VOLUME 2

DRAFT ENVIRONMENTAL IMPACT REPORT

LAND USE ELEMENT/ZONING CODE AMENDMENTS AND MOBILITY ELEMENT UPDATE

TOWN OF MAMMOTH LAKES, CALIFORNIA

APPENDIX B THROUGH APPENDIX F

JUNE 2016

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TOWN OF MAMMOTH LAKES, CALIFORNIA

APPENDIX B THROUGH APPENDIX F

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JUNE 2016

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VOLUME 2

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Appendix B

Air Quality Worksheets

Mammoth Lake Zoning Code
Draft EIR
Appendix B, Air Quality Data Worksheets

B.1 Operational Model Inputs

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Appendix B.1
Operational Model Inputs

Mammoth Lakes Zoning Update

CalEEMod Inputs

PROJECT LAND USE

Land Use Designation/Proposed Maximum DU/AC and FAR	Total Land Area (acres) [1]	Vacant Land Area (acres) [1]	Existing Units [2]	Existing Commercial and Industrial (sq ft) [3]	Assumed Density and Intensity for Future Development [4]	New Future Units [2 5]	New Commercial and Industrial (sq ft) [3]	Total Units at Buildout [5]	Total Population at Buildout [6]	Total Commercial and Industrial (sq ft) at Buildout [3]
COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL PUBLIC										
Commercial 1 (C-1) - 0.75 - 2.0 FAR [14]	32	2	226	24,984	2.0 FAR	180	1,857	406	1,409	26,841
Commercial 2 (C-2) - 0.75 - 2.0 FAR [14]	90	8	559	1,021,994	2.0 FAR	659	339,520	1,218	4,226	1,361,514
	122	**11**	**785**	**1,046,978**	**2.0 FAR**	**839**	**341,377**	**1,624**	**5,635**	**1,388,355**

WATER DEMAND

CalEEMod Type	Units	AFY	Water Use (gpy) Total	Indoor	Outdoor
Retail	341,377	134	43,664,034	27,071,701	16,592,333

WASTE GENERATION

CalEEMod Type	Units *KSF*	Employee *per KSF*	Quantity *KSF/employees/*	Generation Factor[a]	Rate Units	Solid Waste Generated *tons/year*
Retail	341,377	0.00271	925	2.41	tons/employee/yr	2,230

Appendix B.2
Operational Mobile Emissions

- Mobile Source Emissions
- Road Dust Emissions

Town of Mammoth Lakes - Land Use Element / Zoning Code Amendments and Mobility Element Update
Mobile Source Emissions - AQ

		Emission Factors (tons/mi) [a]					
Year	**Period**	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2_5**
2015	Winter	1.01E-07	9.81E-08	7.31E-07	1.18E-09	1.47E-08	6.36E-09
2030	Winter	4.08E-08	2.31E-08	2.41E-07	8.78E-10	1.88E-08	7.79E-09

			Emissions (lbs/day)									
Scenario	**Year**	**Daily VMT [b]**	**ROG**	**NOx**	**CO**	**SOx**	**PM10 Exhuast**	**PM10 Road Dust**	**Total PM10**	**PM 2.5 Exhuast**	**PM 2.5 Road Dust**	**Total PM2_5**
Existing	2015	152,844	31	30	223	0.4	5	5881	5885	2	1444	1445
Existing with Mobility Element	2015	149,444	30	29	219	0.4	4	5750	5755	2	1411	1413
Future New FAR with Existing Network	2030	184,217	15	9	89	0.3	7	7088	7095	3	1740	1743
Future New FAR with Mobility Element	2030	178,638	15	8	86	0.3	7	6873	6880	3	1687	1690

Notes:

a. California Air Resources Board, EMFAC2014, Mono County.

b. LSC Transportation Consultants, Inc., Mammoth Mobility Element, Transportation Impact Analysis, (2016).
Daily VMT for Scenarios 3-6 are based on the adjusted values shown in Table 3.

Town of Mammoth Lakes - Land Use Element / Zoning Code Amendments and Mobility Element Update
Road Dust Emission Factors

Paved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,P} = (k\ (sL)^{0.91} \times (W)^{1.02})$

Where:

$EF_{Dust,P}$ = Paved Road Dust Emission Factor (having the same units as k)
k = particle size multiplier (g/VMT)
sL = road surface silt loading (g/m^2)
W = average fleet vehicle weight (tons) (CARB uses 2.4 tons as a fleet average vehicle weight factor)

	Emission Factor (grams per VMT)	
	PM10	PM2.5
k	0.9979	0.2449
sL	8.7	8.7
W	2.4	2.4
$EF_{Dust,P}$	1.75E+01	4.28E+00

Sources:

SCAQMD, CalEEMod, Version 2011.1.

CARB, *Entrained Dust from Paved Road Travel: Emission Estimation Methodology Background Document* , (1997).

USEPA, *AP-42* , Fifth Edition, Volume I, Chapter 13.2.1 - Paved Roads, (2011).

ESA-PCR Services Corporation, 2016.

Mammoth Lakes AQMP

	Daily	**Emissions (pounds/day)**	
Scenario	**VMT**	**PM10 - Road Dust**	**PM2.5- Road Dust**
Existing	152,844	5,881	1,444
Existing with Mobility Element	149,444	5,750	1,411
Future New FAR with Existing Network	184,217	7,088	1,740
Future New FAR with Mobility Element	178,638	6,873	1,687

Date: 5/17/2016 12:03 PM

Appendix B.3
Operational Emissions

- Operations : CalEEMod Output (Summer)
- Operations : CalEEMod Output (Winter)

Mammoth Lakes Ops Net New FAR

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	341.38	1000sqft	7.84	341,377.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	54
Climate Zone	1			**Operational Year**	2030
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Vehicle Trips - Mobile emissions calculated outside of CalEEMod

Water And Wastewater - See "Operational Inputs"

Solid Waste -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2014	2030
tblWater	IndoorWaterUseRate	25,286,877.38	27,071,701.00
tblWater	OutdoorWaterUseRate	15,498,408.72	16,592,333.00

2.0 Emissions Summary

	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	lb/day										lb/day					
Area	9.4762	3.1000e-004	0.0347	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		0.0747	0.0747	1.9000e-004		0.0788
Energy	0.0574	0.5220	0.4385	3.1300e-003		0.0397	0.0397		0.0397	0.0397		626.3622	626.3622	0.0120	0.0115	630.1741
Total	**9.5336**	**0.5223**	**0.4731**	**3.1300e-003**	**0.0000**	**0.0398**	**0.0398**	**0.0000**	**0.0398**	**0.0398**		**626.4369**	**626.4369**	**0.0122**	**0.0115**	**630.2529**

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

	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	lb/day										lb/day					
NaturalGas Mitigated	0.0574	0.5220	0.4385	3.1300e-003		0.0397	0.0397		0.0397	0.0397		626.3622	626.3622	0.0120	0.0115	630.1741
NaturalGas Unmitigated	0.0766	0.6960	0.5846	4.1800e-003		0.0529	0.0529		0.0529	0.0529		835.1495	835.1495	0.0160	0.0153	840.2321

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	lb/day										lb/day					
Strip Mall	5.32408	0.0574	0.5220	0.4385	3.1300e-003		0.0397	0.0397		0.0397	0.0397		626.3622	626.3622	0.0120	0.0115	630.1741
Total		**0.0574**	**0.5220**	**0.4385**	**3.1300e-003**		**0.0397**	**0.0397**		**0.0397**	**0.0397**		**626.3622**	**626.3622**	**0.0120**	**0.0115**	**630.1741**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	lb/day										lb/day					
Mitigated	9.4762	3.1000e-004	0.0347	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		0.0747	0.0747	1.9000e-004		0.0788
Unmitigated	9.4762	3.1000e-004	0.0347	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		0.0747	0.0747	1.9000e-004		0.0788

6.2 Area by SubCategory

Mitigated

SubCategory	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
	lb/day										lb/day					
Architectural Coating	2.1675					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.3055					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.1700e-003	3.1000e-004	0.0347	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		0.0747	0.0747	1.9000e-004		0.0788
Total	**9.4762**	**3.1000e-004**	**0.0347**	**0.0000**		**1.2000e-004**	**1.2000e-004**		**1.2000e-004**	**1.2000e-004**		**0.0747**	**0.0747**	**1.9000e-004**		**0.0788**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

Mammoth Lakes Ops Net New FAR

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	341.38	1000sqft	7.84	341,377.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	54
Climate Zone	1			**Operational Year**	2030
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Vehicle Trips - Mobile emissions calculated outside of CalEEMod

Water And Wastewater - See "Operational Inputs"

Solid Waste -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2014	2030
tblWater	IndoorWaterUseRate	25,286,877.38	27,071,701.00
tblWater	OutdoorWaterUseRate	15,498,408.72	16,592,333.00

2.0 Emissions Summary

	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	lb/day										lb/day					
Area	9.4762	3.1000e-004	0.0347	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		0.0747	0.0747	1.9000e-004		0.0788
Energy	0.0574	0.5220	0.4385	3.1300e-003		0.0397	0.0397		0.0397	0.0397		626.3622	626.3622	0.0120	0.0115	630.1741
Total	**9.5336**	**0.5223**	**0.4731**	**3.1300e-003**	**0.0000**	**0.0398**	**0.0398**	**0.0000**	**0.0398**	**0.0398**		**626.4369**	**626.4369**	**0.0122**	**0.0115**	**630.2529**

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

	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	lb/day										lb/day					
NaturalGas Mitigated	0.0574	0.5220	0.4385	3.1300e-003		0.0397	0.0397		0.0397	0.0397		626.3622	626.3622	0.0120	0.0115	630.1741
NaturalGas Unmitigated	0.0766	0.6960	0.5846	4.1800e-003		0.0529	0.0529		0.0529	0.0529		835.1495	835.1495	0.0160	0.0153	840.2321

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	lb/day										lb/day					
Strip Mall	5.32408	0.0574	0.5220	0.4385	3.1300e-003		0.0397	0.0397		0.0397	0.0397		626.3622	626.3622	0.0120	0.0115	630.1741
Total		**0.0574**	**0.5220**	**0.4385**	**3.1300e-003**		**0.0397**	**0.0397**		**0.0397**	**0.0397**		**626.3622**	**626.3622**	**0.0120**	**0.0115**	**630.1741**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	lb/day										lb/day					
Mitigated	9.4762	3.1000e-004	0.0347	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		0.0747	0.0747	1.9000e-004		0.0788
Unmitigated	9.4762	3.1000e-004	0.0347	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		0.0747	0.0747	1.9000e-004		0.0788

6.2 Area by SubCategory

Mitigated

SubCategory	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
	lb/day										lb/day					
Architectural Coating	2.1675					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.3055					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.1700e-003	3.1000e-004	0.0347	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		0.0747	0.0747	1.9000e-004		0.0788
Total	**9.4762**	**3.1000e-004**	**0.0347**	**0.0000**		**1.2000e-004**	**1.2000e-004**		**1.2000e-004**	**1.2000e-004**		**0.0747**	**0.0747**	**1.9000e-004**		**0.0788**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

Appendix C

Greenhouse Gas Emissions Worksheets

Mammoth Lake Zoning Code
Draft EIR
Appendix C, Greenhouse Gas Emissions Data Worksheets

C.1 Mobile Source Emissions

C.2 CalEEMod Output - Operations (Annual)

Appendix C.1
Mobile Source Emissions

Town of Mammoth Lakes - Land Use Element / Zoning Code Amendments and Mobility Element Update
Mobile Source Emissions - GHG

Emission Factors (tons/mi) [a]		
Year	**Period**	**CO2**
2015	Annual	1.17E-04
2030	Annual	8.74E-05

Scenario	**Annual VMT**	**CO2 (MT/yr)**
Existing	41,283,000	4,368
Existing with Mobility Element	40,364,700	4,271
Future New FAR with Existing Network	49,757,012	3,944
Future New FAR with Mobility Element	48,250,124	3,825

Notes:

a. California Air Resources Board, EMFAC2014, Mono County.

b. LSC Transportation Consultants, Inc., Mammoth Mobility Element, Transportation Impact Analysis, (2016).
Daily VMT for Scenarios 3-6 are based on the adjusted values shown in Table 3.

Appendix C.2
CalEEMod Output - Operations (Annual)

Mammoth Lakes Ops Net New FAR

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	341.38	1000sqft	7.84	341,377.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	54
Climate Zone	1			**Operational Year**	2030
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Vehicle Trips - Mobile emissions calculated outside of CalEEMod

Water And Wastewater - See "Operational Inputs"

Solid Waste -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2014	2030
tblWater	IndoorWaterUseRate	25,286,877.38	27,071,701.00
tblWater	OutdoorWaterUseRate	15,498,408.72	16,592,333.00

2.0 Emissions Summary

	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	1.7291	3.0000e-005	3.1200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.1000e-003	6.1000e-003	2.0000e-005	0.0000	6.4300e-003
Energy	0.0105	0.0953	0.0800	5.7000e-004		7.2400e-003	7.2400e-003		7.2400e-003	7.2400e-003	0.0000	1,452.8112	1,452.8112	0.0640	0.0147	1,458.7220
Waste						0.0000	0.0000		0.0000	0.0000	72.7621	0.0000	72.7621	4.3001	0.0000	163.0646
Water						0.0000	0.0000		0.0000	0.0000	8.5886	58.5378	67.1264	0.8847	0.0214	92.3235
Total	**1.7396**	**0.0953**	**0.0831**	**5.7000e-004**	**0.0000**	**7.2500e-003**	**7.2500e-003**	**0.0000**	**7.2500e-003**	**7.2500e-003**	**81.3507**	**1,511.3550**	**1,592.7057**	**5.2488**	**0.0361**	**1,714.1166**

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

	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	1,349.1099	1,349.1099	0.0620	0.0128	1,354.3896
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,498.5768	1,498.5768	0.0689	0.0143	1,504.4415
NaturalGas Mitigated	0.0105	0.0953	0.0800	5.7000e-004		7.2400e-003	7.2400e-003		7.2400e-003	7.2400e-003	0.0000	103.7013	103.7013	1.9900e-003	1.9000e-003	104.3324
NaturalGas Unmitigated	0.0140	0.1270	0.1067	7.6000e-004		9.6500e-003	9.6500e-003		9.6500e-003	9.6500e-003	0.0000	138.2684	138.2684	2.6500e-003	2.5300e-003	139.1099

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					
Strip Mall	1.94329e+006	0.0105	0.0953	0.0800	5.7000e-004		7.2400e-003	7.2400e-003		7.2400e-003	7.2400e-003	0.0000	103.7013	103.7013	1.9900e-003	1.9000e-003	104.3324
Total		**0.0105**	**0.0953**	**0.0800**	**5.7000e-004**		**7.2400e-003**	**7.2400e-003**		**7.2400e-003**	**7.2400e-003**	**0.0000**	**103.7013**	**103.7013**	**1.9900e-003**	**1.9000e-003**	**104.3324**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Strip Mall	4.71442e+006	1,349.1099	0.0620	0.0128	1,354.3896
Total		**1,349.1099**	**0.0620**	**0.0128**	**1,354.3896**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	1.7291	3.0000e-005	3.1200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.1000e-003	6.1000e-003	2.0000e-005	0.0000	6.4300e-003
Unmitigated	1.7291	3.0000e-005	3.1200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.1000e-003	6.1000e-003	2.0000e-005	0.0000	6.4300e-003

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	0.3956					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.3333					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.9000e-004	3.0000e-005	3.1200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.1000e-003	6.1000e-003	2.0000e-005	0.0000	6.4300e-003
Total	**1.7291**	**3.0000e-005**	**3.1200e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**6.1000e-003**	**6.1000e-003**	**2.0000e-005**	**0.0000**	**6.4300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	67.1264	0.8847	0.0214	92.3235
Unmitigated	67.1264	0.8848	0.0214	92.3372

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Strip Mall	27.0717 / 16.5923	67.1264	0.8847	0.0214	92.3235
Total		**67.1264**	**0.8847**	**0.0214**	**92.3235**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	72.7621	4.3001	0.0000	163.0646
Unmitigated	72.7621	4.3001	0.0000	163.0646

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Strip Mall	358.45	72.7621	4.3001	0.0000	163.0646
Total		**72.7621**	**4.3001**	**0.0000**	**163.0646**

9.0 Operational Offroad

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

10.0 Vegetation

Appendix D

Noise Worksheets

Mammoth Lake Zoning Code
Draft EIR
Appendix D, Noise Data Worksheets

D.1 Ambient Noise Data

D.2 Traffic Noise Calculation

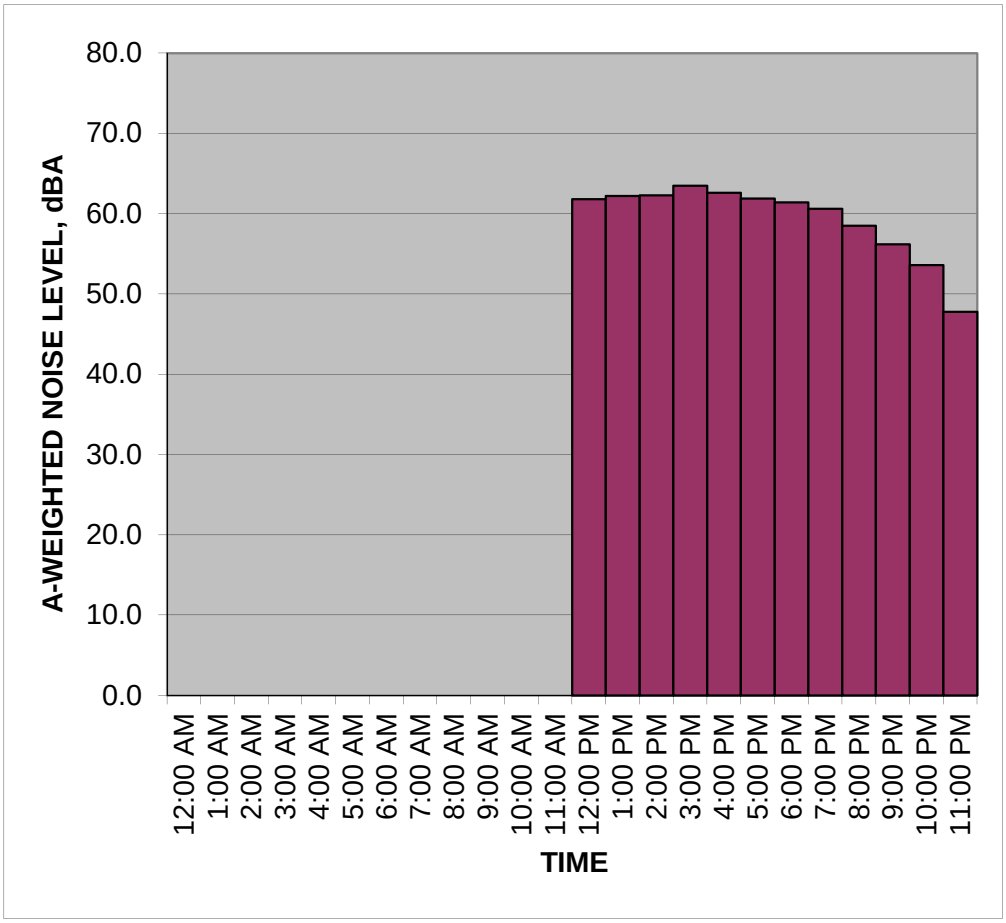
Appendix D.1
Ambient Noise Data

Measured Ambient Noise Levels

Project: Town of Mammoth Lakes
Land Use Element and Zoning Code Amendments/Mobility Element Update
Location: L1
Sources: Ambient

Date: August 20, 2015

TIME	HNL, dB(A)
12:00 AM	0.0
1:00 AM	0.0
2:00 AM	0.0
3:00 AM	0.0
4:00 AM	0.0
5:00 AM	0.0
6:00 AM	0.0
7:00 AM	0.0
8:00 AM	0.0
9:00 AM	0.0
10:00 AM	0.0
11:00 AM	0.0
12:00 PM	61.8
1:00 PM	62.2
2:00 PM	62.3
3:00 PM	63.5
4:00 PM	62.6
5:00 PM	61.9
6:00 PM	61.4
7:00 PM	60.6
8:00 PM	58.5
9:00 PM	56.2
10:00 PM	53.6
11:00 PM	47.8
CNEL, dB(A):	**62.6**



