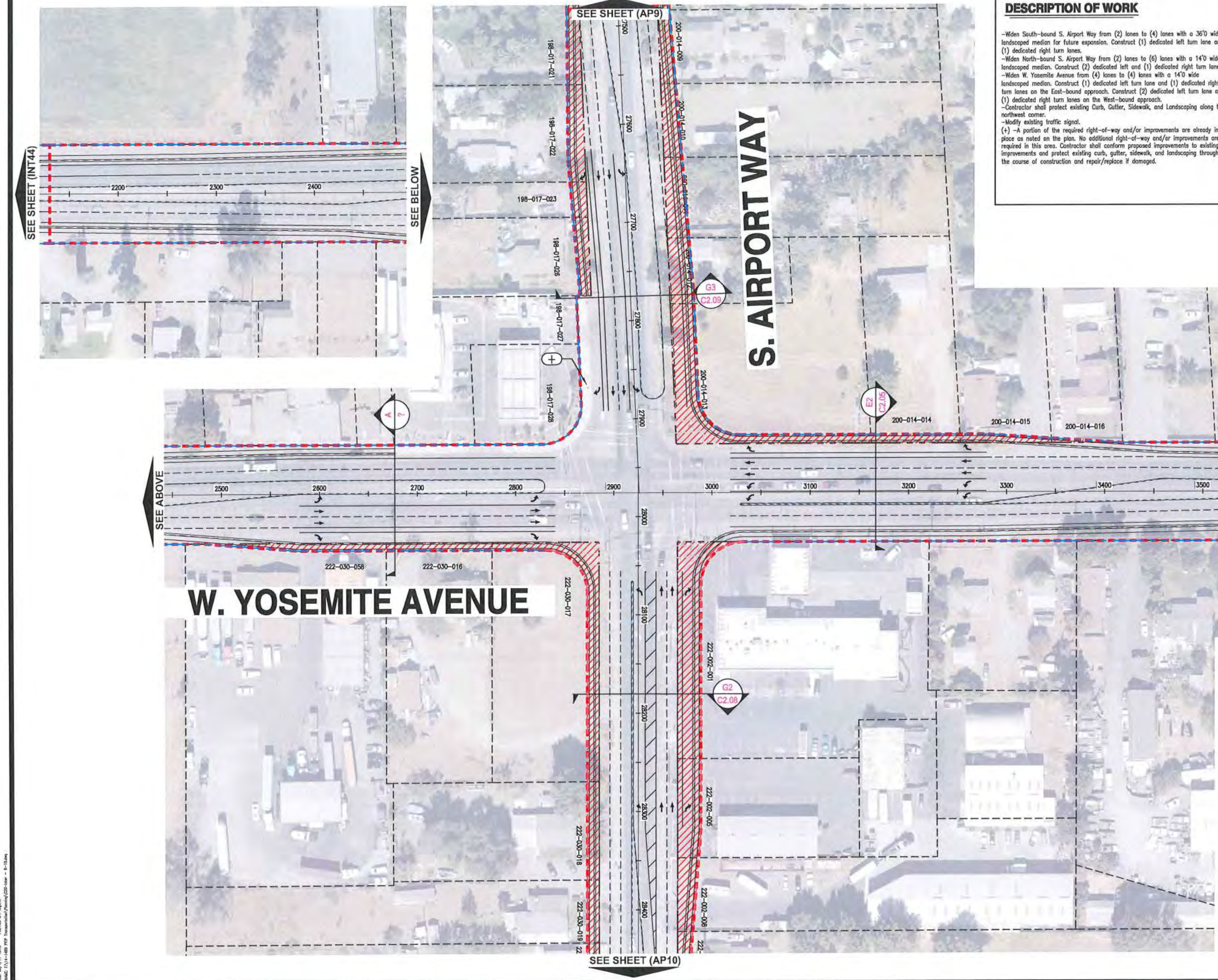
NO.	DESCRIPTIONS	DATE	APPROVED
REVISIONS			

S. AIRPORT WY & LOUISE AVE
PRELIMINARY OPINION OF PROBABLE COST
PFIP TRANSPORTATION
MANTECA, CALIFORNIA

NorthStar Engineering Group, Inc.
• CIVIL ENGINEERING • SURVEYING • PLANNING •
620 12th Street Modesto, CA 95354
(209) 524-3525 Phone (209) 524-3526 Fax

JOB #:	14-1489
DATE:	6/9/2017
SCALE:	AS NOTED
DRAWN:	KM
DESIGN:	KM
CHK'D:	TD

SHEET NUMBER
INT6



DESCRIPTION OF WORK

-Widen South-bound S. Airport Way from (2) lanes to (4) lanes with a 36'0 wide landscaped median for future expansion. Construct (1) dedicated left turn lane and (1) dedicated right turn lanes.
-Widen North-bound S. Airport Way from (2) lanes to (6) lanes with a 14'0 wide landscaped median. Construct (2) dedicated left and (1) dedicated right turn lanes.
-Widen W. Yosemite Avenue from (4) lanes to (4) lanes with a 14'0 wide landscaped median. Construct (1) dedicated left turn lane and (1) dedicated right turn lanes on the East-bound approach. Construct (2) dedicated left turn lane and (1) dedicated right turn lanes on the West-bound approach.
-Contractor shall protect existing Curb, Gutter, Sidewalk, and Landscaping along the northwest corner.
-Modify existing traffic signal.
(+) -A portion of the required right-of-way and/or improvements are already in place as noted on the plan. No additional right-of-way and/or improvements are required in this area. Contractor shall conform proposed improvements to existing improvements and protect existing curb, gutter, sidewalk, and landscaping throughout the course of construction and repair/replace if damaged.

LEGEND

CENTERLINE
EXISTING PROPERTY LINES (PER GIS MAP)
EXISTING RIGHT-OF-WAY (PER GIS MAP)
PROPOSED RIGHT-OF-WAY - 2 LANE SEE SHEET C2.01 FOR TYPICAL SECTION
PROPOSED RIGHT-OF-WAY - 4 LANE SEE SHEET C2.03 FOR TYPICAL SECTION
PROPOSED RIGHT-OF-WAY - 6 LANE SEE SHEET C2.06 FOR TYPICAL SECTION
PROPOSED CURB, GUTTER AND SIDEWALK
PROPOSED MEDIAN CURB
PROPOSED P.F.I.P. IMPROVEMENT LIMITS
PROPOSED R/W ACQUISITION AREA

CALL BEFORE YOU DIG 800-227-2600

PRELIMINARY NOT FOR CONSTRUCTION

NO.	DESCRIPTIONS	DATE	APPROVED
	REVISIONS		

S. AIRPORT WY & W. YOSEMITE AVE

PRELIMINARY OPINION OF PROBABLE COST
PFIP TRANSPORTATION
MANTECA, CALIFORNIA

NorthStar Engineering Group, Inc.
• CIVIL ENGINEERING • SURVEYING • PLANNING •
620 12th Street Modesto, CA 95354
(209) 524-3525 Phone (209) 524-3526 Fax

JOB #:	14-1489
DATE:	6/9/2017
SCALE:	AS NOTED
DRAWN:	KM
DESIGN:	KM
CHK'D:	TD

SHEET NUMBER
INT8

CUMULATIVE PLUS PROJECT CONDITIONS SYNCHRO RESULTS WITH MITIGATIONS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1942	1427	0	2484	363	0	0	0	259	0	1189
Future Volume (veh/h)	0	1942	1427	0	2484	363	0	0	0	259	0	1189
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1841	1841				1856	0	1856
Adj Flow Rate, veh/h	0	2207	0	0	2823	412				294	0	1351
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88				0.88	0.88	0.88
Percent Heavy Veh, %	0	2	2	0	4	4				3	0	3
Cap, veh/h	0	3534		0	2760	857				1335	0	1078
Arrive On Green	0.00	0.55	0.00	0.00	1.00	1.00				0.39	0.00	0.39
Sat Flow, veh/h	0	6696	1585	0	5191	1560				3428	0	2768
Grp Volume(v), veh/h	0	2207	0	0	2823	412				294	0	1351
Grp Sat Flow(s),veh/h/ln	0	1609	1585	0	1675	1560				1714	0	1384
Q Serve(g_s), s	0.0	35.3	0.0	0.0	82.4	0.0				8.6	0.0	58.4
Cycle Q Clear(g_c), s	0.0	35.3	0.0	0.0	82.4	0.0				8.6	0.0	58.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	3534		0	2760	857				1335	0	1078
V/C Ratio(X)	0.00	0.62		0.00	1.02	0.48				0.22	0.00	1.25
Avail Cap(c_a), veh/h	0	3534		0	2760	857				1335	0	1078
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.68	0.68				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	23.2	0.0	0.0	0.0	0.0				30.6	0.0	45.8
Incr Delay (d2), s/veh	0.0	0.8	0.0	0.0	20.3	0.3				0.0	0.0	121.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.5	0.0	0.0	5.2	0.1				3.6	0.0	38.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	24.0	0.0	0.0	20.3	0.3				30.6	0.0	167.7
LnGrp LOS	A	C		A	F	A				C	A	F
Approach Vol, veh/h		2207	A		3235						1645	
Approach Delay, s/veh		24.0			17.7						143.2	
Approach LOS		C			B						F	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		87.0		63.0		87.0						
Change Period (Y+Rc), s		4.6		4.6		4.6						
Max Green Setting (Gmax), s		82.4		58.4		82.4						
Max Q Clear Time (g_c+I1), s		37.3		60.4		84.4						
Green Ext Time (p_c), s		27.6		0.0		0.0						