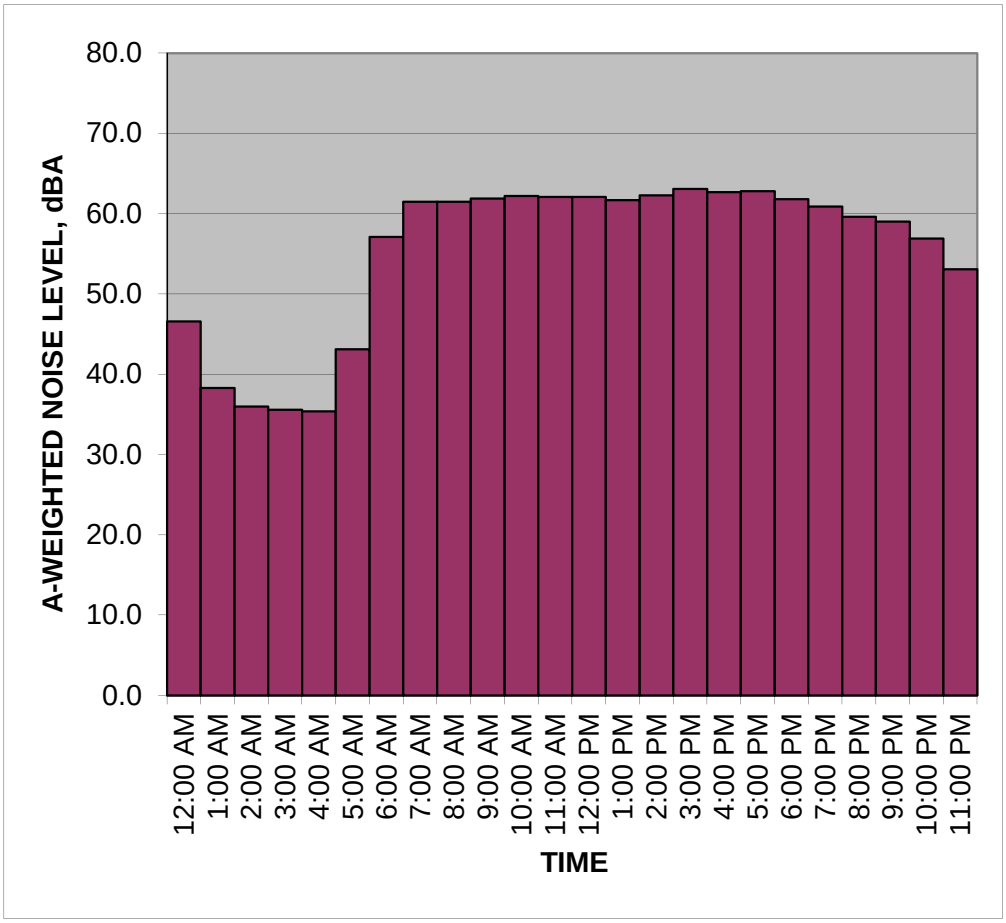
NOTES:

Measured Ambient Noise Levels

Project: Town of Mammoth Lakes
Land Use Element and Zoning Code Amendments/Mobility Element Update
Location: L1
Sources: Ambient

Date: August 21, 2015

TIME	HNL, dB(A)
12:00 AM	46.6
1:00 AM	38.3
2:00 AM	36.0
3:00 AM	35.6
4:00 AM	35.4
5:00 AM	43.1
6:00 AM	57.1
7:00 AM	61.5
8:00 AM	61.5
9:00 AM	61.9
10:00 AM	62.2
11:00 AM	62.1
12:00 PM	62.1
1:00 PM	61.7
2:00 PM	62.3
3:00 PM	63.1
4:00 PM	62.7
5:00 PM	62.8
6:00 PM	61.8
7:00 PM	60.9
8:00 PM	59.6
9:00 PM	59.0
10:00 PM	56.9
11:00 PM	53.1
CNEL, dB(A):	**62.4**



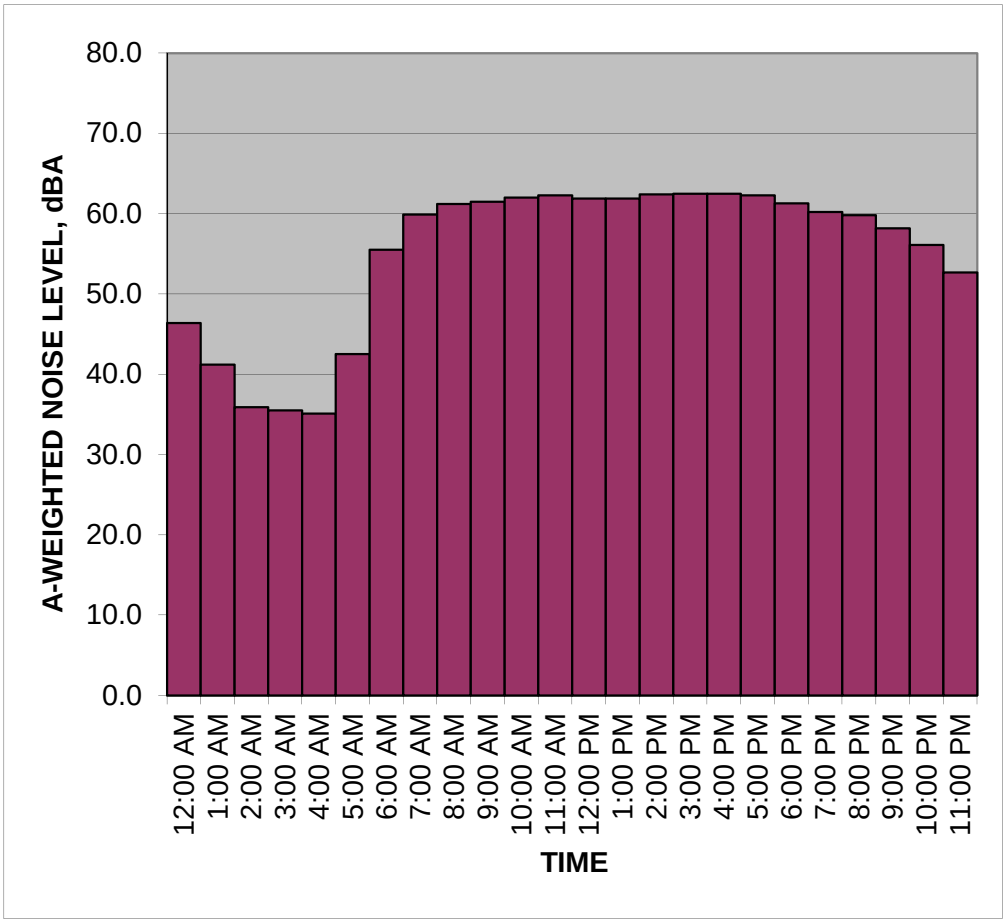
NOTES:

Measured Ambient Noise Levels

Project: Town of Mammoth Lakes
Land Use Element and Zoning Code Amendments/Mobility Element Update
Location: L1
Sources: Ambient

Date: August 22, 2015

TIME	HNL, dB(A)
12:00 AM	46.4
1:00 AM	41.2
2:00 AM	35.9
3:00 AM	35.5
4:00 AM	35.1
5:00 AM	42.5
6:00 AM	55.5
7:00 AM	59.9
8:00 AM	61.2
9:00 AM	61.5
10:00 AM	62.0
11:00 AM	62.3
12:00 PM	61.9
1:00 PM	61.9
2:00 PM	62.4
3:00 PM	62.5
4:00 PM	62.5
5:00 PM	62.3
6:00 PM	61.3
7:00 PM	60.2
8:00 PM	59.8
9:00 PM	58.2
10:00 PM	56.1
11:00 PM	52.7
CNEL, dB(A):	**61.9**



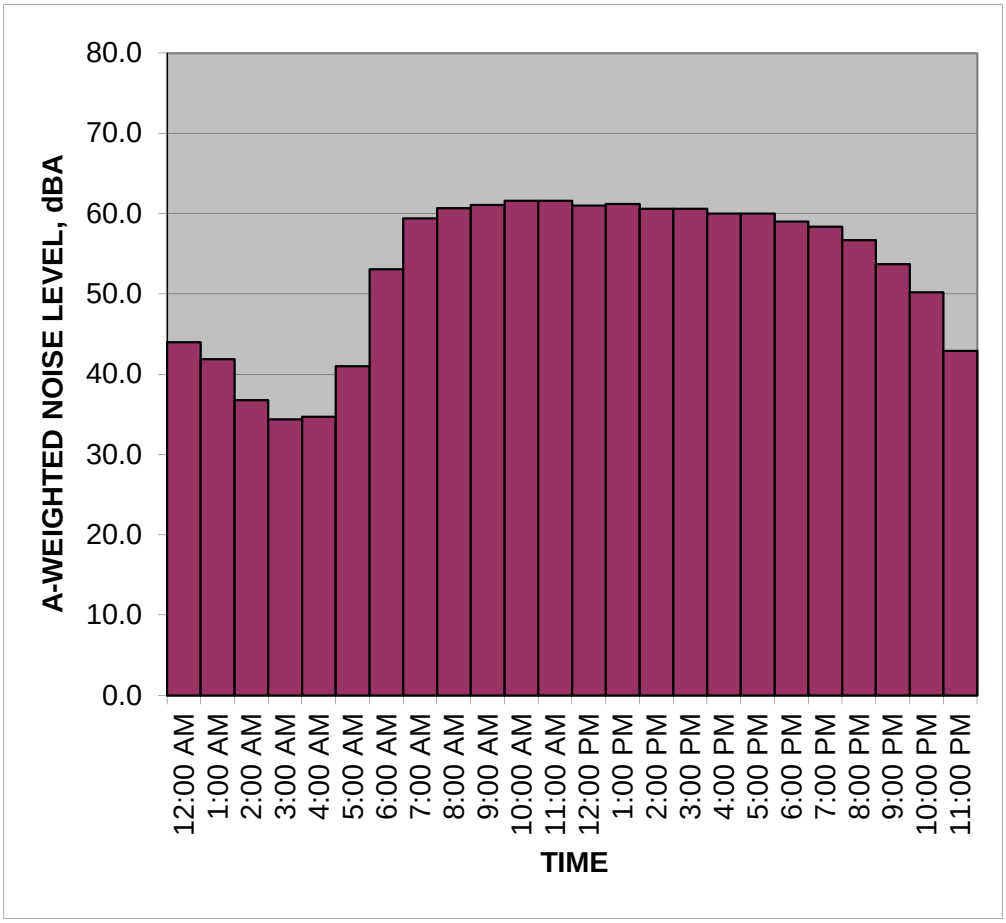
NOTES:

Measured Ambient Noise Levels

Project: Town of Mammoth Lakes
Land Use Element and Zoning Code Amendments/Mobility Element Update
Location: L1
Sources: Ambient

Date: August 23, 2015

TIME	HNL, dB(A)
12:00 AM	44.0
1:00 AM	41.9
2:00 AM	36.8
3:00 AM	34.4
4:00 AM	34.7
5:00 AM	41.0
6:00 AM	53.1
7:00 AM	59.4
8:00 AM	60.7
9:00 AM	61.1
10:00 AM	61.6
11:00 AM	61.6
12:00 PM	61.0
1:00 PM	61.2
2:00 PM	60.6
3:00 PM	60.6
4:00 PM	60.0
5:00 PM	60.0
6:00 PM	59.0
7:00 PM	58.4
8:00 PM	56.7
9:00 PM	53.7
10:00 PM	50.2
11:00 PM	42.9
CNEL, dB(A):	**59.7**



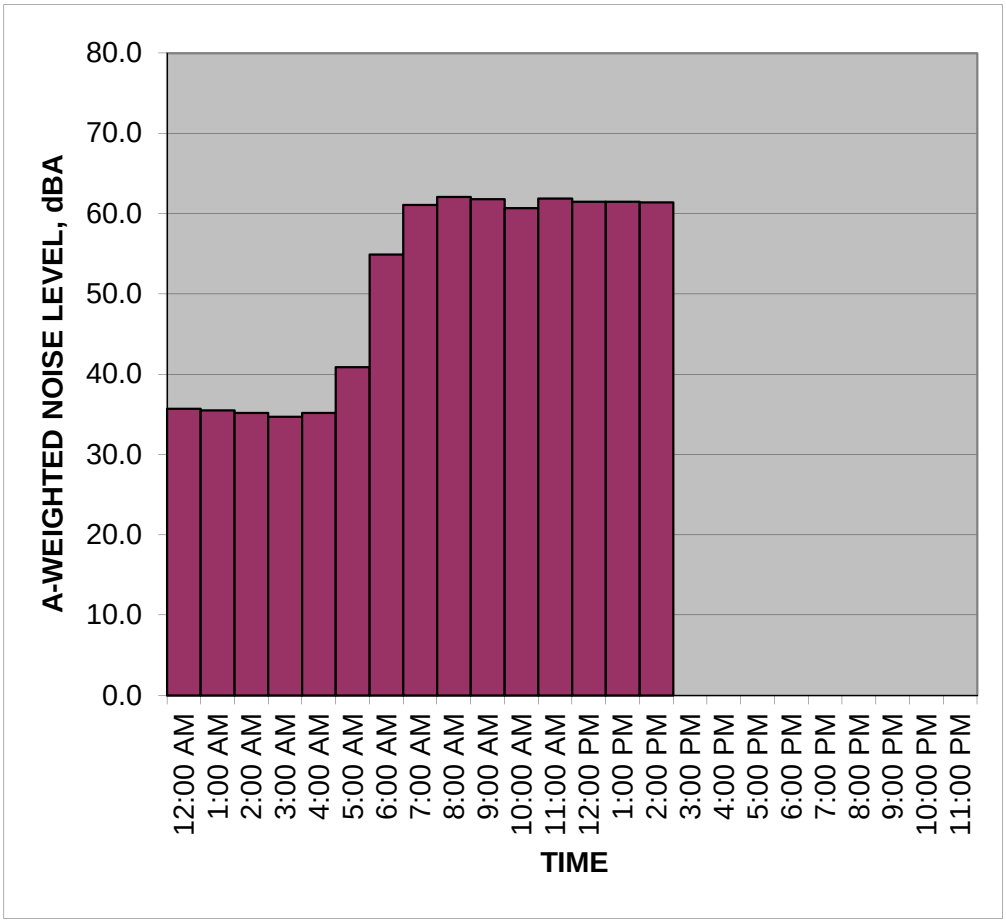
NOTES:

Measured Ambient Noise Levels

Project: Town of Mammoth Lakes
Land Use Element and Zoning Code Amendments/Mobility Element Update
Location: L1
Sources: Ambient

Date: August 24, 2015

TIME	HNL, dB(A)
12:00 AM	35.7
1:00 AM	35.5
2:00 AM	35.2
3:00 AM	34.7
4:00 AM	35.2
5:00 AM	40.9
6:00 AM	54.9
7:00 AM	61.1
8:00 AM	62.1
9:00 AM	61.8
10:00 AM	60.7
11:00 AM	61.9
12:00 PM	61.5
1:00 PM	61.5
2:00 PM	61.4
3:00 PM	0.0
4:00 PM	0.0
5:00 PM	0.0
6:00 PM	0.0
7:00 PM	0.0
8:00 PM	0.0
9:00 PM	0.0
10:00 PM	0.0
11:00 PM	0.0
CNEL, dB(A):	**59.9**



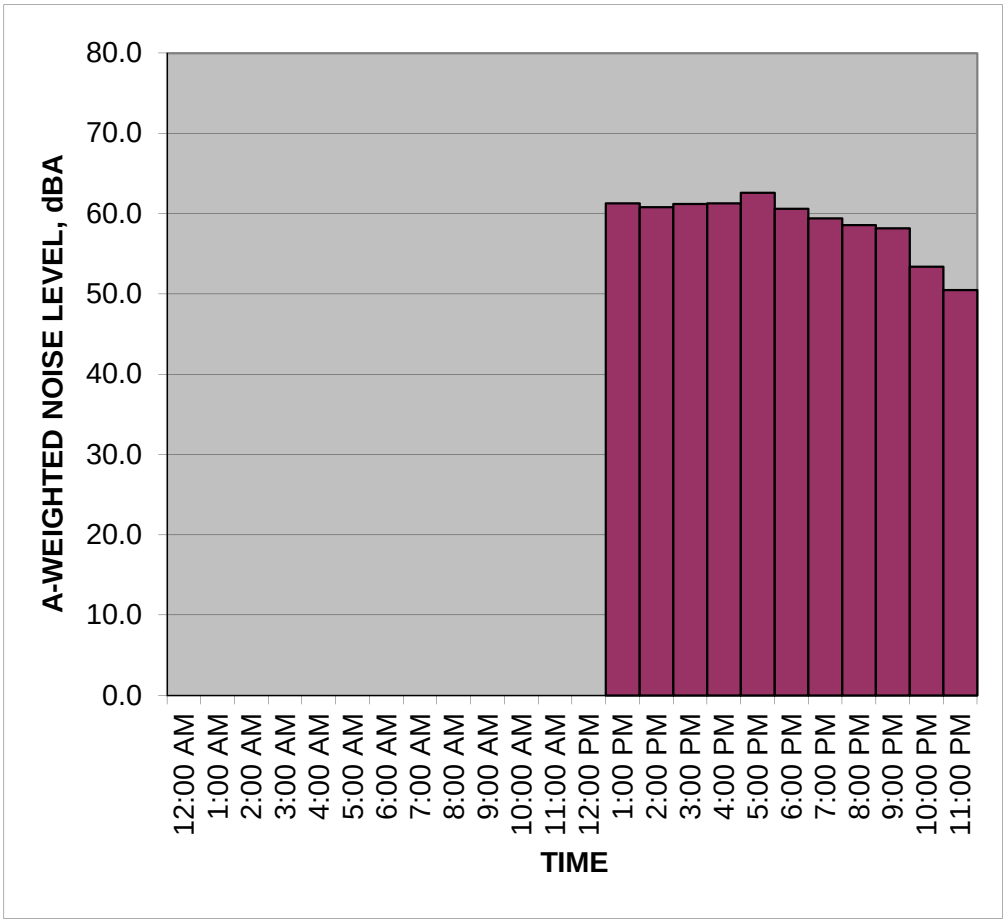
NOTES:

Measured Ambient Noise Levels

Project: Town of Mammoth Lakes
Land Use Element and Zoning Code Amendments/Mobility Element Update
Location: L2
Sources: Ambient

Date: August 20, 2015

TIME	HNL, dB(A)
12:00 AM	0.0
1:00 AM	0.0
2:00 AM	0.0
3:00 AM	0.0
4:00 AM	0.0
5:00 AM	0.0
6:00 AM	0.0
7:00 AM	0.0
8:00 AM	0.0
9:00 AM	0.0
10:00 AM	0.0
11:00 AM	0.0
12:00 PM	0.0
1:00 PM	61.3
2:00 PM	60.8
3:00 PM	61.2
4:00 PM	61.3
5:00 PM	62.6
6:00 PM	60.6
7:00 PM	59.4
8:00 PM	58.6
9:00 PM	58.2
10:00 PM	53.4
11:00 PM	50.5
CNEL, dB(A):	**62.3**



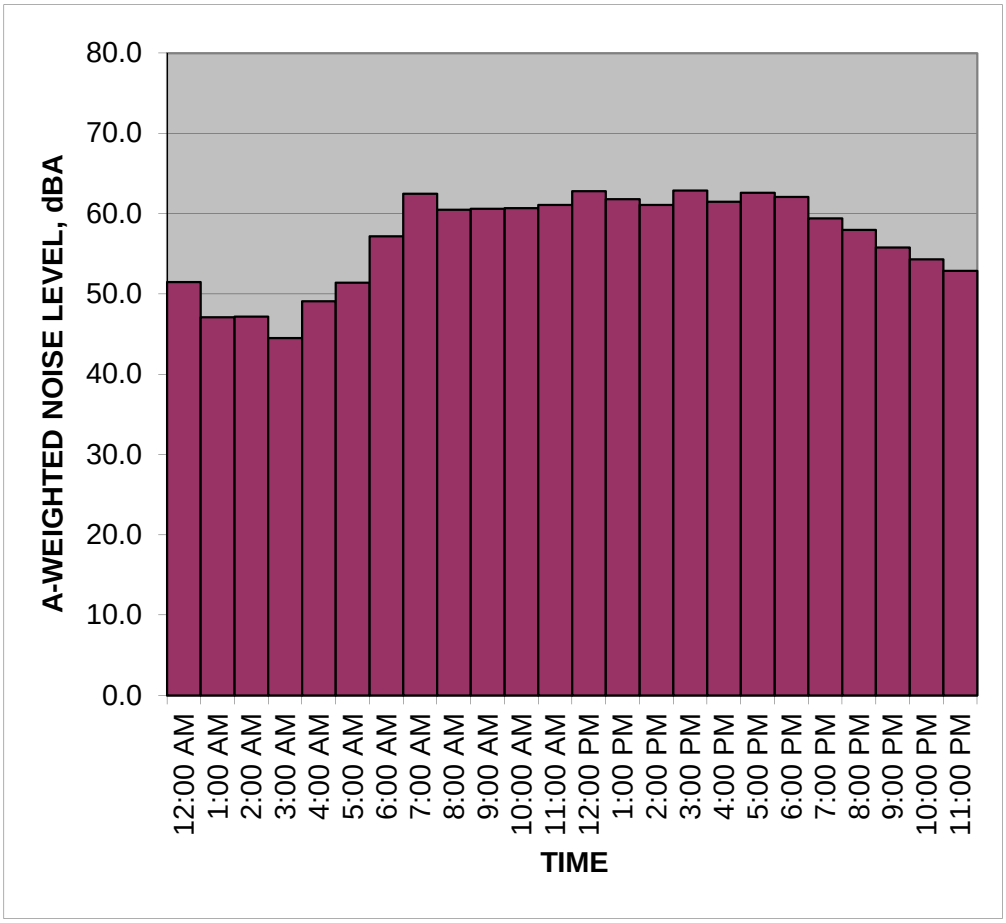
NOTES:

Measured Ambient Noise Levels

Project: Town of Mammoth Lakes
Land Use Element and Zoning Code Amendments/Mobility Element Update
Location: L2
Sources: Ambient

Date: August 21, 2015

TIME	HNL, dB(A)
12:00 AM	51.5
1:00 AM	47.1
2:00 AM	47.2
3:00 AM	44.5
4:00 AM	49.1
5:00 AM	51.4
6:00 AM	57.2
7:00 AM	62.5
8:00 AM	60.5
9:00 AM	60.6
10:00 AM	60.7
11:00 AM	61.1
12:00 PM	62.8
1:00 PM	61.8
2:00 PM	61.1
3:00 PM	62.9
4:00 PM	61.5
5:00 PM	62.6
6:00 PM	62.1
7:00 PM	59.4
8:00 PM	58.0
9:00 PM	55.8
10:00 PM	54.3
11:00 PM	52.9
CNEL, dB(A):	**62.1**



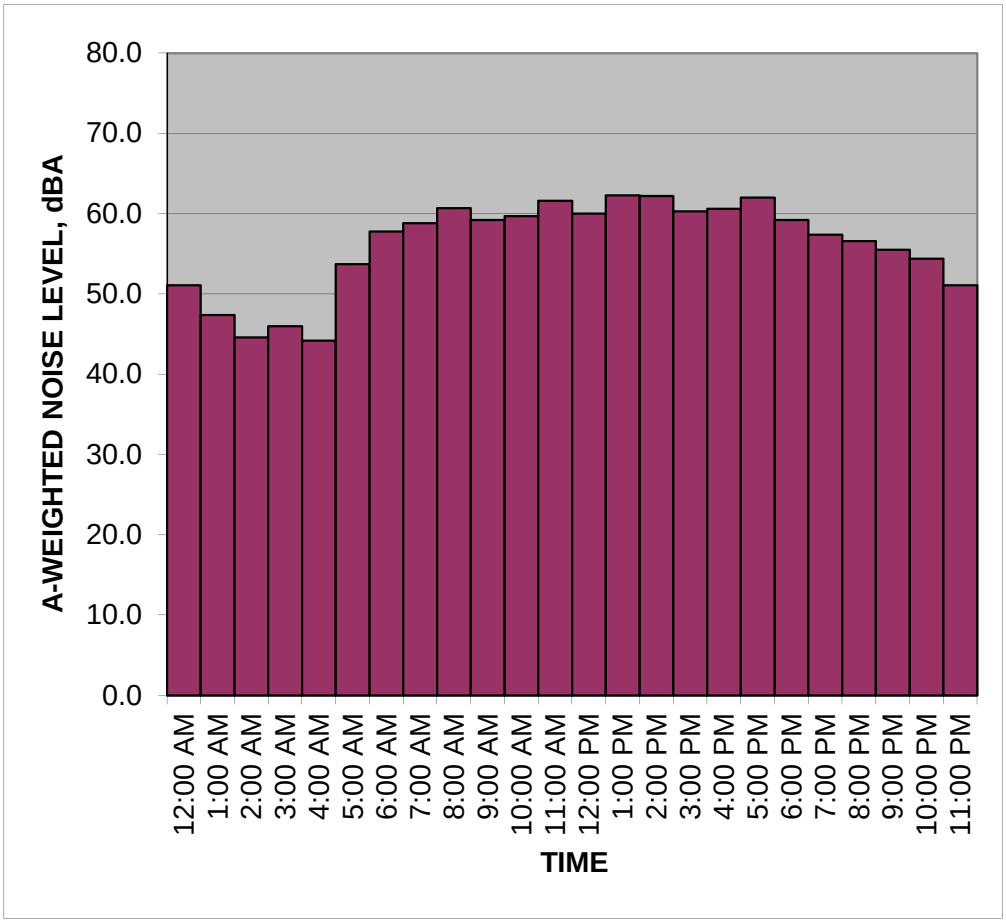
NOTES:

Measured Ambient Noise Levels

Project: Town of Mammoth Lakes
Land Use Element and Zoning Code Amendments/Mobility Element Update
Location: L2
Sources: Ambient

Date: August 22, 2015

TIME	HNL, dB(A)
12:00 AM	51.1
1:00 AM	47.4
2:00 AM	44.6
3:00 AM	46.0
4:00 AM	44.2
5:00 AM	53.7
6:00 AM	57.8
7:00 AM	58.8
8:00 AM	60.7
9:00 AM	59.2
10:00 AM	59.7
11:00 AM	61.6
12:00 PM	60.0
1:00 PM	62.3
2:00 PM	62.2
3:00 PM	60.3
4:00 PM	60.6
5:00 PM	62.0
6:00 PM	59.2
7:00 PM	57.4
8:00 PM	56.6
9:00 PM	55.5
10:00 PM	54.4
11:00 PM	51.1
CNEL, dB(A):	**61.5**



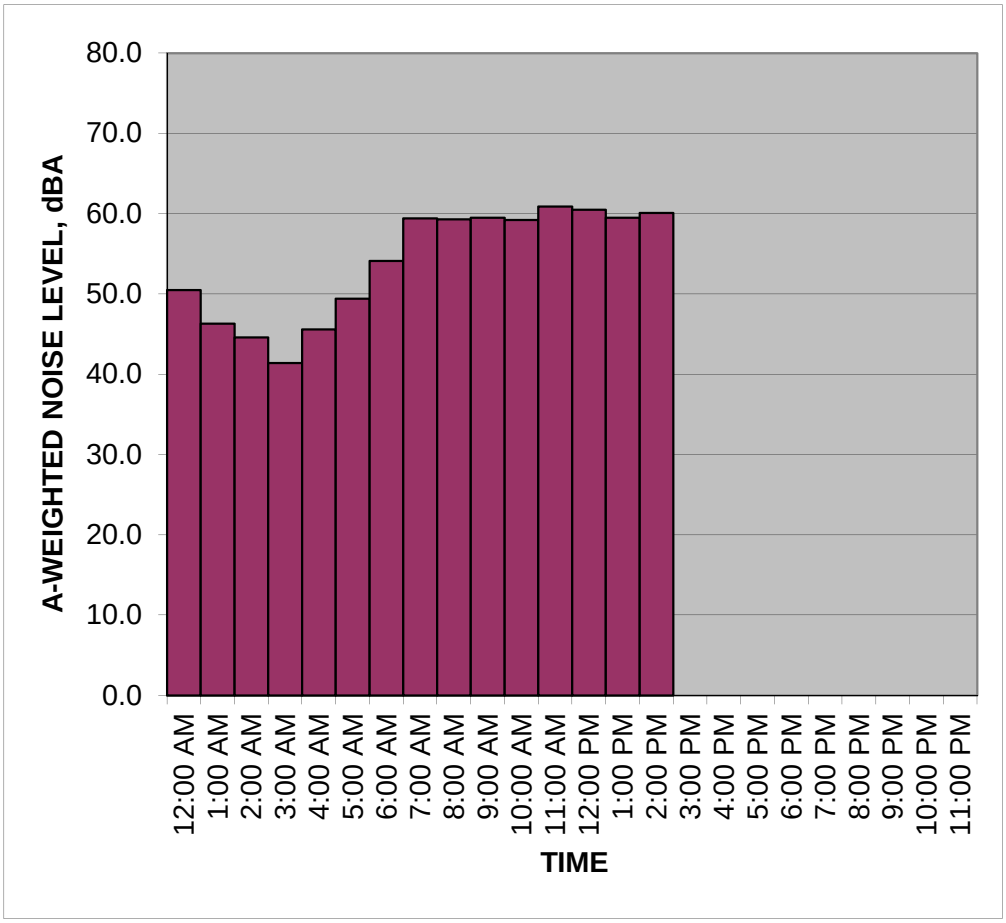
NOTES:

Measured Ambient Noise Levels

Project: Town of Mammoth Lakes
Land Use Element and Zoning Code Amendments/Mobility Element Update
Location: L2
Sources: Ambient

Date: August 23, 2015

TIME	HNL, dB(A)
12:00 AM	50.5
1:00 AM	46.3
2:00 AM	44.6
3:00 AM	41.4
4:00 AM	45.6
5:00 AM	49.4
6:00 AM	54.1
7:00 AM	59.4
8:00 AM	59.3
9:00 AM	59.5
10:00 AM	59.2
11:00 AM	60.9
12:00 PM	60.5
1:00 PM	59.5
2:00 PM	60.1
3:00 PM	0.0
4:00 PM	0.0
5:00 PM	0.0
6:00 PM	0.0
7:00 PM	0.0
8:00 PM	0.0
9:00 PM	0.0
10:00 PM	0.0
11:00 PM	0.0
CNEL, dB(A):	**59.5**



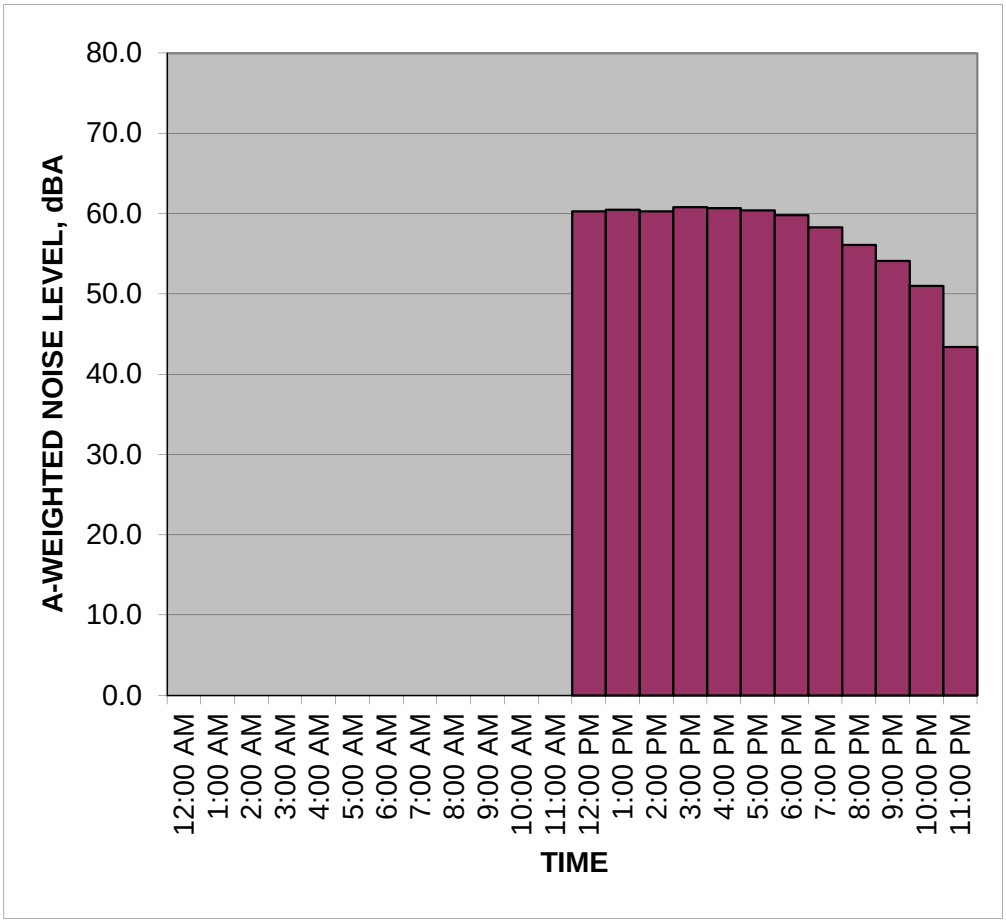
NOTES:

Measured Ambient Noise Levels

Project: Town of Mammoth Lakes
Land Use Element and Zoning Code Amendments/Mobility Element Update
Location: L3
Sources: Ambient

Date: August 26, 2015

TIME	HNL, dB(A)
12:00 AM	0.0
1:00 AM	0.0
2:00 AM	0.0
3:00 AM	0.0
4:00 AM	0.0
5:00 AM	0.0
6:00 AM	0.0
7:00 AM	0.0
8:00 AM	0.0
9:00 AM	0.0
10:00 AM	0.0
11:00 AM	0.0
12:00 PM	60.3
1:00 PM	60.5
2:00 PM	60.3
3:00 PM	60.8
4:00 PM	60.7
5:00 PM	60.4
6:00 PM	59.8
7:00 PM	58.3
8:00 PM	56.1
9:00 PM	54.1
10:00 PM	51.0
11:00 PM	43.4
CNEL, dB(A):	**60.5**



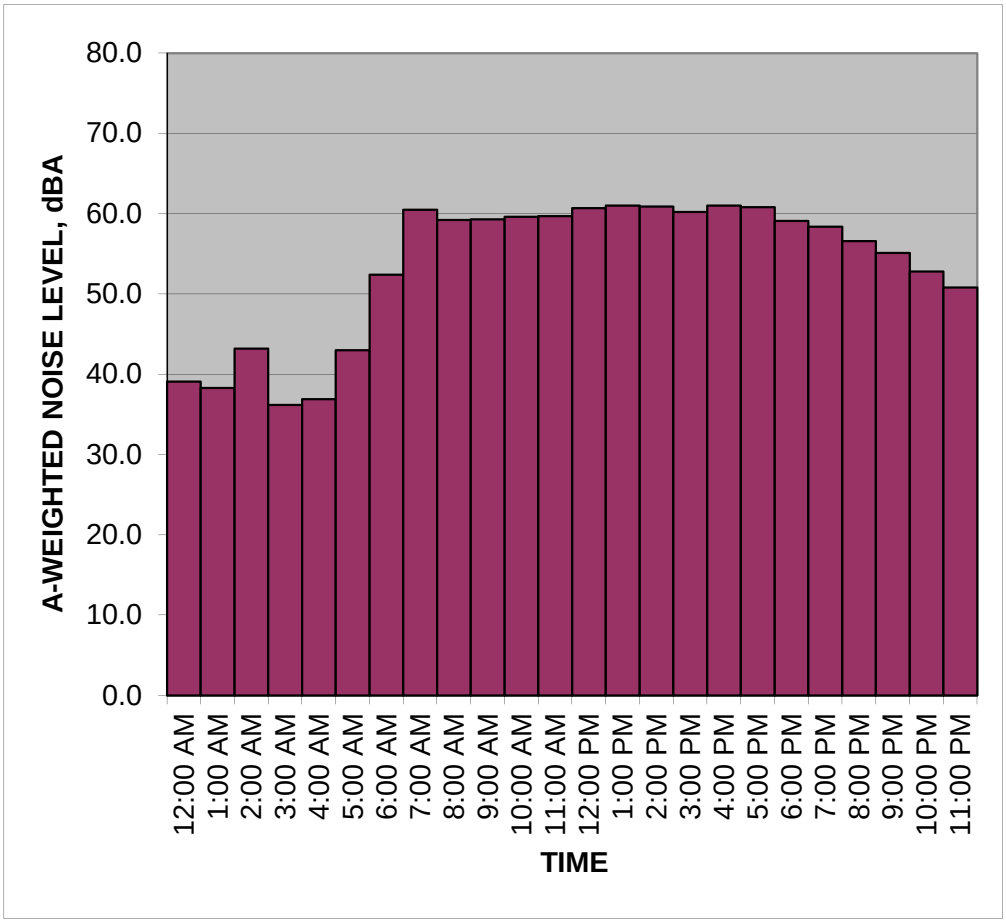
NOTES:

Measured Ambient Noise Levels

Project: Town of Mammoth Lakes
Land Use Element and Zoning Code Amendments/Mobility Element Update
Location: L3
Sources: Ambient

Date: August 27, 2015

TIME	HNL, dB(A)
12:00 AM	39.1
1:00 AM	38.3
2:00 AM	43.2
3:00 AM	36.2
4:00 AM	36.9
5:00 AM	43.0
6:00 AM	52.4
7:00 AM	60.5
8:00 AM	59.2
9:00 AM	59.3
10:00 AM	59.6
11:00 AM	59.7
12:00 PM	60.7
1:00 PM	61.0
2:00 PM	60.9
3:00 PM	60.2
4:00 PM	61.0
5:00 PM	60.8
6:00 PM	59.1
7:00 PM	58.4
8:00 PM	56.6
9:00 PM	55.1
10:00 PM	52.8
11:00 PM	50.8
CNEL, dB(A):	**59.8**



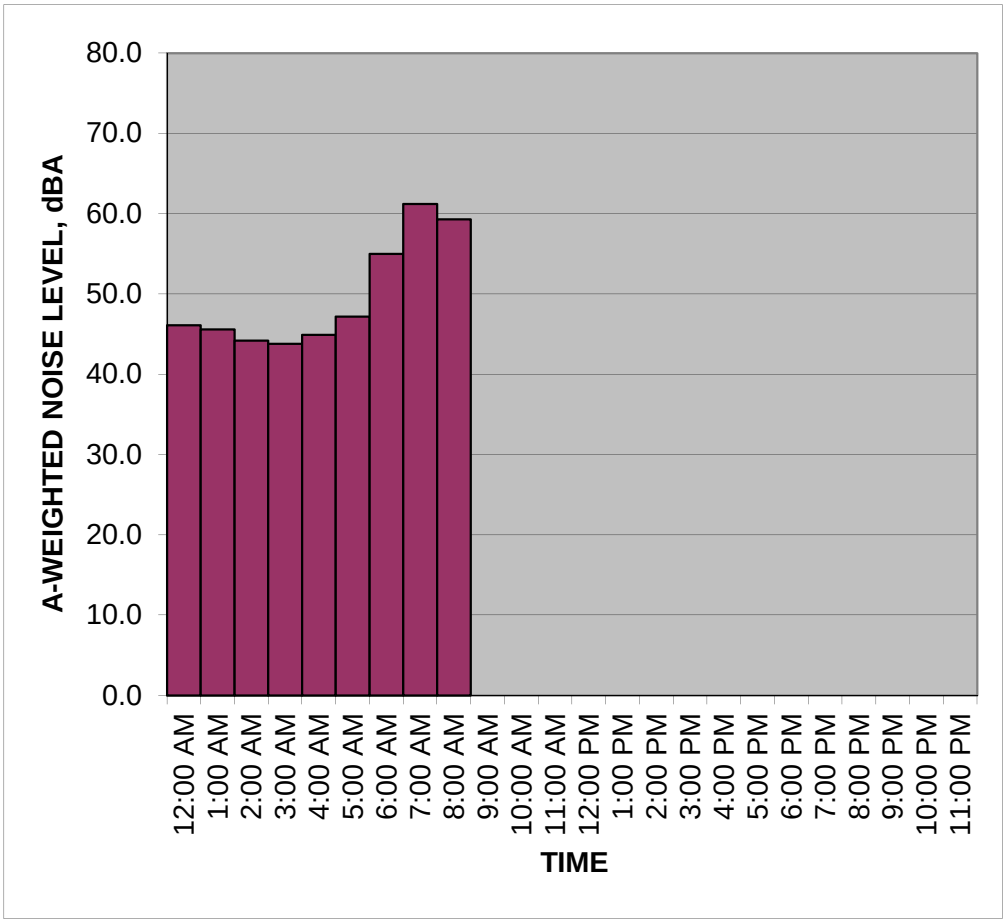
NOTES:

Measured Ambient Noise Levels

Project: Town of Mammoth Lakes
Land Use Element and Zoning Code Amendments/Mobility Element Update
Location: L3
Sources: Ambient