Intersection Summary		
HCM 6th Ctrl Delay		48.8
HCM 6th LOS		D

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1857	344	0	2109	576	738	0	320	0	0	0
Future Volume (veh/h)	0	1857	344	0	2109	576	738	0	320	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1856	1856	0	1856	1856	1796	0	1796			
Adj Flow Rate, veh/h	0	2063	0	0	2343	0	820	0	356			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	0	3	3	0	3	3	7	0	7			
Cap, veh/h	0	3494		0	3494		1201	0	379			
Arrive On Green	0.00	1.00	0.00	0.00	0.69	0.00	0.25	0.00	0.25			
Sat Flow, veh/h	0	5233	2768	0	5233	1572	4824	0	1522			
Grp Volume(v), veh/h	0	2063	0	0	2343	0	820	0	356			
Grp Sat Flow(s),veh/h/ln	0	1689	1384	0	1689	1572	1608	0	1522			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	40.0	0.0	23.1	0.0	34.4			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	40.0	0.0	23.1	0.0	34.4			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3494		0	3494		1201	0	379			
V/C Ratio(X)	0.00	0.59		0.00	0.67		0.68	0.00	0.94			
Avail Cap(c_a), veh/h	0	3494		0	3494		1685	0	532			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.79	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	13.4	0.0	51.0	0.0	55.2			
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.0	1.0	0.0	0.3	0.0	17.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.0	0.0	14.9	0.0	9.4	0.0	15.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.6	0.0	0.0	14.5	0.0	51.2	0.0	72.8			
LnGrp LOS	A	A		A	B		D	A	E			
Approach Vol, veh/h		2063	A		2343	A		1176				
Approach Delay, s/veh		0.6			14.5			57.8				
Approach LOS		A			B			E				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		108.1				108.1		41.9				
Change Period (Y+Rc), s		4.6				4.6		4.6				
Max Green Setting (Gmax), s		88.4				88.4		52.4				
Max Q Clear Time (g_c+I1), s		2.0				42.0		36.4				
Green Ext Time (p_c), s		32.5				30.6		0.9				
Intersection Summary												
HCM 6th Ctrl Delay			18.5									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	649	383	212	615	128	517	551	146	136	731	127
Future Volume (veh/h)	148	649	383	212	615	128	517	551	146	136	731	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1826	1826	1826	1811	1811	1811
Adj Flow Rate, veh/h	153	669	395	219	634	132	533	568	151	140	754	131
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	2	2	2	5	5	5	6	6	6
Cap, veh/h	246	777	629	277	813	476	607	1330	717	240	948	533
Arrive On Green	0.07	0.22	0.22	0.08	0.23	0.23	0.18	0.38	0.38	0.07	0.28	0.28
Sat Flow, veh/h	3428	3526	1572	3456	3554	1585	3374	3469	1547	3346	3441	1535
Grp Volume(v), veh/h	153	669	395	219	634	132	533	568	151	140	754	131
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1728	1777	1585	1687	1735	1547	1673	1721	1535
Q Serve(g_s), s	3.6	15.3	16.8	5.2	14.0	5.3	12.9	10.1	4.8	3.4	17.0	5.1
Cycle Q Clear(g_c), s	3.6	15.3	16.8	5.2	14.0	5.3	12.9	10.1	4.8	3.4	17.0	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	246	777	629	277	813	476	607	1330	717	240	948	533
V/C Ratio(X)	0.62	0.86	0.63	0.79	0.78	0.28	0.88	0.43	0.21	0.58	0.80	0.25
Avail Cap(c_a), veh/h	246	777	629	277	813	476	626	1499	793	337	1195	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	31.3	20.1	37.7	30.2	22.3	33.4	19.0	13.3	37.5	28.1	19.5
Incr Delay (d2), s/veh	4.7	9.7	2.0	14.2	4.9	0.3	13.3	0.2	0.1	2.2	3.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	7.3	6.2	2.7	6.3	2.0	6.2	3.9	1.6	1.4	7.1	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.4	41.1	22.1	52.0	35.1	22.6	46.6	19.2	13.5	39.8	31.1	19.7
LnGrp LOS	D	D	C	D	D	C	D	B	B	D	C	B
Approach Vol, veh/h		1217			985			1252			1025	
Approach Delay, s/veh		35.1			37.2			30.2			30.8	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	24.1	19.5	28.7	10.5	24.8	10.5	37.7
Change Period (Y+Rc), s	4.5	5.7	4.5	5.7	4.5	5.7	4.5	5.7
Max Green Setting (Gmax), s	6.7	18.4	15.5	29.0	6.0	19.1	8.4	36.1
Max Q Clear Time (g_c+I1), s	7.2	18.8	14.9	19.0	5.6	16.0	5.4	12.1
Green Ext Time (p_c), s	0.0	0.0	0.2	4.0	0.0	1.4	0.1	4.6

Intersection Summary		
HCM 6th Ctrl Delay		33.2
HCM 6th LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	247	312	104	440	796	297	309	466	418	325	493	518
Future Volume (veh/h)	247	312	104	440	796	297	309	466	418	325	493	518
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1856	1856	1856	1841	1841	1841	1826	1826	1826
Adj Flow Rate, veh/h	260	328	109	463	838	313	325	491	440	342	519	545
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	5	5	5
Cap, veh/h	339	988	577	471	1130	641	298	918	624	295	911	560
Arrive On Green	0.10	0.28	0.28	0.14	0.32	0.32	0.09	0.26	0.26	0.09	0.26	0.26
Sat Flow, veh/h	3401	3497	1560	3428	3526	1572	3401	3497	1560	3374	3469	1547
Grp Volume(v), veh/h	260	328	109	463	838	313	325	491	440	342	519	545
Grp Sat Flow(s),veh/h/ln	1700	1749	1560	1714	1763	1572	1700	1749	1560	1687	1735	1547
Q Serve(g_s), s	6.0	5.9	3.8	10.8	17.0	11.8	7.0	9.6	18.9	7.0	10.4	21.0
Cycle Q Clear(g_c), s	6.0	5.9	3.8	10.8	17.0	11.8	7.0	9.6	18.9	7.0	10.4	21.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	339	988	577	471	1130	641	298	918	624	295	911	560
V/C Ratio(X)	0.77	0.33	0.19	0.98	0.74	0.49	1.09	0.53	0.71	1.16	0.57	0.97
Avail Cap(c_a), veh/h	383	988	577	471	1130	641	298	918	624	295	911	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	22.7	17.1	34.4	24.2	17.5	36.5	25.3	20.1	36.5	25.6	25.1
Incr Delay (d2), s/veh	6.8	0.9	0.7	36.6	4.4	2.6	79.1	1.1	4.6	102.4	1.4	31.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	2.5	1.4	6.7	7.4	4.5	6.1	4.0	7.2	7.0	4.3	14.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.9	23.6	17.8	71.0	28.6	20.2	115.6	26.4	24.6	138.9	27.0	56.5
LnGrp LOS	D	C	B	E	C	C	F	C	C	F	C	E
Approach Vol, veh/h		697			1614			1256			1406	
Approach Delay, s/veh		29.5			39.1			48.9			65.6	
Approach LOS		C			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	28.0	11.0	26.0	12.0	31.0	11.0	26.0
Change Period (Y+Rc), s	4.0	5.4	4.0	5.0	4.0	5.4	4.0	5.0
Max Green Setting (Gmax), s	11.0	22.6	7.0	21.0	9.0	24.6	7.0	21.0
Max Q Clear Time (g_c+I1), s	12.8	7.9	9.0	23.0	8.0	19.0	9.0	20.9
Green Ext Time (p_c), s	0.0	3.8	0.0	0.0	0.0	4.3	0.0	0.1