Date: August 28, 2015

TIME	HNL, dB(A)
12:00 AM	46.1
1:00 AM	45.6
2:00 AM	44.2
3:00 AM	43.8
4:00 AM	44.9
5:00 AM	47.2
6:00 AM	55.0
7:00 AM	61.2
8:00 AM	59.3
9:00 AM	0.0
10:00 AM	0.0
11:00 AM	0.0
12:00 PM	0.0
1:00 PM	0.0
2:00 PM	0.0
3:00 PM	0.0
4:00 PM	0.0
5:00 PM	0.0
6:00 PM	0.0
7:00 PM	0.0
8:00 PM	0.0
9:00 PM	0.0
10:00 PM	0.0
11:00 PM	0.0
CNEL, dB(A):	**59.2**



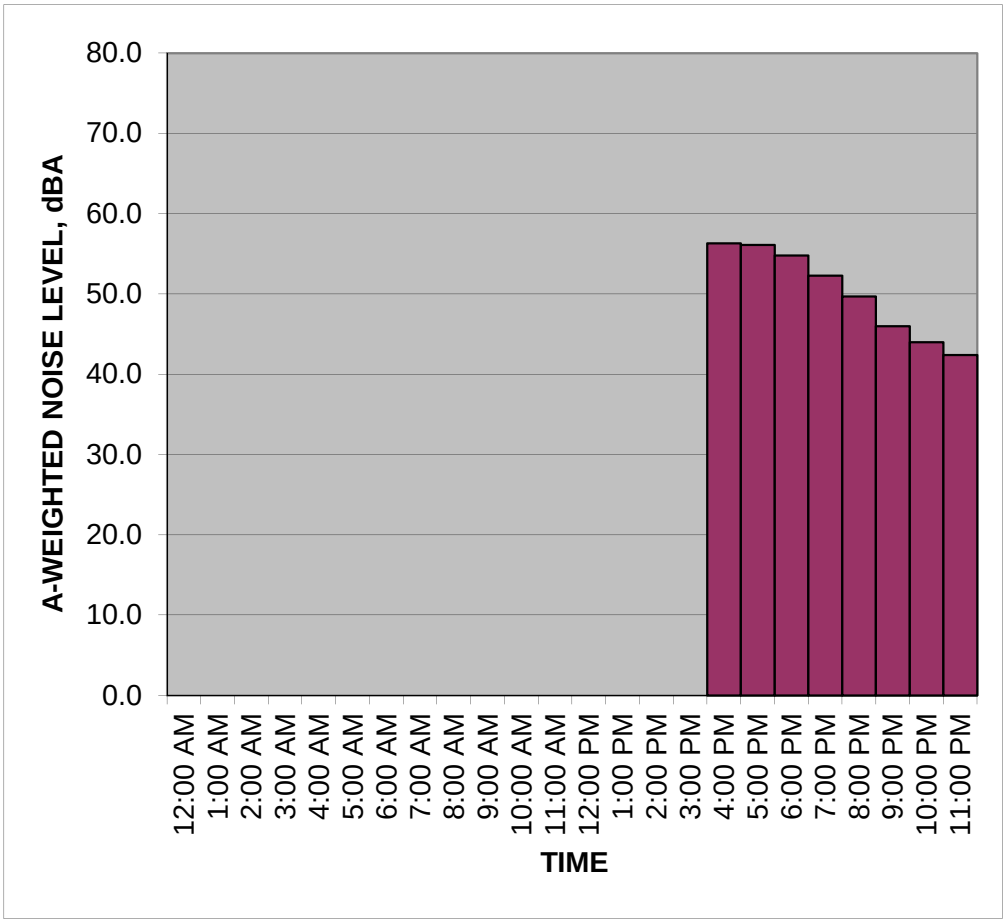
NOTES:

Measured Ambient Noise Levels

Project: Town of Mammoth Lakes
Land Use Element and Zoning Code Amendments/Mobility Element Update
Location: L4
Sources: Ambient

Date: August 24, 2015

TIME	HNL, dB(A)
12:00 AM	0.0
1:00 AM	0.0
2:00 AM	0.0
3:00 AM	0.0
4:00 AM	0.0
5:00 AM	0.0
6:00 AM	0.0
7:00 AM	0.0
8:00 AM	0.0
9:00 AM	0.0
10:00 AM	0.0
11:00 AM	0.0
12:00 PM	0.0
1:00 PM	0.0
2:00 PM	0.0
3:00 PM	0.0
4:00 PM	56.3
5:00 PM	56.1
6:00 PM	54.8
7:00 PM	52.3
8:00 PM	49.7
9:00 PM	46.0
10:00 PM	44.0
11:00 PM	42.4
CNEL, dB(A):	**55.0**



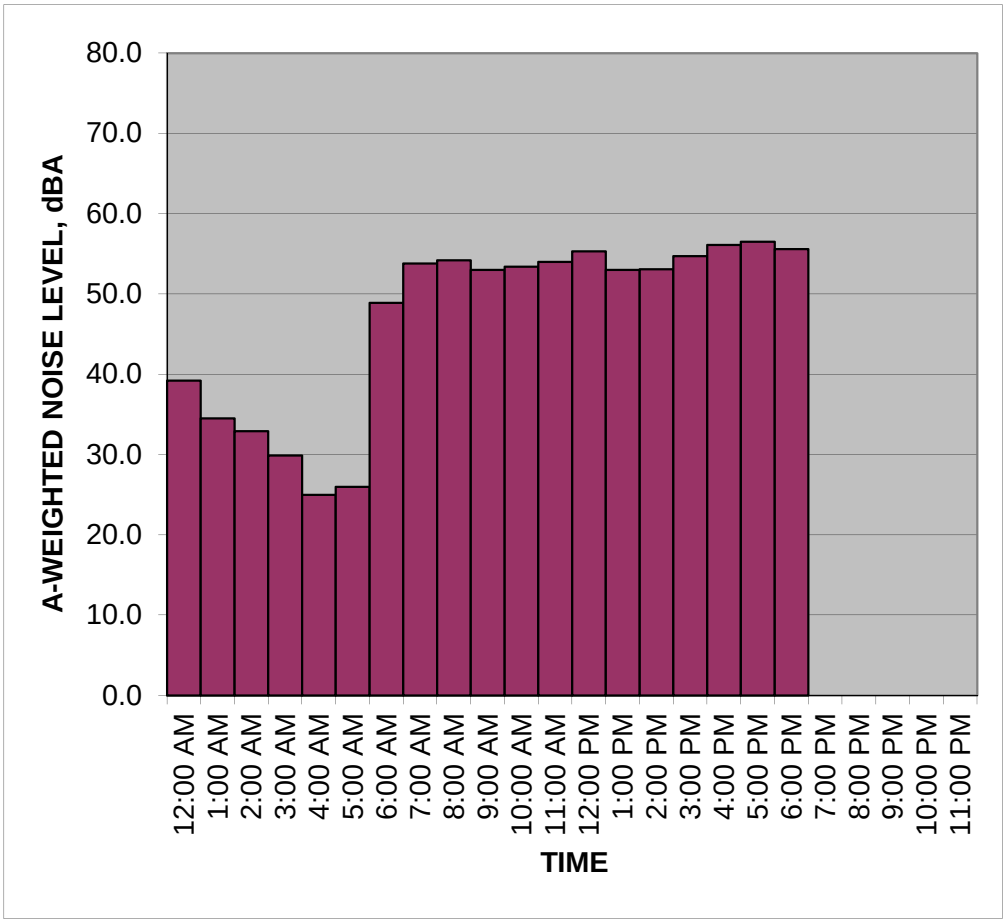
NOTES:

Measured Ambient Noise Levels

Project: Town of Mammoth Lakes
Land Use Element and Zoning Code Amendments/Mobility Element Update
Location: L4
Sources: Ambient

Date: August 25, 2015

TIME	HNL, dB(A)
12:00 AM	39.2
1:00 AM	34.5
2:00 AM	32.9
3:00 AM	29.9
4:00 AM	25.0
5:00 AM	26.0
6:00 AM	48.9
7:00 AM	53.8
8:00 AM	54.2
9:00 AM	53.0
10:00 AM	53.4
11:00 AM	54.0
12:00 PM	55.3
1:00 PM	53.0
2:00 PM	53.1
3:00 PM	54.7
4:00 PM	56.1
5:00 PM	56.5
6:00 PM	55.6
7:00 PM	0.0
8:00 PM	0.0
9:00 PM	0.0
10:00 PM	0.0
11:00 PM	0.0
CNEL, dB(A):	**53.6**



NOTES:

fieldcnel.xls

Appendix D.2
Traffic Noise Calculation

Project: Town of Mammoth Lakes Land Use Element and Zoning Code Amendments/Mobility Element Update

Scenario 3: General Plan Buildout with Existing Roadway Network

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Main Street between Minaret Rd and Mountain Blvd	40			0	-	-	-	-	-	-
Main Street between Mountain Blvd and Post Office	40			0	-	-	-	-	-	-
Main Street between Post Office and Center Street	40			0	-	-	-	-	-	-
Main Street between Center Street and Forest Trail	40			0	-	-	-	-	-	-
Main Street between Forest Trail and Laurel Mountain Road	40			0	-	-	-	-	-	-

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Main Street between Minaret Rd and Mountain Blvd	40	1331	1331	0	70.3	67.1	65.3	71.6	68.3	66.5
Main Street between Mountain Blvd and Post Office	40	1535	1535	0	71.0	67.7	65.9	72.2	68.9	67.1
Main Street between Post Office and Center Street	40	1616	1616	0	70.7	67.7	66.0	71.9	68.9	67.2
Main Street between Center Street and Forest Trail	40	1597	1597	0	70.7	67.7	65.9	71.9	68.9	67.1
Main Street between Forest Trail and Laurel Mountain Road	40	1755	1755	0	71.1	68.1	66.3	72.3	69.3	67.5

Future With Project

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Main Street between Minaret Rd and Mountain Blvd	40	1878	1878	0	71.8	68.6	66.8	73.1	69.8	68.0
Main Street between Mountain Blvd and Post Office	40	1778	1778	0	71.6	68.4	66.5	72.8	69.6	67.7
Main Street between Post Office and Center Street	40	1780	1780	0	71.1	68.1	66.4	72.3	69.4	67.6
Main Street between Center Street and Forest Trail	40	1765	1765	0	71.1	68.1	66.3	72.3	69.3	67.6
Main Street between Forest Trail and Laurel Mountain Road	40	1955	1955	0	71.5	68.5	66.8	72.7	69.8	68.0

CNEL

Summary Roadway/Segment	25 ft. from ROW Project	Increment	At ROW Project	Increment
Main Street between Minaret Rd and Mountain Blvd	1.5	-	1.5	-
Main Street between Mountain Blvd and Post Office	0.7	-	0.6	-
Main Street between Post Office and Center Street	0.5	-	0.4	-
Main Street between Center Street and Forest Trail	0.4	-	0.4	-
Main Street between Forest Trail and Laurel Mountain Road	0.5	-	0.4	-

% of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Town of Mammoth Lakes Land Use Element and Zoning Code Amendments/Mobility Element Update

Scenario 3: General Plan Buildout with Existing Roadway Network

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Main Street between Laurel Mountain Road and Old Mammoth Ro	40			0	-	-	-	-	-	-
Main Street between Old Mammoth Road and Sierra Park Blvd	40			0	-	-	-	-	-	-
Main Street between Sierra Park Blvd and Thompson Way	40			0	-	-	-	-	-	-
Old Mammoth Road between Main Street and Tavern Road	35			0	-	-	-	-	-	-
Old Mammoth Road between Tavern Road and Sierra Nevada Ro	35			0	-	-	-	-	-	-

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Main Street between Laurel Mountain Road and Old Mammoth Ro	40	1530	1530	0	70.5	67.5	65.7	71.7	68.7	66.9
Main Street between Old Mammoth Road and Sierra Park Blvd	40	768	768	0	67.5	64.5	62.7	68.7	65.7	63.9
Main Street between Sierra Park Blvd and Thompson Way	40	737	737	0	67.3	64.3	62.6	68.5	65.5	63.8
Old Mammoth Road between Main Street and Tavern Road	35	1137	1137	0	68.9	65.3	63.4	70.1	66.6	64.6
Old Mammoth Road between Tavern Road and Sierra Nevada Ro	35	1156	1156	0	69.0	65.4	63.5	70.2	66.6	64.7

Future With Project

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Main Street between Laurel Mountain Road and Old Mammoth Ro	40	1695	1695	0	70.9	67.9	66.2	72.1	69.1	67.4
Main Street between Old Mammoth Road and Sierra Park Blvd	40	850	850	0	67.9	64.9	63.2	69.1	66.1	64.4
Main Street between Sierra Park Blvd and Thompson Way	40	800	800	0	67.7	64.7	62.9	68.9	65.9	64.1
Old Mammoth Road between Main Street and Tavern Road	35	1268	1268	0	69.4	65.8	63.9	70.6	67.0	65.1
Old Mammoth Road between Tavern Road and Sierra Nevada Ro	35	1340	1340	0	69.6	66.1	64.1	70.8	67.3	65.3

CNEL

Summary / Roadway/Segment	25 ft. from ROW Project	25 ft. from ROW Increment	At ROW Project	At ROW Increment
Main Street between Laurel Mountain Road and Old Mammoth Ro	0.4	-	0.4	-
Main Street between Old Mammoth Road and Sierra Park Blvd	0.4	-	0.4	-
Main Street between Sierra Park Blvd and Thompson Way	0.4	-	0.4	-
Old Mammoth Road between Main Street and Tavern Road	0.4	-	0.5	-
Old Mammoth Road between Tavern Road and Sierra Nevada Ro	0.7	-	0.6	-

% of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Town of Mammoth Lakes Land Use Element and Zoning Code Amendments/Mobility Element Update

Scenario 3: General Plan Buildout with Existing Roadway Network

Existing										
	Speed	Traffic Volumes			Leq			CNEL		
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Old Mammoth Road between Sierra Nevada Road and Meridian B	35			0	-	-	-	-	-	-
Old Mammoth Road between Meridian Blvd and Chateau Road	35			0	-	-	-	-	-	-
Old Mammoth Road between Chateau Road and Minaret Road	35			0	-	-	-	-	-	-
Meridian Boulevard between Minaret Rd and Old Mammoth Road	40			0	-	-	-	-	-	-
Meridian Boulevard between Old Mammoth Road and Sierra Park	40			0	-	-	-	-	-	-
Existing										
	Speed	Traffic Volumes			Leq			CNEL		
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Old Mammoth Road between Sierra Nevada Road and Meridian B	35	1066	1066	0	69.5	65.4	63.4	70.7	66.6	64.6
Old Mammoth Road between Meridian Blvd and Chateau Road	35	817	817	0	68.3	64.3	62.2	69.6	65.5	63.4
Old Mammoth Road between Chateau Road and Minaret Road	35	499	499	0	65.3	61.8	59.8	66.6	63.0	61.1
Meridian Boulevard between Minaret Rd and Old Mammoth Road	40	1140	1140	0	69.7	66.4	64.6	70.9	67.6	65.8
Meridian Boulevard between Old Mammoth Road and Sierra Park	40	1181	1181	0	69.8	66.6	64.8	71.0	67.8	66.0
Future With Project										
	Speed	Traffic Volumes			Leq			CNEL		
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Old Mammoth Road between Sierra Nevada Road and Meridian B	35	1233	1233	0	70.1	66.1	64.0	71.3	67.3	65.2
Old Mammoth Road between Meridian Blvd and Chateau Road	35	1070	1070	0	69.5	65.4	63.4	70.7	66.7	64.6
Old Mammoth Road between Chateau Road and Minaret Road	35	815	815	0	67.5	63.9	62.0	68.7	65.1	63.2
Meridian Boulevard between Minaret Rd and Old Mammoth Road	40	1363	1363	0	70.4	67.2	65.4	71.7	68.4	66.6
Meridian Boulevard between Old Mammoth Road and Sierra Park	40	1293	1293	0	70.2	67.0	65.1	71.4	68.2	66.4

	CNEL			
Summary	25 ft. from ROW		At ROW	
Roadway/Segment	Project	Increment	Project	Increment
Old Mammoth Road between Sierra Nevada Road and Meridian B	0.7	-	0.6	-
Old Mammoth Road between Meridian Blvd and Chateau Road	1.2	-	1.1	-
Old Mammoth Road between Chateau Road and Minaret Road	2.1	-	2.1	-
Meridian Boulevard between Minaret Rd and Old Mammoth Road	0.8	-	0.8	-
Meridian Boulevard between Old Mammoth Road and Sierra Park	0.4	-	0.4	-

	% of ADT			
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Town of Mammoth Lakes Land Use Element and Zoning Code Amendments/Mobility Element Update

Scenario 3: General Plan Buildout with Existing Roadway Network

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Minaret Road between Fores Trail and Lake Mary Road	35			0	-	-	-	-	-	-
Minaret Road between Lake Mary Road and Meridian Blvd	35			0	-	-	-	-	-	-
Minaret Road between Meridian Blvd and Old Mammoth Road	35			0	-	-	-	-	-	-
Lake Mary Road w/o Minaret Road	40			0	-	-	-	-	-	-
Fairway Drive s/o Old Mammoth Road	35			0	-	-	-	-	-	-

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Minaret Road between Fores Trail and Lake Mary Road	35	1068	1068	0	66.9	64.2	62.6	68.1	65.4	63.8
Minaret Road between Lake Mary Road and Meridian Blvd	35	874	874	0	68.6	64.6	62.5	69.9	65.8	63.7
Minaret Road between Meridian Blvd and Old Mammoth Road	35	456	456	0	65.8	61.7	59.7	67.0	63.0	60.9
Lake Mary Road w/o Minaret Road	40	890	890	0	68.6	65.4	63.5	69.8	66.6	64.7
Fairway Drive s/o Old Mammoth Road	35	122	122	0	60.1	56.0	54.0	61.3	57.2	55.2

Future With Project

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Minaret Road between Fores Trail and Lake Mary Road	35	1305	1305	0	67.7	65.1	63.4	69.0	66.3	64.7
Minaret Road between Lake Mary Road and Meridian Blvd	35	1348	1348	0	70.5	66.4	64.4	71.7	67.7	65.6
Minaret Road between Meridian Blvd and Old Mammoth Road	35	870	870	0	68.6	64.5	62.5	69.8	65.8	63.7
Lake Mary Road w/o Minaret Road	40	1795	1795	0	71.6	68.4	66.6	72.9	69.6	67.8
Fairway Drive s/o Old Mammoth Road	35	655	655	0	67.4	63.3	61.2	68.6	64.5	62.5

CNEL

Summary Roadway/Segment	25 ft. from ROW Project	 Increment	At ROW Project	 Increment
Minaret Road between Fores Trail and Lake Mary Road	0.9	-	0.9	-
Minaret Road between Lake Mary Road and Meridian Blvd	1.9	-	1.8	-
Minaret Road between Meridian Blvd and Old Mammoth Road	2.8	-	2.8	-
Lake Mary Road w/o Minaret Road	3.0	-	3.1	-
Fairway Drive s/o Old Mammoth Road	7.3	-	7.3	-

	% of ADT			
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Town of Mammoth Lakes Land Use Element and Zoning Code Amendments/Mobility Element Update

Scenario 3: General Plan Buildout with Existing Roadway Network

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Mountain Boulevard north of Main Street	35			0	-	-	-	-	-	-
Mountain Boulevard s/o Main Street	35			0	-	-	-	-	-	-
Tavern Road w/o Olad Mammoth Road	35			0	-	-	-	-	-	-
Tavern Road e/o Olad Mammoth Road	35			0	-	-	-	-	-	-
Sierra Park Road between Main Street and Meridian Blvd	35			0	-	-	-	-	-	-

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Mountain Boulevard north of Main Street	35	107	107	0	59.5	55.4	53.4	60.7	56.7	54.6
Mountain Boulevard s/o Main Street	35	79	79	0	58.2	54.1	52.1	59.4	55.3	53.3
Tavern Road w/o Olad Mammoth Road	35	107	107	0	57.5	54.6	52.8	58.7	55.8	54.0
Tavern Road e/o Olad Mammoth Road	35	69	69	0	55.6	52.7	50.9	56.8	53.9	52.1
Sierra Park Road between Main Street and Meridian Blvd	35	211	211	0	62.5	58.4	56.3	63.7	59.6	57.5

Future With Project

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Mountain Boulevard north of Main Street	35	245	245	0	63.1	59.0	57.0	64.3	60.3	58.2
Mountain Boulevard s/o Main Street	35	150	150	0	61.0	56.9	54.8	62.2	58.1	56.1
Tavern Road w/o Olad Mammoth Road	35	155	155	0	59.1	56.2	54.4	60.4	57.4	55.6
Tavern Road e/o Olad Mammoth Road	35	65	65	0	55.4	52.4	50.6	56.6	53.6	51.9
Sierra Park Road between Main Street and Meridian Blvd	35	273	273	0	63.6	59.5	57.4	64.8	60.7	58.7