Intersection Summary		
HCM 6th Ctrl Delay		47.7
HCM 6th LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2965	1843	0	2991	276	0	0	0	372	0	766
Future Volume (veh/h)	0	2965	1843	0	2991	276	0	0	0	372	0	766
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1841	1841				1856	0	1856
Adj Flow Rate, veh/h	0	3369	0	0	3399	314				423	0	870
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88				0.88	0.88	0.88
Percent Heavy Veh, %	0	2	2	0	4	4				3	0	3
Cap, veh/h	0	4564		0	3565	1107				786	0	635
Arrive On Green	0.00	0.71	0.00	0.00	1.00	1.00				0.23	0.00	0.23
Sat Flow, veh/h	0	6696	1585	0	5191	1560				3428	0	2768
Grp Volume(v), veh/h	0	3369	0	0	3399	314				423	0	870
Grp Sat Flow(s),veh/h/ln	0	1609	1585	0	1675	1560				1714	0	1384
Q Serve(g_s), s	0.0	47.9	0.0	0.0	0.0	0.0				16.3	0.0	34.4
Cycle Q Clear(g_c), s	0.0	47.9	0.0	0.0	0.0	0.0				16.3	0.0	34.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	4564		0	3565	1107				786	0	635
V/C Ratio(X)	0.00	0.74		0.00	0.95	0.28				0.54	0.00	1.37
Avail Cap(c_a), veh/h	0	4564		0	3565	1107				786	0	635
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.61	0.61				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.3	0.0	0.0	0.0	0.0				50.8	0.0	57.8
Incr Delay (d2), s/veh	0.0	1.1	0.0	0.0	4.8	0.1				0.4	0.0	176.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	16.6	0.0	0.0	1.6	0.0				7.1	0.0	27.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	14.4	0.0	0.0	4.8	0.1				51.2	0.0	234.5
LnGrp LOS	A	B		A	A	A				D	A	F
Approach Vol, veh/h		3369	A		3713						1293	
Approach Delay, s/veh		14.4			4.4						174.6	
Approach LOS		B			A						F	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		111.0		39.0		111.0						
Change Period (Y+Rc), s		4.6		4.6		4.6						
Max Green Setting (Gmax), s		106.4		34.4		106.4						
Max Q Clear Time (g_c+I1), s		49.9		36.4		2.0						
Green Ext Time (p_c), s		52.2		0.0		94.0						

Intersection Summary			
HCM 6th Ctrl Delay			34.7
HCM 6th LOS			C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2894	443	0	1966	506	1301	0	426	0	0	0
Future Volume (veh/h)	0	2894	443	0	1966	506	1301	0	426	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1856	1856	0	1856	1856	1796	0	1796			
Adj Flow Rate, veh/h	0	3216	0	0	2184	0	1446	0	473			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	0	3	3	0	3	3	7	0	7			
Cap, veh/h	0	3222		0	4060		1460	0	461			
Arrive On Green	0.00	1.00	0.00	0.00	0.64	0.00	0.30	0.00	0.30			
Sat Flow, veh/h	0	5233	2768	0	6643	1572	4824	0	1522			
Grp Volume(v), veh/h	0	3216	0	0	2184	0	1446	0	473			
Grp Sat Flow(s),veh/h/ln	0	1689	1384	0	1596	1572	1608	0	1522			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	28.4	0.0	44.8	0.0	45.4			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	28.4	0.0	44.8	0.0	45.4			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	3222		0	4060		1460	0	461			
V/C Ratio(X)	0.00	1.00		0.00	0.54		0.99	0.00	1.03			
Avail Cap(c_a), veh/h	0	3222		0	4060		1460	0	461			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.62	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	15.1	0.0	52.1	0.0	52.3			
Incr Delay (d2), s/veh	0.0	12.1	0.0	0.0	0.5	0.0	21.2	0.0	48.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	3.6	0.0	0.0	10.3	0.0	20.9	0.0	23.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.1	0.0	0.0	15.6	0.0	73.2	0.0	101.2			
LnGrp LOS	A	B		A	B		E	A	F			
Approach Vol, veh/h		3216	A		2184	A		1919				
Approach Delay, s/veh		12.1			15.6			80.1				
Approach LOS		B			B			F				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		100.0				100.0		50.0				
Change Period (Y+Rc), s		4.6				4.6		4.6				
Max Green Setting (Gmax), s		95.4				95.4		45.4				
Max Q Clear Time (g_c+I1), s		2.0				30.4		47.4				
Green Ext Time (p_c), s		78.5				33.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			31.0									
HCM 6th LOS			C									

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	406	1143	475	165	821	116	566	897	168	113	764	63
Future Volume (veh/h)	406	1143	475	165	821	116	566	897	168	113	764	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1826	1826	1826	1811	1811	1811
Adj Flow Rate, veh/h	419	1178	490	170	846	120	584	925	173	116	788	65
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	2	2	2	5	5	5	6	6	6
Cap, veh/h	439	1169	789	194	923	499	575	1281	658	185	875	587
Arrive On Green	0.13	0.33	0.33	0.06	0.26	0.26	0.17	0.37	0.37	0.06	0.25	0.25
Sat Flow, veh/h	3428	3526	1572	3456	3554	1585	3374	3469	1547	3346	3441	1535
Grp Volume(v), veh/h	419	1178	490	170	846	120	584	925	173	116	788	65
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1728	1777	1585	1687	1735	1547	1673	1721	1535
Q Serve(g_s), s	13.2	36.0	24.5	5.3	25.1	6.1	18.5	24.9	7.9	3.7	24.1	3.0
Cycle Q Clear(g_c), s	13.2	36.0	24.5	5.3	25.1	6.1	18.5	24.9	7.9	3.7	24.1	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	439	1169	789	194	923	499	575	1281	658	185	875	587
V/C Ratio(X)	0.95	1.01	0.62	0.88	0.92	0.24	1.02	0.72	0.26	0.63	0.90	0.11
Avail Cap(c_a), veh/h	439	1169	789	194	923	499	575	1316	674	194	919	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.0	36.3	19.6	50.9	39.1	27.6	45.1	29.5	20.2	50.2	39.2	21.6
Incr Delay (d2), s/veh	31.6	28.3	1.5	33.1	13.7	0.2	41.7	1.9	0.2	5.8	11.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	19.7	9.0	3.2	12.6	0.0	11.0	10.5	2.8	1.7	11.4	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.6	64.6	21.1	84.0	52.7	27.8	86.7	31.4	20.4	56.1	50.7	21.7
LnGrp LOS	E	F	C	F	D	C	F	C	C	E	D	C
Approach Vol, veh/h		2087			1136			1682			969	
Approach Delay, s/veh		57.2			54.8			49.5			49.4	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	41.7	23.0	33.3	18.4	33.9	10.5	45.8
Change Period (Y+Rc), s	4.5	5.7	4.5	5.7	4.5	5.7	4.5	5.7
Max Green Setting (Gmax), s	6.1	36.0	18.5	29.0	13.9	28.2	6.3	41.2
Max Q Clear Time (g_c+I1), s	7.3	38.0	20.5	26.1	15.2	27.1	5.7	26.9
Green Ext Time (p_c), s	0.0	0.0	0.0	1.5	0.0	0.7	0.0	6.2