CNEL

Summary Roadway/Segment	25 ft. from ROW Project	 Increment	At ROW Project	 Increment
Mountain Boulevard north of Main Street	3.6	-	3.6	-
Mountain Boulevard s/o Main Street	2.8	-	2.8	-
Tavern Road w/o Olad Mammoth Road	1.6	-	1.7	-
Tavern Road e/o Olad Mammoth Road	-0.3	-	-0.2	-
Sierra Park Road between Main Street and Meridian Blvd	1.1	-	1.1	-

% of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Town of Mammoth Lakes Land Use Element and Zoning Code Amendments/Mobility Element Update

Scenario 3: General Plan Buildout with Existing Roadway Network

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Sierra Nevada Road e/o Old Mammoth Road	35			0	-	-	-	-	-	-
Sierra Nevada Road w/o Old Mammoth Road	35			0	-	-	-	-	-	-
Chateau Road e/o Old Mammoth Road	35			0	-	-	-	-	-	-
Chateau Road w/o Old Mammoth Road	35			0	-	-	-	-	-	-
Thompson Way s/o Main Street	35			0	-	-	-	-	-	-

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Sierra Nevada Road e/o Old Mammoth Road	35	112	112	0	59.7	55.6	53.6	60.9	56.9	54.8
Sierra Nevada Road w/o Old Mammoth Road	35	207	207	0	60.4	57.4	55.7	61.6	58.6	56.9
Chateau Road e/o Old Mammoth Road	35	112	112	0	59.7	55.6	53.6	60.9	56.9	54.8
Chateau Road w/o Old Mammoth Road	35	160	160	0	61.3	57.2	55.1	62.5	58.4	56.3
Thompson Way s/o Main Street	35	16	16	0	51.3	47.2	45.1	52.5	48.4	46.3

Future With Project

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Sierra Nevada Road e/o Old Mammoth Road	35	145	145	0	60.8	56.8	54.7	62.1	58.0	55.9
Sierra Nevada Road w/o Old Mammoth Road	35	265	265	0	61.5	58.5	56.7	62.7	59.7	58.0
Chateau Road e/o Old Mammoth Road	35	245	245	0	63.1	59.0	57.0	64.3	60.3	58.2
Chateau Road w/o Old Mammoth Road	35	220	220	0	62.6	58.6	56.5	63.9	59.8	57.7
Thompson Way s/o Main Street	35	10	10	0	49.2	45.2	43.1	50.4	46.4	44.3

CNEL

Summary	25 ft. from ROW		At ROW	
Roadway/Segment	Project	Increment	Project	Increment
Sierra Nevada Road e/o Old Mammoth Road	1.1	-	1.2	-
Sierra Nevada Road w/o Old Mammoth Road	1.1	-	1.1	-
Chateau Road e/o Old Mammoth Road	3.4	-	3.4	-
Chateau Road w/o Old Mammoth Road	1.4	-	1.4	-
Thompson Way s/o Main Street	-2.0	-	-2.1	-

% of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Town of Mammoth Lakes Land Use Element and Zoning Code Amendments/Mobility Element Update

Scenario 4: General Plan Buildout with Mobility Element Update

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Main Street between Minaret Rd and Mountain Blvd	40			0	-	-	-	-	-	-
Main Street between Mountain Blvd and Post Office	40			0	-	-	-	-	-	-
Main Street between Post Office and Center Street	40			0	-	-	-	-	-	-
Main Street between Center Street and Forest Trail	40			0	-	-	-	-	-	-
Main Street between Forest Trail and Laurel Mountain Road	40			0	-	-	-	-	-	-

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Main Street between Minaret Rd and Mountain Blvd	40	1331	1331	0	70.3	67.1	65.3	71.6	68.3	66.5
Main Street between Mountain Blvd and Post Office	40	1535	1535	0	71.0	67.7	65.9	72.2	68.9	67.1
Main Street between Post Office and Center Street	40	1616	1616	0	70.7	67.7	66.0	71.9	68.9	67.2
Main Street between Center Street and Forest Trail	40	1597	1597	0	70.7	67.7	65.9	71.9	68.9	67.1
Main Street between Forest Trail and Laurel Mountain Road	40	1755	1755	0	71.1	68.1	66.3	72.3	69.3	67.5

Future With Project

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Main Street between Minaret Rd and Mountain Blvd	40	1955	1955	0	72.0	68.8	66.9	73.2	70.0	68.2
Main Street between Mountain Blvd and Post Office	40	1990	1990	0	72.1	68.9	67.0	73.3	70.1	68.2
Main Street between Post Office and Center Street	40	2055	2055	0	71.7	68.8	67.0	73.0	70.0	68.2
Main Street between Center Street and Forest Trail	40	1990	1990	0	71.6	68.6	66.9	72.8	69.8	68.1
Main Street between Forest Trail and Laurel Mountain Road	40	2130	2130	0	71.9	68.9	67.2	73.1	70.1	68.4

CNEL

Summary	25 ft. from ROW		At ROW	
Roadway/Segment	Project	Increment	Project	Increment
Main Street between Minaret Rd and Mountain Blvd	1.7	-	1.6	-
Main Street between Mountain Blvd and Post Office	1.2	-	1.1	-
Main Street between Post Office and Center Street	1.1	-	1.1	-
Main Street between Center Street and Forest Trail	0.9	-	0.9	-
Main Street between Forest Trail and Laurel Mountain Road	0.8	-	0.8	-

% of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Town of Mammoth Lakes Land Use Element and Zoning Code Amendments/Mobility Element Update

Scenario 4: General Plan Buildout with Mobility Element Update

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Main Street between Laurel Mountain Road and Old Mammoth Ro	40			0	-	-	-	-	-	-
Main Street between Old Mammoth Road and Sierra Park Blvd	40			0	-	-	-	-	-	-
Main Street between Sierra Park Blvd and Thompson Way	40			0	-	-	-	-	-	-
Old Mammoth Road between Main Street and Tavern Road	35			0	-	-	-	-	-	-
Old Mammoth Road between Tavern Road and Sierra Nevada Ro	35			0	-	-	-	-	-	-

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Main Street between Laurel Mountain Road and Old Mammoth Ro	40	1530	1530	0	70.5	67.5	65.7	71.7	68.7	66.9
Main Street between Old Mammoth Road and Sierra Park Blvd	40	768	768	0	67.5	64.5	62.7	68.7	65.7	63.9
Main Street between Sierra Park Blvd and Thompson Way	40	737	737	0	67.3	64.3	62.6	68.5	65.5	63.8
Old Mammoth Road between Main Street and Tavern Road	35	1137	1137	0	68.9	65.3	63.4	70.1	66.6	64.6
Old Mammoth Road between Tavern Road and Sierra Nevada Ro	35	1156	1156	0	69.0	65.4	63.5	70.2	66.6	64.7

Future With Project

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Main Street between Laurel Mountain Road and Old Mammoth Ro	40	1860	1860	0	71.3	68.3	66.6	72.5	69.5	67.8
Main Street between Old Mammoth Road and Sierra Park Blvd	40	855	855	0	67.9	65.0	63.2	69.2	66.2	64.4
Main Street between Sierra Park Blvd and Thompson Way	40	795	795	0	67.6	64.6	62.9	68.8	65.9	64.1
Old Mammoth Road between Main Street and Tavern Road	35	1323	1323	0	69.6	66.0	64.1	70.8	67.2	65.3
Old Mammoth Road between Tavern Road and Sierra Nevada Ro	35	1293	1293	0	69.5	65.9	64.0	70.7	67.1	65.2

CNEL

Summary Roadway/Segment	25 ft. from ROW Project	 Increment	At ROW Project	 Increment
Main Street between Laurel Mountain Road and Old Mammoth Ro	0.8	-	0.8	-
Main Street between Old Mammoth Road and Sierra Park Blvd	0.5	-	0.5	-
Main Street between Sierra Park Blvd and Thompson Way	0.4	-	0.3	-
Old Mammoth Road between Main Street and Tavern Road	0.6	-	0.7	-
Old Mammoth Road between Tavern Road and Sierra Nevada Ro	0.5	-	0.5	-

	% of ADT			
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Town of Mammoth Lakes Land Use Element and Zoning Code Amendments/Mobility Element Update

Scenario 4: General Plan Buildout with Mobility Element Update

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Old Mammoth Road between Sierra Nevada Road and Meridian B	35			0	-	-	-	-	-	-
Old Mammoth Road between Meridian Blvd and Chateau Road	35			0	-	-	-	-	-	-
Old Mammoth Road between Chateau Road and Minaret Road	35			0	-	-	-	-	-	-
Meridian Boulevard between Minaret Rd and Old Mammoth Road	40			0	-	-	-	-	-	-
Meridian Boulevard between Old Mammoth Road and Sierra Park	40			0	-	-	-	-	-	-

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Old Mammoth Road between Sierra Nevada Road and Meridian B	35	1066	1066	0	69.5	65.4	63.4	70.7	66.6	64.6
Old Mammoth Road between Meridian Blvd and Chateau Road	35	817	817	0	68.3	64.3	62.2	69.6	65.5	63.4
Old Mammoth Road between Chateau Road and Minaret Road	35	499	499	0	65.3	61.8	59.8	66.6	63.0	61.1
Meridian Boulevard between Minaret Rd and Old Mammoth Road	40	1140	1140	0	69.7	66.4	64.6	70.9	67.6	65.8
Meridian Boulevard between Old Mammoth Road and Sierra Park	40	1181	1181	0	69.8	66.6	64.8	71.0	67.8	66.0

Future With Project

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Old Mammoth Road between Sierra Nevada Road and Meridian B	35	1138	1138	0	69.8	65.7	63.6	71.0	66.9	64.9
Old Mammoth Road between Meridian Blvd and Chateau Road	35	930	930	0	68.9	64.8	62.8	70.1	66.1	64.0
Old Mammoth Road between Chateau Road and Minaret Road	35	693	693	0	66.8	63.2	61.3	68.0	64.4	62.5
Meridian Boulevard between Minaret Rd and Old Mammoth Road	40	1273	1273	0	70.1	66.9	65.1	71.4	68.1	66.3
Meridian Boulevard between Old Mammoth Road and Sierra Park	40	1233	1233	0	70.0	66.8	64.9	71.2	68.0	66.2

CNEL

Summary	25 ft. from ROW		At ROW	
Roadway/Segment	Project	Increment	Project	Increment
Old Mammoth Road between Sierra Nevada Road and Meridian B	0.3	-	0.3	-
Old Mammoth Road between Meridian Blvd and Chateau Road	0.6	-	0.5	-
Old Mammoth Road between Chateau Road and Minaret Road	1.4	-	1.4	-
Meridian Boulevard between Minaret Rd and Old Mammoth Road	0.5	-	0.5	-
Meridian Boulevard between Old Mammoth Road and Sierra Park	0.2	-	0.2	-

% of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Town of Mammoth Lakes Land Use Element and Zoning Code Amendments/Mobility Element Update

Scenario 4: General Plan Buildout with Mobility Element Update

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Minaret Road between Fores Trail and Lake Mary Road	35			0	-	-	-	-	-	-
Minaret Road between Lake Mary Road and Meridian Blvd	35			0	-	-	-	-	-	-
Minaret Road between Meridian Blvd and Old Mammoth Road	35			0	-	-	-	-	-	-
Lake Mary Road w/o Minaret Road	40			0	-	-	-	-	-	-
Fairway Drive s/o Old Mammoth Road	35			0	-	-	-	-	-	-

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Minaret Road between Fores Trail and Lake Mary Road	35	1068	1068	0	66.9	64.2	62.6	68.1	65.4	63.8
Minaret Road between Lake Mary Road and Meridian Blvd	35	874	874	0	68.6	64.6	62.5	69.9	65.8	63.7
Minaret Road between Meridian Blvd and Old Mammoth Road	35	456	456	0	65.8	61.7	59.7	67.0	63.0	60.9
Lake Mary Road w/o Minaret Road	40	890	890	0	68.6	65.4	63.5	69.8	66.6	64.7
Fairway Drive s/o Old Mammoth Road	35	122	122	0	60.1	56.0	54.0	61.3	57.2	55.2

Future With Project

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Minaret Road between Fores Trail and Lake Mary Road	35	1315	1315	0	67.8	65.1	63.5	69.0	66.3	64.7
Minaret Road between Lake Mary Road and Meridian Blvd	35	1208	1208	0	70.0	66.0	63.9	71.3	67.2	65.1
Minaret Road between Meridian Blvd and Old Mammoth Road	35	773	773	0	68.1	64.0	62.0	69.3	65.2	63.2
Lake Mary Road w/o Minaret Road	40	1720	1720	0	71.5	68.2	66.4	72.7	69.4	67.6
Fairway Drive s/o Old Mammoth Road	35	510	510	0	66.3	62.2	60.2	67.5	63.4	61.4

CNEL

Summary Roadway/Segment	25 ft. from ROW Project	 Increment	At ROW Project	 Increment
Minaret Road between Fores Trail and Lake Mary Road	0.9	-	0.9	-
Minaret Road between Lake Mary Road and Meridian Blvd	1.4	-	1.4	-
Minaret Road between Meridian Blvd and Old Mammoth Road	2.2	-	2.3	-
Lake Mary Road w/o Minaret Road	2.8	-	2.9	-
Fairway Drive s/o Old Mammoth Road	6.2	-	6.2	-

	% of ADT			
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Town of Mammoth Lakes Land Use Element and Zoning Code Amendments/Mobility Element Update

Scenario 4: General Plan Buildout with Mobility Element Update

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Mountain Boulevard north of Main Street	35			0	-	-	-	-	-	-
Mountain Boulevard s/o Main Street	35			0	-	-	-	-	-	-
Tavern Road w/o Olad Mammoth Road	35			0	-	-	-	-	-	-
Tavern Road e/o Olad Mammoth Road	35			0	-	-	-	-	-	-
Sierra Park Road between Main Street and Meridian Blvd	35			0	-	-	-	-	-	-

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Mountain Boulevard north of Main Street	35	107	107	0	59.5	55.4	53.4	60.7	56.7	54.6
Mountain Boulevard s/o Main Street	35	79	79	0	58.2	54.1	52.1	59.4	55.3	53.3
Tavern Road w/o Olad Mammoth Road	35	107	107	0	57.5	54.6	52.8	58.7	55.8	54.0
Tavern Road e/o Olad Mammoth Road	35	69	69	0	55.6	52.7	50.9	56.8	53.9	52.1
Sierra Park Road between Main Street and Meridian Blvd	35	211	211	0	62.5	58.4	56.3	63.7	59.6	57.5

Future With Project

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Mountain Boulevard north of Main Street	35	260	260	0	63.4	59.3	57.2	64.6	60.5	58.5
Mountain Boulevard s/o Main Street	35	150	150	0	61.0	56.9	54.8	62.2	58.1	56.1
Tavern Road w/o Olad Mammoth Road	35	120	120	0	58.0	55.1	53.3	59.2	56.3	54.5
Tavern Road e/o Olad Mammoth Road	35	75	75	0	56.0	53.0	51.3	57.2	54.2	52.5
Sierra Park Road between Main Street and Meridian Blvd	35	263	263	0	63.4	59.3	57.3	64.6	60.6	58.5

CNEL

Summary	25 ft. from ROW		At ROW	
Roadway/Segment	Project	Increment	Project	Increment
Mountain Boulevard north of Main Street	3.8	-	3.9	-
Mountain Boulevard s/o Main Street	2.8	-	2.8	-
Tavern Road w/o Olad Mammoth Road	0.5	-	0.5	-
Tavern Road e/o Olad Mammoth Road	0.3	-	0.4	-
Sierra Park Road between Main Street and Meridian Blvd	1.0	-	0.9	-

	% of ADT			
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Town of Mammoth Lakes Land Use Element and Zoning Code Amendments/Mobility Element Update

Scenario 4: General Plan Buildout with Mobility Element Update

Existing										
	Speed	**Traffic Volumes**			**Leq**			**CNEL**		
Roadway/Segment	**MPH**	**AM**	**PM**	**ADT**	**ROW**	**25 Feet**	**50 Feet**	**ROW**	**25 Feet**	**50 Feet**
Sierra Nevada Road e/o Old Mammoth Road	35			0	-	-	-	-	-	-
Sierra Nevada Road w/o Old Mammoth Road	35			0	-	-	-	-	-	-
Chateau Road e/o Old Mammoth Road	35			0	-	-	-	-	-	-
Chateau Road w/o Old Mammoth Road	35			0	-	-	-	-	-	-
Thompson Way s/o Main Street	35			0	-	-	-	-	-	-
Existing										
	Speed	**Traffic Volumes**			**Leq**			**CNEL**		
Roadway/Segment	**MPH**	**AM**	**PM**	**ADT**	**ROW**	**25 Feet**	**50 Feet**	**ROW**	**25 Feet**	**50 Feet**
Sierra Nevada Road e/o Old Mammoth Road	35	112	112	0	59.7	55.6	53.6	60.9	56.9	54.8
Sierra Nevada Road w/o Old Mammoth Road	35	207	207	0	60.4	57.4	55.7	61.6	58.6	56.9
Chateau Road e/o Old Mammoth Road	35	112	112	0	59.7	55.6	53.6	60.9	56.9	54.8
Chateau Road w/o Old Mammoth Road	35	160	160	0	61.3	57.2	55.1	62.5	58.4	56.3
Thompson Way s/o Main Street	35	16	16	0	51.3	47.2	45.1	52.5	48.4	46.3
Future With Project										
	Speed	**Traffic Volumes**			**Leq**			**CNEL**		
Roadway/Segment	**MPH**	**AM**	**PM**	**ADT**	**ROW**	**25 Feet**	**50 Feet**	**ROW**	**25 Feet**	**50 Feet**
Sierra Nevada Road e/o Old Mammoth Road	35	140	140	0	60.7	56.6	54.5	61.9	57.8	55.8
Sierra Nevada Road w/o Old Mammoth Road	35	255	255	0	61.3	58.3	56.6	62.5	59.5	57.8
Chateau Road e/o Old Mammoth Road	35	230	230	0	62.8	58.8	56.7	64.1	60.0	57.9
Chateau Road w/o Old Mammoth Road	35	190	190	0	62.0	57.9	55.9	63.2	59.2	57.1
Thompson Way s/o Main Street	35	25	25	0	53.2	49.1	47.1	54.4	50.3	48.3

CNEL

Summary	**25 ft. from ROW**		**At ROW**	
Roadway/Segment	**Project**	**Increment**	**Project**	**Increment**
Sierra Nevada Road e/o Old Mammoth Road	0.9	-	1.0	-
Sierra Nevada Road w/o Old Mammoth Road	0.9	-	0.9	-
Chateau Road e/o Old Mammoth Road	3.1	-	3.2	-
Chateau Road w/o Old Mammoth Road	0.8	-	0.7	-
Thompson Way s/o Main Street	1.9	-	1.9	-

	% of ADT			
Vehicle Type	**Day**	**Eve**	**Night**	**Sub total**
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Mammoth Lakes Zoning Code Update

Scenario 5

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Main Street between Minaret Rd and Mountain Blvd	40			0	-	-	-	-	-	-
Main Street between Mountain Blvd and Post Office	40			0	-	-	-	-	-	-
Main Street between Post Office and Center Street	40			0	-	-	-	-	-	-
Main Street between Center Street and Forest Trail	40			0	-	-	-	-	-	-
Main Street between Forest Trail and Laurel Mountain Road	40			0	-	-	-	-	-	-

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Main Street between Minaret Rd and Mountain Blvd	40	1331	1331	0	70.3	67.1	65.3	71.6	68.3	66.5
Main Street between Mountain Blvd and Post Office	40	1535	1535	0	71.0	67.7	65.9	72.2	68.9	67.1
Main Street between Post Office and Center Street	40	1616	1616	0	70.7	67.7	66.0	71.9	68.9	67.2
Main Street between Center Street and Forest Trail	40	1597	1597	0	70.7	67.7	65.9	71.9	68.9	67.1
Main Street between Forest Trail and Laurel Mountain Road	40	1755	1755	0	71.1	68.1	66.3	72.3	69.3	67.5

Future With Project

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Main Street between Minaret Rd and Mountain Blvd	40	1955	1955	0	72.0	68.8	66.9	73.2	70.0	68.2
Main Street between Mountain Blvd and Post Office	40	1928	1928	0	72.0	68.7	66.9	73.2	69.9	68.1
Main Street between Post Office and Center Street	40	1950	1950	0	71.5	68.5	66.8	72.7	69.7	68.0
Main Street between Center Street and Forest Trail	40	1910	1910	0	71.4	68.4	66.7	72.6	69.7	67.9
Main Street between Forest Trail and Laurel Mountain Road	40	2140	2140	0	71.9	68.9	67.2	73.1	70.2	68.4

CNEL

Summary Roadway/Segment	25 ft. from ROW Project Increment		At ROW Project Increment	
Main Street between Minaret Rd and Mountain Blvd	1.7	-	1.6	-
Main Street between Mountain Blvd and Post Office	1.0	-	1.0	-
Main Street between Post Office and Center Street	0.8	-	0.8	-
Main Street between Center Street and Forest Trail	0.8	-	0.7	-
Main Street between Forest Trail and Laurel Mountain Road	0.9	-	0.8	-

% of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Mammoth Lakes Zoning Code Update

Scenario 5

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Main Street between Laurel Mountain Road and Old Mammoth Ro	40			0	-	-	-	-	-	-
Main Street between Old Mammoth Road and Sierra Park Blvd	40			0	-	-	-	-	-	-
Main Street between Sierra Park Blvd and Thompson Way	40			0	-	-	-	-	-	-
Old Mammoth Road between Main Street and Tavern Road	35			0	-	-	-	-	-	-
Old Mammoth Road between Tavern Road and Sierra Nevada Ro	35			0	-	-	-	-	-	-

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Main Street between Laurel Mountain Road and Old Mammoth Ro	40	1530	1530	0	70.5	67.5	65.7	71.7	68.7	66.9
Main Street between Old Mammoth Road and Sierra Park Blvd	40	768	768	0	67.5	64.5	62.7	68.7	65.7	63.9
Main Street between Sierra Park Blvd and Thompson Way	40	737	737	0	67.3	64.3	62.6	68.5	65.5	63.8
Old Mammoth Road between Main Street and Tavern Road	35	1137	1137	0	68.9	65.3	63.4	70.1	66.6	64.6
Old Mammoth Road between Tavern Road and Sierra Nevada Ro	35	1156	1156	0	69.0	65.4	63.5	70.2	66.6	64.7

Future With Project

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Main Street between Laurel Mountain Road and Old Mammoth Ro	40	1785	1785	0	71.1	68.1	66.4	72.4	69.4	67.6
Main Street between Old Mammoth Road and Sierra Park Blvd	40	838	838	0	67.9	64.9	63.1	69.1	66.1	64.3
Main Street between Sierra Park Blvd and Thompson Way	40	785	785	0	67.6	64.6	62.8	68.8	65.8	64.0
Old Mammoth Road between Main Street and Tavern Road	35	1450	1450	0	70.0	66.4	64.5	71.2	67.6	65.7
Old Mammoth Road between Tavern Road and Sierra Nevada Ro	35	1595	1595	0	70.4	66.8	64.9	71.6	68.0	66.1

CNEL

Summary Roadway/Segment	25 ft. from ROW Project	Increment	At ROW Project	Increment
Main Street between Laurel Mountain Road and Old Mammoth Ro	0.7	-	0.7	-
Main Street between Old Mammoth Road and Sierra Park Blvd	0.4	-	0.4	-
Main Street between Sierra Park Blvd and Thompson Way	0.3	-	0.3	-
Old Mammoth Road between Main Street and Tavern Road	1.0	-	1.1	-
Old Mammoth Road between Tavern Road and Sierra Nevada Ro	1.4	-	1.4	-

% of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Mammoth Lakes Zoning Code Update

Scenario 5

Existing											
	Speed	Traffic Volumes			Leq			CNEL			
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet	
Old Mammoth Road between Sierra Nevada Road and Meridian B	35			0	-	-	-	-	-	-	
Old Mammoth Road between Meridian Blvd and Chateau Road	35			0	-	-	-	-	-	-	
Old Mammoth Road between Chateau Road and Minaret Road	35			0	-	-	-	-	-	-	
Meridian Boulevard between Minaret Rd and Old Mammoth Road	40			0	-	-	-	-	-	-	
Meridian Boulevard between Old Mammoth Road and Sierra Park	40			0	-	-	-	-	-	-	
Existing											
	Speed	Traffic Volumes			Leq			CNEL			
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet	
Old Mammoth Road between Sierra Nevada Road and Meridian B	35	1066	1066	0	69.5	65.4	63.4	70.7	66.6	64.6	
Old Mammoth Road between Meridian Blvd and Chateau Road	35	817	817	0	68.3	64.3	62.2	69.6	65.5	63.4	
Old Mammoth Road between Chateau Road and Minaret Road	35	499	499	0	65.3	61.8	59.8	66.6	63.0	61.1	
Meridian Boulevard between Minaret Rd and Old Mammoth Road	40	1140	1140	0	69.7	66.4	64.6	70.9	67.6	65.8	
Meridian Boulevard between Old Mammoth Road and Sierra Park	40	1181	1181	0	69.8	66.6	64.8	71.0	67.8	66.0	
Future With Project											
	Speed	Traffic Volumes			Leq			CNEL			
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet	
Old Mammoth Road between Sierra Nevada Road and Meridian B	35	1498	1498	0	71.0	66.9	64.8	72.2	68.1	66.1	
Old Mammoth Road between Meridian Blvd and Chateau Road	35	1263	1263	0	70.2	66.2	64.1	71.5	67.4	65.3	
Old Mammoth Road between Chateau Road and Minaret Road	35	900	900	0	67.9	64.3	62.4	69.1	65.5	63.6	
Meridian Boulevard between Minaret Rd and Old Mammoth Road	40	1505	1505	0	70.9	67.6	65.8	72.1	68.9	67.0	
Meridian Boulevard between Old Mammoth Road and Sierra Park	40	1465	1465	0	70.8	67.5	65.7	72.0	68.7	66.9	

CNEL

Summary	25 ft. from ROW		At ROW	
Roadway/Segment	Project Increment		Project Increment	
Old Mammoth Road between Sierra Nevada Road and Meridian B	1.5	-	1.5	-
Old Mammoth Road between Meridian Blvd and Chateau Road	1.9	-	1.9	-
Old Mammoth Road between Chateau Road and Minaret Road	2.5	-	2.5	-
Meridian Boulevard between Minaret Rd and Old Mammoth Road	1.3	-	1.2	-
Meridian Boulevard between Old Mammoth Road and Sierra Park	0.9	-	1.0	-

% of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Mammoth Lakes Zoning Code Update

Scenario 5

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Minaret Road between Fores Trail and Lake Mary Road	35			0	-	-	-	-	-	-
Minaret Road between Lake Mary Road and Meridian Blvd	35			0	-	-	-	-	-	-
Minaret Road between Meridian Blvd and Old Mammoth Road	35			0	-	-	-	-	-	-
Lake Mary Road w/o Minaret Road	40			0	-	-	-	-	-	-
Fairway Drive s/o Old Mammoth Road	35			0	-	-	-	-	-	-

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Minaret Road between Fores Trail and Lake Mary Road	35	1068	1068	0	66.9	64.2	62.6	68.1	65.4	63.8
Minaret Road between Lake Mary Road and Meridian Blvd	35	874	874	0	68.6	64.6	62.5	69.9	65.8	63.7
Minaret Road between Meridian Blvd and Old Mammoth Road	35	456	456	0	65.8	61.7	59.7	67.0	63.0	60.9
Lake Mary Road w/o Minaret Road	40	890	890	0	68.6	65.4	63.5	69.8	66.6	64.7
Fairway Drive s/o Old Mammoth Road	35	122	122	0	60.1	56.0	54.0	61.3	57.2	55.2

Future With Project

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Minaret Road between Fores Trail and Lake Mary Road	35	1333	1333	0	67.8	65.2	63.5	69.0	66.4	64.7
Minaret Road between Lake Mary Road and Meridian Blvd	35	1368	1368	0	70.6	66.5	64.4	71.8	67.7	65.7
Minaret Road between Meridian Blvd and Old Mammoth Road	35	858	858	0	68.6	64.5	62.4	69.8	65.7	63.6
Lake Mary Road w/o Minaret Road	40	1845	1845	0	71.8	68.5	66.7	73.0	69.7	67.9
Fairway Drive s/o Old Mammoth Road	35	670	670	0	67.5	63.4	61.3	68.7	64.6	62.6

CNEL

Summary Roadway/Segment	25 ft. from ROW Project Increment		At ROW Project Increment	
Minaret Road between Fores Trail and Lake Mary Road	1.0	-	0.9	-
Minaret Road between Lake Mary Road and Meridian Blvd	1.9	-	1.9	-
Minaret Road between Meridian Blvd and Old Mammoth Road	2.7	-	2.8	-
Lake Mary Road w/o Minaret Road	3.1	-	3.2	-
Fairway Drive s/o Old Mammoth Road	7.4	-	7.4	-

% of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Mammoth Lakes Zoning Code Update

Scenario 5

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Mountain Boulevard north of Main Street	35			0	-	-	-	-	-	-
Mountain Boulevard s/o Main Street	35			0	-	-	-	-	-	-
Tavern Road w/o Olad Mammoth Road	35			0	-	-	-	-	-	-
Tavern Road e/o Olad Mammoth Road	35			0	-	-	-	-	-	-
Sierra Park Road between Main Street and Meridian Blvd	35			0	-	-	-	-	-	-

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Mountain Boulevard north of Main Street	35	107	107	0	59.5	55.4	53.4	60.7	56.7	54.6
Mountain Boulevard s/o Main Street	35	79	79	0	58.2	54.1	52.1	59.4	55.3	53.3
Tavern Road w/o Olad Mammoth Road	35	107	107	0	57.5	54.6	52.8	58.7	55.8	54.0
Tavern Road e/o Olad Mammoth Road	35	69	69	0	55.6	52.7	50.9	56.8	53.9	52.1
Sierra Park Road between Main Street and Meridian Blvd	35	211	211	0	62.5	58.4	56.3	63.7	59.6	57.5

Future With Project

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Mountain Boulevard north of Main Street	35	155	155	0	61.1	57.1	55.0	62.3	58.3	56.2
Mountain Boulevard s/o Main Street	35	120	120	0	60.0	55.9	53.9	61.2	57.2	55.1
Tavern Road w/o Olad Mammoth Road	35	225	225	0	60.8	57.8	56.0	62.0	59.0	57.2
Tavern Road e/o Olad Mammoth Road	35	95	95	0	57.0	54.0	52.3	58.2	55.3	53.5
Sierra Park Road between Main Street and Meridian Blvd	35	290	290	0	63.8	59.8	57.7	65.1	61.0	58.9

CNEL

Summary Roadway/Segment	25 ft. from ROW Project	 Increment	At ROW Project	 Increment
Mountain Boulevard north of Main Street	1.6	-	1.6	-
Mountain Boulevard s/o Main Street	1.9	-	1.8	-
Tavern Road w/o Olad Mammoth Road	3.2	-	3.3	-
Tavern Road e/o Olad Mammoth Road	1.4	-	1.4	-
Sierra Park Road between Main Street and Meridian Blvd	1.4	-	1.4	-

% of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Mammoth Lakes Zoning Code Update

Scenario 5

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Sierra Nevada Road e/o Old Mammoth Road	35			0	-	-	-	-	-	-
Sierra Nevada Road w/o Old Mammoth Road	35			0	-	-	-	-	-	-
Chateau Road e/o Old Mammoth Road	35			0	-	-	-	-	-	-
Chateau Road w/o Old Mammoth Road	35			0	-	-	-	-	-	-
Thompson Way s/o Main Street	35			0	-	-	-	-	-	-

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Sierra Nevada Road e/o Old Mammoth Road	35	112	112	0	59.7	55.6	53.6	60.9	56.9	54.8
Sierra Nevada Road w/o Old Mammoth Road	35	207	207	0	60.4	57.4	55.7	61.6	58.6	56.9
Chateau Road e/o Old Mammoth Road	35	112	112	0	59.7	55.6	53.6	60.9	56.9	54.8
Chateau Road w/o Old Mammoth Road	35	160	160	0	61.3	57.2	55.1	62.5	58.4	56.3
Thompson Way s/o Main Street	35	16	16	0	51.3	47.2	45.1	52.5	48.4	46.3

Future With Project

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Sierra Nevada Road e/o Old Mammoth Road	35	145	145	0	60.8	56.8	54.7	62.1	58.0	55.9
Sierra Nevada Road w/o Old Mammoth Road	35	280	280	0	61.7	58.7	57.0	62.9	59.9	58.2
Chateau Road e/o Old Mammoth Road	35	235	235	0	62.9	58.9	56.8	64.1	60.1	58.0
Chateau Road w/o Old Mammoth Road	35	250	250	0	63.2	59.1	57.1	64.4	60.3	58.3
Thompson Way s/o Main Street	35	10	10	0	49.2	45.2	43.1	50.4	46.4	44.3

CNEL

Summary Roadway/Segment	25 ft. from ROW Project Increment		At ROW Project Increment	
Sierra Nevada Road e/o Old Mammoth Road	1.1	-	1.2	-
Sierra Nevada Road w/o Old Mammoth Road	1.3	-	1.3	-
Chateau Road e/o Old Mammoth Road	3.2	-	3.2	-
Chateau Road w/o Old Mammoth Road	1.9	-	1.9	-
Thompson Way s/o Main Street	-2.0	-	-2.1	-

% of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Town of Mammoth Lakes Land Use Element and Zoning Code Amendments/Mobility Element Update

Scenario 6: Land Use Element/Zoning Code Amendments with Mobility Element Update

Existing											
	Speed	Traffic Volumes			Leq			CNEL			
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet	
Main Street between Minaret Rd and Mountain Blvd	40			0	-	-	-	-	-	-	
Main Street between Mountain Blvd and Post Office	40			0	-	-	-	-	-	-	
Main Street between Post Office and Center Street	40			0	-	-	-	-	-	-	
Main Street between Center Street and Forest Trail	40			0	-	-	-	-	-	-	
Main Street between Forest Trail and Laurel Mountain Road	40			0	-	-	-	-	-	-	
Existing											
	Speed	Traffic Volumes			Leq			CNEL			
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet	
Main Street between Minaret Rd and Mountain Blvd	40	1331	1331	0	70.3	67.1	65.3	71.6	68.3	66.5	
Main Street between Mountain Blvd and Post Office	40	1535	1535	0	71.0	67.7	65.9	72.2	68.9	67.1	
Main Street between Post Office and Center Street	40	1616	1616	0	70.7	67.7	66.0	71.9	68.9	67.2	
Main Street between Center Street and Forest Trail	40	1597	1597	0	70.7	67.7	65.9	71.9	68.9	67.1	
Main Street between Forest Trail and Laurel Mountain Road	40	1755	1755	0	71.1	68.1	66.3	72.3	69.3	67.5	
Future With Project											
	Speed	Traffic Volumes			Leq			CNEL			
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet	
Main Street between Minaret Rd and Mountain Blvd	40	2070	2070	0	72.3	69.0	67.2	73.5	70.2	68.4	
Main Street between Mountain Blvd and Post Office	40	2200	2200	0	72.5	69.3	67.5	73.7	70.5	68.7	
Main Street between Post Office and Center Street	40	2390	2390	0	72.4	69.4	67.7	73.6	70.6	68.9	
Main Street between Center Street and Forest Trail	40	2315	2315	0	72.3	69.3	67.5	73.5	70.5	68.7	
Main Street between Forest Trail and Laurel Mountain Road	40	2465	2465	0	72.5	69.6	67.8	73.8	70.8	69.0	

CNEL

Summary	25 ft. from ROW		At ROW	
Roadway/Segment	Project Increment		Project Increment	
Main Street between Minaret Rd and Mountain Blvd	1.9	-	1.9	-
Main Street between Mountain Blvd and Post Office	1.6	-	1.5	-
Main Street between Post Office and Center Street	1.7	-	1.7	-
Main Street between Center Street and Forest Trail	1.6	-	1.6	-
Main Street between Forest Trail and Laurel Mountain Road	1.5	-	1.5	-

% of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Town of Mammoth Lakes Land Use Element and Zoning Code Amendments/Mobility Element Update

Scenario 6: Land Use Element/Zoning Code Amendments with Mobility Element Update

Existing											
	Speed	Traffic Volumes			Leq			CNEL			
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet	
Main Street between Laurel Mountain Road and Old Mammoth Ro	40			0	-	-	-	-	-	-	
Main Street between Old Mammoth Road and Sierra Park Blvd	40			0	-	-	-	-	-	-	
Main Street between Sierra Park Blvd and Thompson Way	40			0	-	-	-	-	-	-	
Old Mammoth Road between Main Street and Tavern Road	35			0	-	-	-	-	-	-	
Old Mammoth Road between Tavern Road and Sierra Nevada Ro	35			0	-	-	-	-	-	-	
Existing											
	Speed	Traffic Volumes			Leq			CNEL			
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet	
Main Street between Laurel Mountain Road and Old Mammoth Ro	40	1530	1530	0	70.5	67.5	65.7	71.7	68.7	66.9	
Main Street between Old Mammoth Road and Sierra Park Blvd	40	768	768	0	67.5	64.5	62.7	68.7	65.7	63.9	
Main Street between Sierra Park Blvd and Thompson Way	40	737	737	0	67.3	64.3	62.6	68.5	65.5	63.8	
Old Mammoth Road between Main Street and Tavern Road	35	1137	1137	0	68.9	65.3	63.4	70.1	66.6	64.6	
Old Mammoth Road between Tavern Road and Sierra Nevada Ro	35	1156	1156	0	69.0	65.4	63.5	70.2	66.6	64.7	
Future With Project											
	Speed	Traffic Volumes			Leq			CNEL			
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet	
Main Street between Laurel Mountain Road and Old Mammoth Ro	40	2035	2035	0	71.7	68.7	67.0	72.9	69.9	68.2	
Main Street between Old Mammoth Road and Sierra Park Blvd	40	918	918	0	68.2	65.3	63.5	69.5	66.5	64.7	
Main Street between Sierra Park Blvd and Thompson Way	40	850	850	0	67.9	64.9	63.2	69.1	66.1	64.4	
Old Mammoth Road between Main Street and Tavern Road	35	1505	1505	0	70.1	66.6	64.6	71.3	67.8	65.9	
Old Mammoth Road between Tavern Road and Sierra Nevada Ro	35	1533	1533	0	70.2	66.6	64.7	71.4	67.9	65.9	

CNEL

Summary	25 ft. from ROW		At ROW	
Roadway/Segment	Project Increment		Project Increment	
Main Street between Laurel Mountain Road and Old Mammoth Ro	1.2	-	1.2	-
Main Street between Old Mammoth Road and Sierra Park Blvd	0.8	-	0.8	-
Main Street between Sierra Park Blvd and Thompson Way	0.6	-	0.6	-
Old Mammoth Road between Main Street and Tavern Road	1.2	-	1.2	-
Old Mammoth Road between Tavern Road and Sierra Nevada Ro	1.3	-	1.2	-

% of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Town of Mammoth Lakes Land Use Element and Zoning Code Amendments/Mobility Element Update

Scenario 6: Land Use Element/Zoning Code Amendments with Mobility Element Update

Existing										
	Speed	Traffic Volumes			Leq			CNEL		
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Old Mammoth Road between Sierra Nevada Road and Meridian B	35			0	-	-	-	-	-	-
Old Mammoth Road between Meridian Blvd and Chateau Road	35			0	-	-	-	-	-	-
Old Mammoth Road between Chateau Road and Minaret Road	35			0	-	-	-	-	-	-
Meridian Boulevard between Minaret Rd and Old Mammoth Road	40			0	-	-	-	-	-	-
Meridian Boulevard between Old Mammoth Road and Sierra Park	40			0	-	-	-	-	-	-
Existing										
	Speed	Traffic Volumes			Leq			CNEL		
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Old Mammoth Road between Sierra Nevada Road and Meridian B	35	1066	1066	0	69.5	65.4	63.4	70.7	66.6	64.6
Old Mammoth Road between Meridian Blvd and Chateau Road	35	817	817	0	68.3	64.3	62.2	69.6	65.5	63.4
Old Mammoth Road between Chateau Road and Minaret Road	35	499	499	0	65.3	61.8	59.8	66.6	63.0	61.1
Meridian Boulevard between Minaret Rd and Old Mammoth Road	40	1140	1140	0	69.7	66.4	64.6	70.9	67.6	65.8
Meridian Boulevard between Old Mammoth Road and Sierra Park	40	1181	1181	0	69.8	66.6	64.8	71.0	67.8	66.0
Future With Project										
	Speed	Traffic Volumes			Leq			CNEL		
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Old Mammoth Road between Sierra Nevada Road and Meridian B	35	1335	1335	0	70.5	66.4	64.3	71.7	67.6	65.6
Old Mammoth Road between Meridian Blvd and Chateau Road	35	1060	1060	0	69.5	65.4	63.3	70.7	66.6	64.6
Old Mammoth Road between Chateau Road and Minaret Road	35	758	758	0	67.2	63.6	61.7	68.4	64.8	62.9
Meridian Boulevard between Minaret Rd and Old Mammoth Road	40	1290	1290	0	70.2	67.0	65.1	71.4	68.2	66.4
Meridian Boulevard between Old Mammoth Road and Sierra Park	40	1263	1263	0	70.1	66.9	65.0	71.3	68.1	66.3