Intersection Summary	
HCM 6th Ctrl Delay	53.2
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	676	516	241	447	298	607	257	601	314	229	684	267
Future Volume (veh/h)	676	516	241	447	298	607	257	601	314	229	684	267
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1856	1856	1856	1841	1841	1841	1826	1826	1826
Adj Flow Rate, veh/h	712	543	254	471	314	639	271	633	331	241	720	281
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	3	3	3	4	4	4	5	5	5
Cap, veh/h	680	1087	623	539	944	566	302	824	613	311	828	679
Arrive On Green	0.20	0.31	0.31	0.16	0.27	0.27	0.09	0.24	0.24	0.09	0.24	0.24
Sat Flow, veh/h	3401	3497	1560	3428	3526	1572	3401	3497	1560	3374	3469	1547
Grp Volume(v), veh/h	712	543	254	471	314	639	271	633	331	241	720	281
Grp Sat Flow(s),veh/h/ln	1700	1749	1560	1714	1763	1572	1700	1749	1560	1687	1735	1547
Q Serve(g_s), s	18.0	11.4	10.5	12.1	6.4	24.1	7.1	15.2	14.7	6.3	17.9	11.2
Cycle Q Clear(g_c), s	18.0	11.4	10.5	12.1	6.4	24.1	7.1	15.2	14.7	6.3	17.9	11.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	680	1087	623	539	944	566	302	824	613	311	828	679
V/C Ratio(X)	1.05	0.50	0.41	0.87	0.33	1.13	0.90	0.77	0.54	0.78	0.87	0.41
Avail Cap(c_a), veh/h	680	1087	623	571	944	566	302	824	613	337	848	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	25.3	19.4	37.1	26.5	28.8	40.6	32.1	21.1	40.0	32.9	17.3
Incr Delay (d2), s/veh	47.4	1.6	2.0	12.8	0.9	78.6	26.6	5.2	1.7	8.8	10.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	4.9	4.0	5.9	2.8	24.0	4.0	6.9	5.5	2.9	8.5	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.4	27.0	21.3	49.9	27.4	107.4	67.2	37.3	22.8	48.7	43.2	18.2
LnGrp LOS	F	C	C	D	C	F	E	D	C	D	D	B
Approach Vol, veh/h		1509			1424			1235			1242	
Approach Delay, s/veh		52.6			70.8			39.9			38.6	
Approach LOS		D			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.1	33.4	12.0	26.5	22.0	29.5	12.3	26.2				
Change Period (Y+Rc), s	4.0	5.4	4.0	5.0	4.0	5.4	4.0	5.0				
Max Green Setting (Gmax), s	15.0	26.6	8.0	22.0	18.0	23.6	9.0	21.0				
Max Q Clear Time (g_c+I1), s	14.1	13.4	9.1	19.9	20.0	26.1	8.3	17.2				
Green Ext Time (p_c), s	0.1	6.4	0.0	1.6	0.0	0.0	0.0	2.7				
Intersection Summary												
HCM 6th Ctrl Delay			51.3									
HCM 6th LOS			D									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1941	1427	348	2480	0	0	0	0	259	3	1186
Future Volume (veh/h)	0	1941	1427	348	2480	0	0	0	0	259	3	1186
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1841	1841	0				1856	1856	1856
Adj Flow Rate, veh/h	0	2206	1622	395	2818	0				294	3	1348
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88				0.88	0.88	0.88
Percent Heavy Veh, %	0	2	2	4	4	0				3	3	3
Cap, veh/h	0	1303	607	187	950	0				121	1	556
Arrive On Green	0.00	0.38	0.38	0.11	0.52	0.00				0.42	0.42	0.42
Sat Flow, veh/h	0	3572	1585	1753	1841	0				287	3	1315
Grp Volume(v), veh/h	0	2206	1622	395	2818	0				1645	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1585	1753	1841	0				1605	0	0
Q Serve(g_s), s	0.0	57.4	57.4	16.0	77.4	0.0				63.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	57.4	57.4	16.0	77.4	0.0				63.4	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				0.18		0.82
Lane Grp Cap(c), veh/h	0	1303	607	187	950	0				678	0	0
V/C Ratio(X)	0.00	1.69	2.67	2.11	2.97	0.00				2.43	0.00	0.00
Avail Cap(c_a), veh/h	0	1303	607	187	950	0				678	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.09	0.09	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	46.3	46.3	67.0	36.3	0.0				43.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	315.4	758.1	502.2	885.4	0.0				646.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	81.1	150.2	33.3	267.5	0.0				146.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	361.7	804.4	569.2	921.7	0.0				689.3	0.0	0.0
LnGrp LOS	A	F	F	F	F	A				F	A	A
Approach Vol, veh/h		3828			3213						1645	
Approach Delay, s/veh		549.3			878.3						689.3	
Approach LOS		F			F						F	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	20.0	62.0		68.0		82.0
Change Period (Y+Rc), s	4.0	4.6		4.6		4.6
Max Green Setting (Gmax), s	16.0	57.4		63.4		77.4
Max Q Clear Time (g_c+I1), s	18.0	59.4		65.4		79.4
Green Ext Time (p_c), s	0.0	0.0		0.0		0.0

Intersection Summary		
HCM 6th Ctrl Delay		697.5
HCM 6th LOS		F