CNEL

Summary	25 ft. from ROW		At ROW	
Roadway/Segment	Project	Increment	Project	Increment
Old Mammoth Road between Sierra Nevada Road and Meridian B	1.0	-	1.0	-
Old Mammoth Road between Meridian Blvd and Chateau Road	1.1	-	1.1	-
Old Mammoth Road between Chateau Road and Minaret Road	1.8	-	1.8	-
Meridian Boulevard between Minaret Rd and Old Mammoth Road	0.6	-	0.5	-
Meridian Boulevard between Old Mammoth Road and Sierra Park	0.3	-	0.3	-

% of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Town of Mammoth Lakes Land Use Element and Zoning Code Amendments/Mobility Element Update

Scenario 6: Land Use Element/Zoning Code Amendments with Mobility Element Update

Existing										
	Speed	Traffic Volumes			Leq			CNEL		
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Minaret Road between Forest Trail and Lake Mary Road	35			0	-	-	-	-	-	-
Minaret Road between Lake Mary Road and Meridian Blvd	35			0	-	-	-	-	-	-
Minaret Road between Meridian Blvd and Old Mammoth Road	35			0	-	-	-	-	-	-
Lake Mary Road w/o Minaret Road	40			0	-	-	-	-	-	-
Fairway Drive s/o Old Mammoth Road	35			0	-	-	-	-	-	-
Existing										
	Speed	Traffic Volumes			Leq			CNEL		
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Minaret Road between Forest Trail and Lake Mary Road	35	1068	1068	0	66.9	64.2	62.6	68.1	65.4	63.8
Minaret Road between Lake Mary Road and Meridian Blvd	35	874	874	0	68.6	64.6	62.5	69.9	65.8	63.7
Minaret Road between Meridian Blvd and Old Mammoth Road	35	456	456	0	65.8	61.7	59.7	67.0	63.0	60.9
Lake Mary Road w/o Minaret Road	40	890	890	0	68.6	65.4	63.5	69.8	66.6	64.7
Fairway Drive s/o Old Mammoth Road	35	122	122	0	60.1	56.0	54.0	61.3	57.2	55.2
Future With Project										
	Speed	Traffic Volumes			Leq			CNEL		
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Minaret Road between Forest Trail and Lake Mary Road	35	1352	1352	0	67.9	65.2	63.6	69.1	66.4	64.8
Minaret Road between Lake Mary Road and Meridian Blvd	35	1188	1188	0	70.0	65.9	63.8	71.2	67.1	65.0
Minaret Road between Meridian Blvd and Old Mammoth Road	35	738	738	0	67.9	63.8	61.8	69.1	65.0	63.0
Lake Mary Road w/o Minaret Road	40	1790	1790	0	71.6	68.4	66.6	72.8	69.6	67.8
Fairway Drive s/o Old Mammoth Road	35	500	500	0	66.2	62.1	60.1	67.4	63.4	61.3

CNEL

Summary	25 ft. from ROW		At ROW	
Roadway/Segment	Project Increment		Project Increment	
Minaret Road between Forest Trail and Lake Mary Road	1.0	-	1.0	-
Minaret Road between Lake Mary Road and Meridian Blvd	1.3	-	1.3	-
Minaret Road between Meridian Blvd and Old Mammoth Road	2.0	-	2.1	-
Lake Mary Road w/o Minaret Road	3.0	-	3.0	-
Fairway Drive s/o Old Mammoth Road	6.2	-	6.1	-

% of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Town of Mammoth Lakes Land Use Element and Zoning Code Amendments/Mobility Element Update

Scenario 6: Land Use Element/Zoning Code Amendments with Mobility Element Update

Existing											
	Speed	Traffic Volumes			Leq			CNEL			
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet	
Mountain Boulevard n/o Main Street	35			0	-	-	-	-	-	-	
Mountain Boulevard s/o Main Street	35			0	-	-	-	-	-	-	
Tavern Road w/o Old Mammoth Road	35			0	-	-	-	-	-	-	
Tavern Road e/o Old Mammoth Road	35			0	-	-	-	-	-	-	
Sierra Park Road between Main Street and Meridian Blvd	35			0	-	-	-	-	-	-	
Existing											
	Speed	Traffic Volumes			Leq			CNEL			
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet	
Mountain Boulevard n/o Main Street	35	107	107	0	59.5	55.4	53.4	60.7	56.7	54.6	
Mountain Boulevard s/o Main Street	35	79	79	0	58.2	54.1	52.1	59.4	55.3	53.3	
Tavern Road w/o Old Mammoth Road	35	107	107	0	57.5	54.6	52.8	58.7	55.8	54.0	
Tavern Road e/o Old Mammoth Road	35	69	69	0	55.6	52.7	50.9	56.8	53.9	52.1	
Sierra Park Road between Main Street and Meridian Blvd	35	211	211	0	62.5	58.4	56.3	63.7	59.6	57.5	
Future With Project											
	Speed	Traffic Volumes			Leq			CNEL			
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet	
Mountain Boulevard n/o Main Street	35	160	160	0	61.3	57.2	55.1	62.5	58.4	56.3	
Mountain Boulevard s/o Main Street	35	125	125	0	60.2	56.1	54.1	61.4	57.3	55.3	
Tavern Road w/o Old Mammoth Road	35	205	205	0	60.4	57.4	55.6	61.6	58.6	56.8	
Tavern Road e/o Old Mammoth Road	35	90	90	0	56.8	53.8	52.1	58.0	55.0	53.3	
Sierra Park Road between Main Street and Meridian Blvd	35	268	268	0	63.5	59.4	57.4	64.7	60.6	58.6	

CNEL

Summary	25 ft. from ROW		At ROW	
Roadway/Segment	Project	Increment	Project	Increment
Mountain Boulevard n/o Main Street	1.7	-	1.8	-
Mountain Boulevard s/o Main Street	2.0	-	2.0	-
Tavern Road w/o Old Mammoth Road	2.8	-	2.9	-
Tavern Road e/o Old Mammoth Road	1.1	-	1.2	-
Sierra Park Road between Main Street and Meridian Blvd	1.0	-	1.0	-

% of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Project: Town of Mammoth Lakes Land Use Element and Zoning Code Amendments/Mobility Element Update

Scenario 6: Land Use Element/Zoning Code Amendments with Mobility Element Update

Existing										
	Speed	Traffic Volumes			Leq			CNEL		
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Sierra Nevada Road e/o Old Mammoth Road	35			0	-	-	-	-	-	-
Sierra Nevada Road w/o Old Mammoth Road	35			0	-	-	-	-	-	-
Chateau Road e/o Old Mammoth Road	35			0	-	-	-	-	-	-
Chateau Road w/o Old Mammoth Road	35			0	-	-	-	-	-	-
Thompson Way s/o Main Street	35			0	-	-	-	-	-	-
Existing										
	Speed	Traffic Volumes			Leq			CNEL		
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Sierra Nevada Road e/o Old Mammoth Road	35	112	112	0	59.7	55.6	53.6	60.9	56.9	54.8
Sierra Nevada Road w/o Old Mammoth Road	35	207	207	0	60.4	57.4	55.7	61.6	58.6	56.9
Chateau Road e/o Old Mammoth Road	35	112	112	0	59.7	55.6	53.6	60.9	56.9	54.8
Chateau Road w/o Old Mammoth Road	35	160	160	0	61.3	57.2	55.1	62.5	58.4	56.3
Thompson Way s/o Main Street	35	16	16	0	51.3	47.2	45.1	52.5	48.4	46.3
Future With Project										
	Speed	Traffic Volumes			Leq			CNEL		
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Sierra Nevada Road e/o Old Mammoth Road	35	145	145	0	60.8	56.8	54.7	62.1	58.0	55.9
Sierra Nevada Road w/o Old Mammoth Road	35	280	280	0	61.7	58.7	57.0	62.9	59.9	58.2
Chateau Road e/o Old Mammoth Road	35	210	210	0	62.4	58.4	56.3	63.7	59.6	57.5
Chateau Road w/o Old Mammoth Road	35	210	210	0	62.4	58.4	56.3	63.7	59.6	57.5
Thompson Way s/o Main Street	35	25	25	0	53.2	49.1	47.1	54.4	50.3	48.3

CNEL

Summary	25 ft. from ROW		At ROW	
Roadway/Segment	Project	Increment	Project	Increment
Sierra Nevada Road e/o Old Mammoth Road	1.1	-	1.2	-
Sierra Nevada Road w/o Old Mammoth Road	1.3	-	1.3	-
Chateau Road e/o Old Mammoth Road	2.7	-	2.8	-
Chateau Road w/o Old Mammoth Road	1.2	-	1.2	-
Thompson Way s/o Main Street	1.9	-	1.9	-

% of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Appendix E

Public Services

Appendix E Public Services

E.1 Mammoth Lakes Fire Department

E.2 Mammoth Lakes Police Department

E.3 Mammoth Lakes Recreation Department

E.4 Mammoth Unified School District

E.5 Mono County Library Administration

E.1 Mammoth Lakes Fire Department

COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
P.O. BOX 1609, MAMMOTH LAKES, CA 93546
PHONE (760) 934-8989 | FAX (760) 934-8608
WWW.TOWNOFMAMMOTHLAKES.CA.GOV

August 21, 2015

Thom Heller, Fire Marshal/Division Chief
MAMMOTH LAKES FIRE DEPARTMENT
P.O. Box 5
3150 Main Street
Mammoth Lakes, California 93546

RE: REQUEST FOR INFORMATION REGARDING EXISTING FIRE PROTECTION SERVICES AND PLANNED IMPROVEMENTS/CHANGES

Dear Mr. Heller:

As you know, the Town Mammoth Lakes Planning Division is preparing an Environmental Impact Report (EIR) for the General Plan Land Use Element/Zoning Code Amendments and Mobility Element Update (the Project) pursuant to the California Environmental Quality Act (CEQA). The EIR will include an assessment of the Project's potential impacts on fire and emergency facilities and services. The Town acknowledges receipt of your letter dated June 27, 2015 in which scoping comments are provided. In order to adequately identify and assess the full range of the Project's potential impacts and to address comments raised, early consultation with your agency is being conducted in accordance with Section 15083 of the State CEQA Guidelines.

The Project consists of several amendments to the General Plan Land Use Element and to the Zoning Code. First, is to allow up to 2.0 FAR and to remove units and rooms per acre development standards in the approximately 122-acres of commercially designated lands along Main Street and Old Mammoth Road (see Attachment 1, *Project Area for Land Use Element and Zoning Code Amendments)*. The change would allow an approximate increase of up to 313 residential units, 430,018 square feet of commercial floor area compared to the existing General Plan buildout estimate, and up to 951 hotel rooms, compared to 524 to 1,048 hotel rooms allowed under the current General Plan buildout estimate. The Project would include Zoning Code Amendments to the commercial development standards to be consistent with the General Plan Amendments. The proposed Land Use Element amendments also include a change to the policy and text associated with regulating population growth from a People At One Time (PAOT) approach to an impact assessment based approach. Finally, proposed changes also include deleting the Community Benefits Incentive Zoning (CBIZ) and modifying Transfer of Development Rights (TDR) policies in the commercial lands within the Urban Growth Boundary.

The Project also includes adoption of a Mobility Element Update that would involve improvements to the local and regional transportation network within the Municipal Boundary and would establish a multimodal framework for the Town. The primary purpose is

to create a connected, accessible, uncongested, and safe circulation system. As shown in Figure 3-1, Complete Streets, and Figure 3-2, Vehicle Network, the Mobility Element Update identifies a Complete Streets network, which includes physical improvements to the local and regional transportation systems. For example, new roadway extensions and segments would be constructed including the consolidation of Main Street (vacation of frontage road, turn lanes, etc.), new north-south access via Thompsons Way, extension of Tavern Road to the east, extension of Sierra Nevada Road to the east, connections to the Shady Rest site, extension of Callahan Way to the south, and the extension of 7B (Sierra Star) to connect Minaret Road to East Bear Lake Drive and to Main Street. These improvements in connectivity would likely improve traffic circulation and emergency access. Proposed street improvements would enhance connectivity throughout the Town, reduce pedestrian/vehicle conflicts, create a more active street front on Main Street, and increase the overall capacity of the Town's road system. The Mobility Element Update also identifies opportunities for new signals and roundabouts throughout Town. Roadway design would be consistent with Town of Mammoth Lakes standards, which are intended to standardize street design and improve road safety.

For more detailed information on the Project, the Initial Study prepared for the Project, can be found on the Town's website at: http://www.townofmammothlakes.ca.gov/index.aspx?nid=618

Given the conceptual and long-term nature of the Project, the EIR will be prepared as a Program EIR pursuant to Section 15168 of the CEQA Guidelines. Program EIRs contain less detail than typical project-level EIRs because the level of detail in the environmental analysis is reflective of the level of detail in the program description itself. As a Program EIR, certain impacts identified and mitigation measures recommended will be inherently limited in specificity due to the conceptual nature of projected development and the broad applicability of proposed policy changes. As such, subsequent more focused environmental review may take place as individual projects are proposed.

As fire protection in the Town of Mammoth Lakes is provided by the Mammoth Lakes Fire Department, we are requesting information from your agency with regard to existing facilities and operations in order to evaluate impacts on fire protection facilities and services. Please provide or confirm the following information regarding the Mammoth Lakes Fire Department and issues relating to the provision of fire protection facilities and services for the Project and surrounding area, as appropriate:

Please confirm the following information:

1. The Mammoth Lakes Fire Department is a fire protection district that provides fire protection and emergency response to the Town of Mammoth Lakes. Additionally, the Department provides fire protection services and emergency response to the upper middle fork of the San Joaquin, Red's Meadow, and Devil's Postpile National Monument

(DEPO) located in Madera County. The Mammoth Lakes Fire Department currently utilizes approximately 8 full time and approximately 45 part time personnel.

2. Mammoth Lakes Fire Department facilities include two fire stations, with Station No. 1 housing all administrative offices. The Department's training tower is located at Station No. 2. The Department's apparatus consists of:

Station No. 1	Station No. 2
2 Type I Engines	2 Type I Engines
Type III Engine	
100 ft Aerial Platform	
3000 gal Water Tender	
BLS Ambulance	
Type II US&R Trailer	
Type II HazMat Trailer	

Additional vehicles and equipment include; 3 command vehicles, a 1 ton crew cab pickup, Moorbark brush chipper and Bobcat Toolcat used by the fuels management crew, a Case 620 loader for snow removal and various utility vehicles

Please provide the following information regarding fire protection operations:

3. We understand that Fire Station No.1, the primary station, was remodeled and expanded in 2007. What new facilities did the expansion include? What is the size of Fire Station No.1 and Fire Station No. 2?

4. Please provide information on emergency incidents and responses times as follows:

    a. Most recent data on yearly emergency incidents for each fire station serving the Town (broken up by type) and associated average response times. Does this vary by area within the Town?

    b. What is the Fire Department's goal for response time for fire and emergency services within Mammoth? Does it vary by area (e.g. downtown area versus areas with more limited access?)

5. Describe any mutual aid-agreements.

6. Describe any planned improvements to the fire protection facilities (i.e., expansion, new facilities, additional staffing, etc.), if applicable.

7. Please note any relevant Department requirements for development in the commercial districts including, but not limited to:

a. Fire flow requirements;

b. Fire protection devices (e.g., sprinklers, alarms);

c. Fire access (including ingress/egress, turning radii, driveway width, grading, etc.);

d. Fire hydrants and spacing; and

e. Fuel Modification.

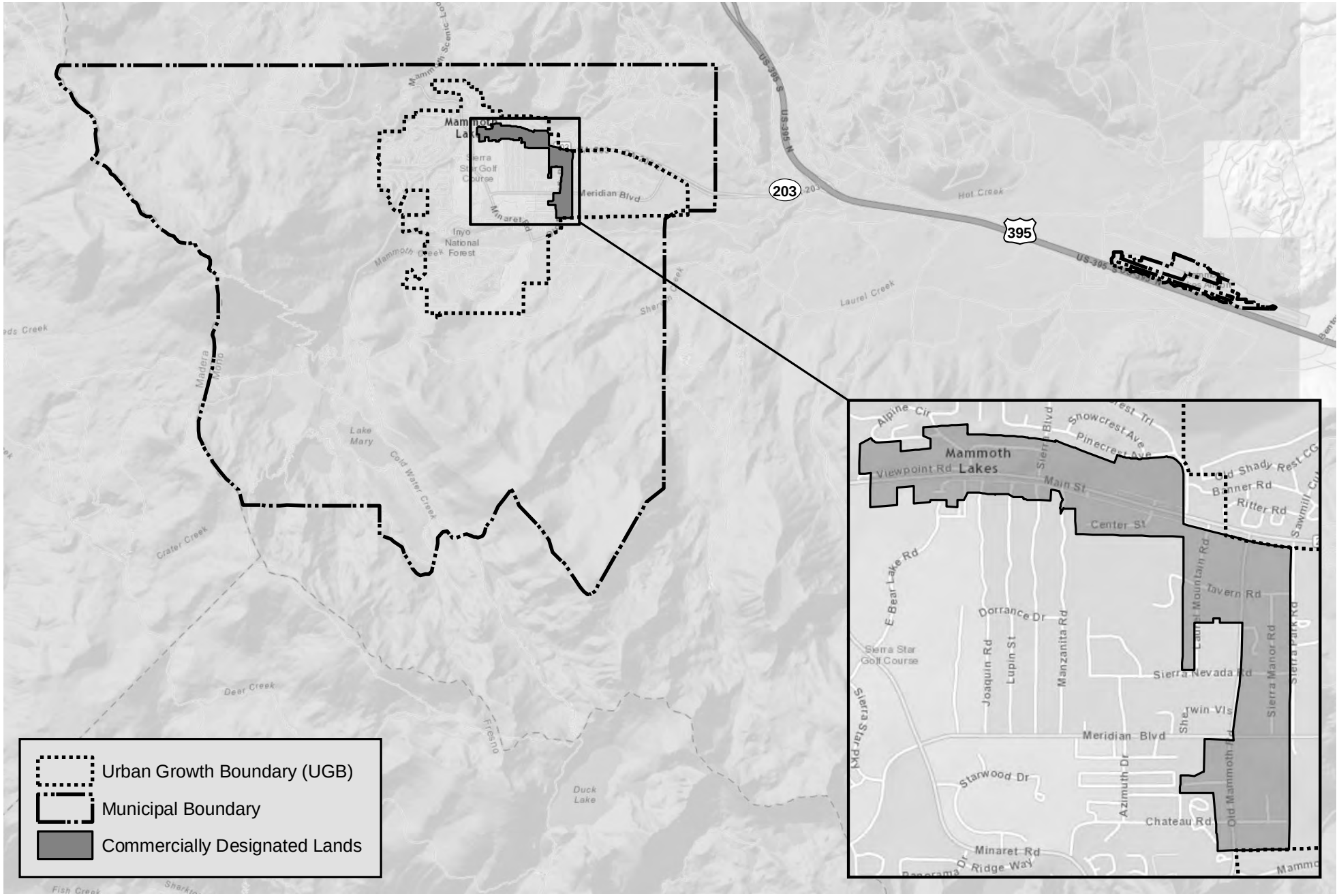
At your earliest convenience we would like to set up a conference call to discuss the Project, the requested information outlined in this letter, and your June 27 comment letter. We will follow up in an email over the next week to set up a time to schedule the call. If you have any questions or require additional information, please do not hesitate to contact me at (760) 934-8989 ext. 251.

Sincerely,

Sandra Moberly

Sandra Moberly
Planning Manager

Attachments: Attachment 1, Project Area for Land Use Element and Zoning Code Amendments
Attachment 2, Figure 3.1 - Complete Streets
Attachment 3, Figure 3.2 – Vehicle Network



PCR

Project Areas

Mammoth Lakes Zoning Code Update

Source: ESRI Street Map, 2009; PCR Services Corporation, 2015.

FIGURE

1

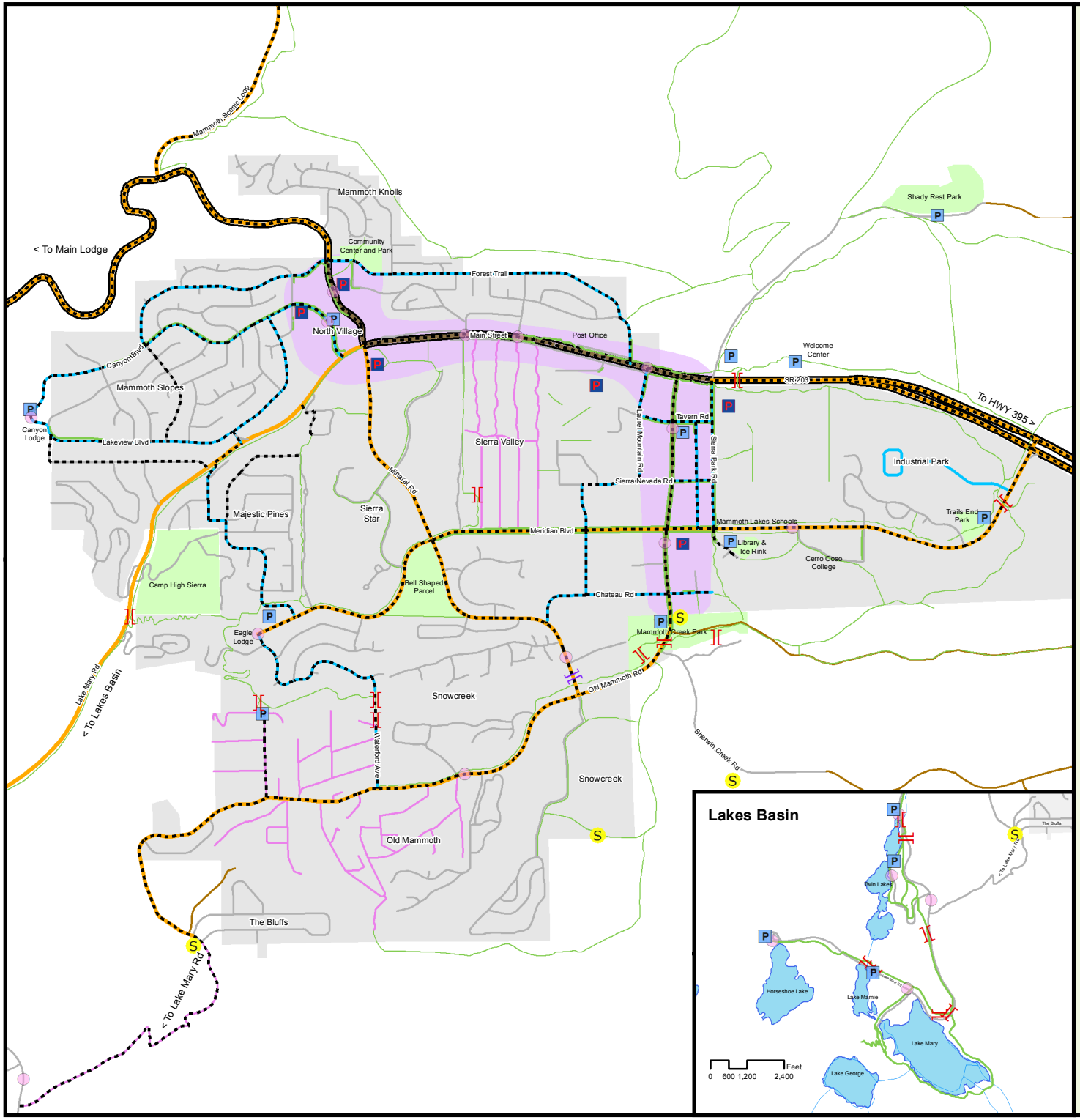


Figure 3-1
Complete Streets
Town of Mammoth Lakes
General Plan Mobility Element

BIKEWAYS
Class II and class III on street bike lanes and routes.

PEDESTRIAN ROUTES
Existing and future sidewalks and MUP's.

STATE HIGHWAY
State Route 203

ARTERIAL COMMERCIAL
Arterial Commercial street provide access for all forms of transportation, but should emphasize pedestrian and transit oriented design to encourage use of alternative modes.

ARTERIAL
Arterial street connect the Towns neighborhoods to the commercial districts and recreation portals.

COLLECTOR
Collector streets distribute vehicle and multimodal trips from local to arterial streets.

LOCAL - SHARED STREETS
Shared Streets are typically not wide enough to accomodate seperate zones for people walking, bicycling, parking or driving. Therefore, all uses must share the street.

LOCAL - CONSTRAINED STREETS
These streets typically have "constrained" right-of-way and pavement width which generally does not meet Town Standards. All users share the street.

UNIMPROVED STREETS
Unimproved streets are unpaved and do not meet Town Standards. Unimproved streets generally provide access to some recreation and campground areas and to some single-family residential parcels.

PARKS AND COMMUNITY FACILITIES
Locations that should be easily accessed by pedestrians and investment focused.

GENERAL PEDESTRIAN ZONE
Destination for pedestrians. Designed for pedestrian connections.

URBAN GROWTH BOUNDARY

EXISTING PUBLIC PARKING

PLANNED PUBLIC PARKING AREA
Parking area will accommodate 50+ parking spaces.

PLANNED STAGING AREA
Staging area will accommodate 5-50 parking spaces.

EXISTING BRIDGE / TUNNEL

FUTURE BRIDGE / TUNNEL

MAJOR TRANSIT STOP

Updated 7-7-2015

0 0.175 0.35 0.7 Miles

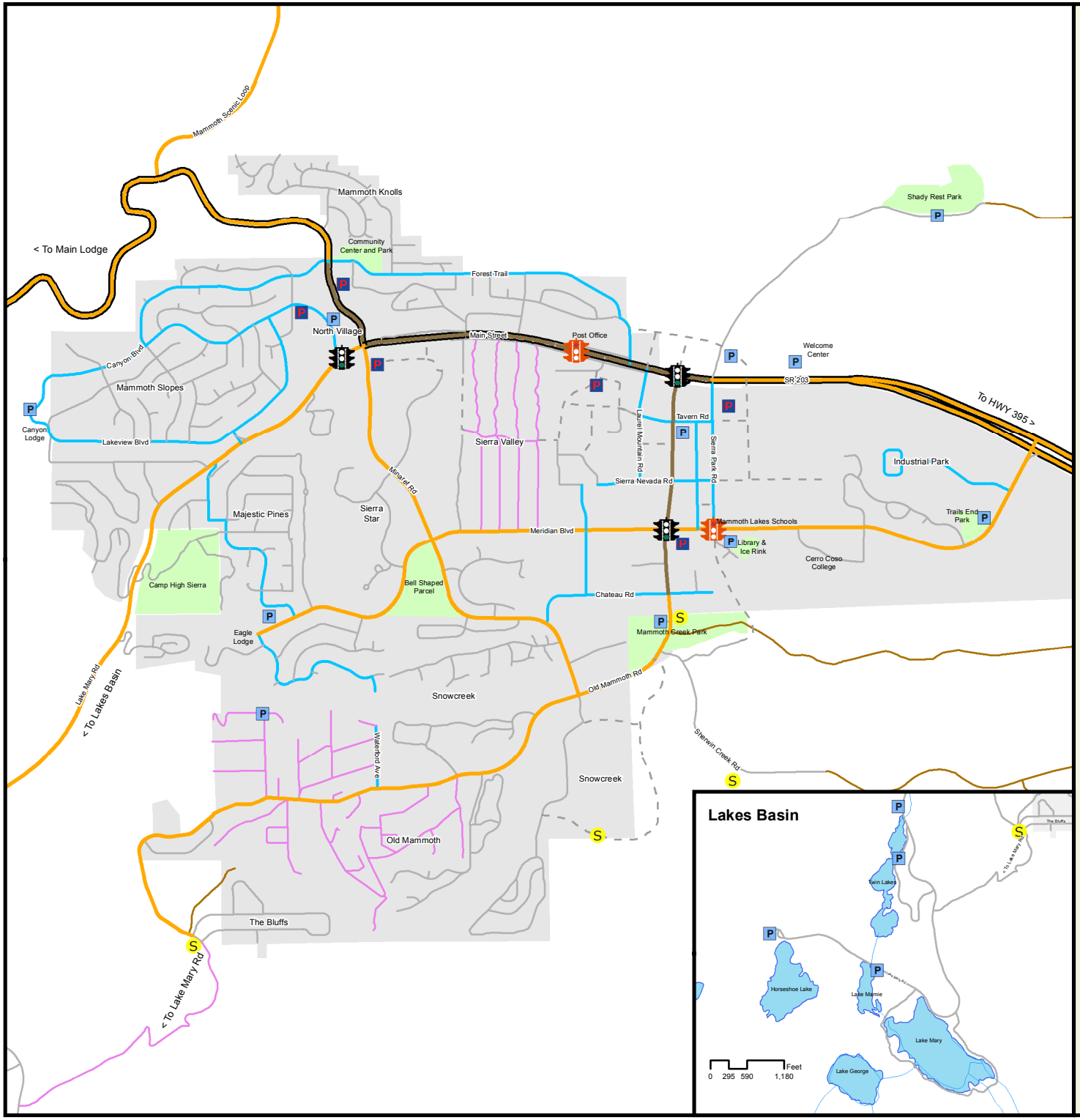


Figure 3-2
Vehicle Network
Town of Mammoth Lakes
General Plan Mobility Element

STATE HIGHWAY
State Route 203

ARTERIAL COMMERCIAL
Arterial Commercial street provide access for all forms of transportation, but should emphasize pedestrian and transit oriented design to encourage use of alternative modes.

ARTERIAL
Arterial street connect the Towns neighborhoods to the commercial districts and recreation portals.

COLLECTOR
Collector streets distribute vehicle and multimodal trips from local to arterial streets.

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These streets typically have "constrained" right-of-way and pavement width which generally does not meet Town Standards. All users share the street.

UNIMPROVED STREETS
Unimproved streets are unpaved and do not meet Town Standards. Unimproved streets generally provide access to some recreation and campground areas and to some single-family residential parcels.

PROPOSED STREETS

PARKS AND COMMUNITY FACILITIES
Locations that should be easily accessed by pedestrians and investment focused.

URBAN GROWTH BOUNDARY

EXISTING PUBLIC PARKING

PLANNED PUBLIC PARKING AREA
Parking area will accommodate 50+ parking spaces.

PLANNED STAGING AREA
Staging area will accommodate 5-50 parking spaces.

FUTURE TRAFFIC SIGNAL

EXISTING TRAFFIC SIGNAL

Updated 7-7-15

N

0 0.2 0.4 0.8 Miles

Subject: FW: MLFPD documents for FAR EIR
Attachments: 2014 Avg Response Time.pdf; 2014 Fire and EMS Calls.pdf; 2014 Property Use Report.pdf; Ordinance 13-01.pdf; Draft Mobility Element COmments.doc

From: Thom Heller [mailto:Thom@mlfd.ca.gov]
Sent: Friday, October 09, 2015 11:25 PM
To: Ruth Traxler; Luci Hise; Sandra Moberly
Cc: Brett Reed
Subject: MLFPD documents for FAR EIR

Ruth/Luci/Sandra, here are the documents and answers that you have requested. The EMS calls have increased across the country as a result of fire getting more involved in more EMS related activities. Less fires and more time spent with EMS, haz mat, search and rescue. We spend enough time on EMS calls that we have required that all engineers (equipment operators) and Captains must have EMT certification and all new firefighters must obtain EMT training within one year of joining the department. Also as a county, we only have 4 medic rigs to cover the entire county (3,030 sq miles) so all of the departments in the county are involved in EMS services.
Give a yell if you need anything else. I am out of town this week but am available by cellphone. Thom

Thom Heller
Fire Marshal/Division Chief
PO Box 5, 3150 Main Street
Mammoth Lakes, CA 93546
(760) 934-2300 O, (760) 914-0194 C
thom@mlfd.ca.gov



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From: Ruth Traxler [mailto:rtraxler@townofmammothlakes.ca.gov]
Sent: Thursday, October 08, 2015 4:19 PM
To: Thom Heller <Thom@mlfd.ca.gov>

Cc: Sandra Moberly <smoberly@townofmammothlakes.ca.gov>
Subject: MLFPD documents for

Hi Thom,

When we met to discuss the information needed from MLFPD for the FAR / Mobility Element Update, you mentioned that you would provide the following documents:

2012 Strategic Plan
2014 data (calls) and data from prior years (separated into EMT and Fire calls)
Information regarding Fire Station 2 (size and amenities)
Current Fire Code

Would you mind emailing those or if it's easier, bringing them by the office? Also, Luci wondered whether you would be able to address why the EMT calls have gone up significantly? Please let me know if you have any questions.

Thanks,
Ruth

The Mammoth Lakes Fire Department is a fire protection district that provides fire protection and emergency response to the Town of Mammoth Lakes. Additionally, the Department provides fire protection services and emergency response to the upper middle fork of the San Joaquin, Red's Meadow, and Devil's Postpile National Monument (DEPO) located in Madera County. The Mammoth Lakes Fire Department currently utilizes approximately 8 full time and approximately 45 part time personnel.
As the closest emergency services to this section of Madera County, Mammoth Lake PD and Fire, along with Mono County EMS provide services to the upper middle fork of the San Joaquin drainage. In addition to this area served, the Fire District also serves the Highway 395 corridor from the Mammoth Yosemite Airport to the Crestview Rest Area at the bottom of Crestview grade.

Mammoth Lakes Fire Department facilities include two fire stations, with Station No. 1 housing all administrative offices. The Department's training tower is located at Station No. 2. The Department's apparatus consists of:

Station No. 1
2 Type I Engines
Type III Engine
100 ft Aerial Platform
3000 gal Water Tender
BLS Ambulance
Type II US&R Trailer
Type II HazMat Trailer

Station No. 2
2 Type I Engines
75 ft Aerial Ladder

Additional vehicles and equipment include; 4 command vehicles, a 1 ton crew cab pickup, Moorbark brush chipper and Bobcat Toolcat used by the fuels management crew, a Case 620 loader for snow removal and various utility vehicles.

We understand that Fire Station No.1, the primary station, was remodeled and expanded in 2007. What new facilities did the expansion include? What is the size of Fire Station No.1 and Fire Station No. 2?
Fire Station 1 is 17,618 sq ft and is staffed with our fulltime personnel. The expansion added additional administrative offices, bunk rooms, larger training room, elevator, conference room, and telecom/computer room.
Fire Station 2 is 5,673 sq ft and is a call when needed station.

Most recent data on yearly emergency incidents for each fire station serving the Town (broken up by type) and associated average response times. Does this vary by area within the Town?
See attached summary report for 2014 statistics.

What is the Fire Department's goal for response time for fire and emergency services within Mammoth? Does it vary by area (e.g. downtown area versus areas with more limited access?)
The national standard is a 4 minute response time. Within the private land boundary the department is able to achieve that with normal road conditions. Calls during inclement weather and to the ski area, Red Meadow, and the Lakes Basin extend that response time.

Describe any mutual aid-agreements.
The District maintains aid agreements with all of the departments in Mono County, with the Forest Service, BLM, NPS (Devils Postpile) and Calfire.

Describe any planned improvements to the fire protection facilities (i.e., expansion, new facilities, additional staffing, etc.), if applicable.
The District is planning a new station at MMSA's Main Lodge area with the private development of the base facility (and two pieces of apparatus, an engine and ladder), acquisition of another engine and a light/air support truck for coverage in town due to expansion/development, relocation of the training tower as a result of development immediately surrounding the current facility, quarters for a student firefighter program to be located on property that the Fire District owns, and participate with the Town on an intersection management program for ease of movement through town during emergencies.

Please note any relevant Department requirements for development in the commercial districts including, but not limited to:

a. Fire Flow Requirements: The District requires that new construction meet the NFPA requirements for fire protection flows. In conjunction with the Mammoth Community Water District, the Fire District has been able to adequately meet these requirements. The Water District has negotiated a maximum water extraction amount in a settlement with LADWP and that will maximize the number of people that can be served and the amount of development in town.
b. Fire Protection Devices: Due to our isolation and weather conditions, virtually all structures constructed in town are required to be outfitted with automatic fire suppression and all commercial structures with automatic fire alarm systems.
c. Fire Access: Due to the conditions/challenges that town finds itself in, the Fire District is very proactive requiring access (ingress and egress), road requirements including widths, turning radius, grades, and intersection transitions.
d. Fire Hydrant Spacing: The District requires a 250 foot spacing between hydrants. This has developed over several years of watching hydrants get covered up during the winter season even with an aggressive snow removal program.
e. Fuel Modifications: The Fire District has been very aggressive in dealing with excessive fuel removal and has been the recipient of a couple of grants from the federal government to aid property owners with fuel reduction. The Fire District Board expanded the Very High Severity Zone proposed by Calfire to more adequately address the recognized problem areas and proclaimed the entire town in a Wildland Urban Interface Zone.

E.2 Mammoth Lakes Police Department

Mammoth Lakes
CALIFORNIA

COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
P.O. BOX 1609, MAMMOTH LAKES, CA 93546
PHONE (760) 934-8989 | FAX (760) 934-8608
WWW.TOWNOFMAMMOTHLAKES.CA.GOV

August 3, 2015

Al Davis, Chief of Police
Mammoth Lakes Police Department
Post Office Box 2799
568 Old Mammoth Road
Mammoth Lakes, California 93546

RE: REQUEST FOR INFORMATION REGARDING EXISTING POLICE SERVICES AND PLANNED IMPROVEMENTS/CHANGES

Dear Mr. Davis:

The Town Mammoth Lakes Planning Division is preparing an Environmental Impact Report (EIR) for the General Plan Land Use Element/Zoning Code Amendments and Mobility Element Update (the Project) pursuant to the California Environmental Quality Act (CEQA). The EIR will include an assessment of the Project's potential impacts on police protection facilities and services. In order to adequately identify and assess the full range of the Project's potential impacts, early consultation with your agency is being conducted in accordance with Section 15083 of the State CEQA Guidelines.

The Project consists of several amendments to the General Plan Land Use Element and to the Zoning Code. First, is to allow up to 2.0 FAR and to remove units and rooms per acre development standards in the approximately 122-acres of commercially designated lands along Main Street and Old Mammoth Road (see Figure 1, *Project Area for Land Use Element and Zoning Code Amendments)*. The change would allow an increase of up to 313 residential units, 430,018 square feet of commercial floor area compared to the existing General Plan buildout estimate, and up to 951 hotel rooms, compared to 524 to 1,048 hotel rooms allowed under the current General Plan buildout estimate. The Project would include Zoning Code Amendments to the commercial development standards to be consistent with the General Plan Amendments. The proposed Land Use Element amendments also include a change to the policy and text associated with regulating population growth from a People At One Time (PAOT) approach to an impact assessment based approach. Finally, proposed changes also include deleting the Community Benefits Incentive Zoning (CBIZ) and modifying Transfer of Development Rights (TDR) policies in the commercial lands within the Urban Growth Boundary.

The Project also includes adoption of a Mobility Element Update that would involve improvements to the local and regional transportation network within the Municipal Boundary and would establish a multimodal framework for the Town. The primary purpose is to create a connected, accessible, uncongested, and safe circulation system. As shown in Figure 2, Complete Street, the Mobility Element Update identifies a Complete Streets network,

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For more detailed information on the Project, the Initial Study prepared for the Project, can be found on the Town's website at: http://www.townofmammothlakes.ca.gov/index.aspx?nid=618

Given the conceptual and long-term nature of the Project, the EIR will be prepared as a Program EIR pursuant to Section 15168 of the CEQA Guidelines. Program EIRs contain less detail than typical project-level EIRs because the level of detail in the environmental analysis is reflective of the level of detail in the program description itself. As a Program EIR, certain impacts identified and mitigation measures recommended will be inherently limited in specificity due to the conceptual nature of projected development and the broad applicability of proposed policy changes. As such, subsequent more focused environmental review may take place as individual projects are proposed.

As Police protection in the Town of Mammoth Lakes is primarily provided by the Mammoth Lakes Police Department (MLPD), we are requesting information from your agency with regard to existing facilities and operations in order to evaluate impacts on police protection facilities and services. Please provide or confirm the following information regarding the MLPD and issues relating to the provision of police protection facilities and services for the Project and surrounding area, as appropriate:

Please confirm the following information:

1. Police protection and law enforcement in the Town of Mammoth Lakes are provided by the MLPD, the Mono County Sheriff's Department (MCSD), and the California Highway Patrol (CHP). The MLPD provides all non-traffic related services for the areas within the Town's incorporated boundary. MLPD services also include first responder duties for the Red's Meadow area in Madera County, located approximately 15 miles from the Town. If there are other areas that are

served by the MLPD outside of the Town's incorporated boundary please provide that information.

2. The existing MLPD facility is located at 568 Old Mammoth Road, consists of approximately 3,000 square feet of administrative offices and a booking area. The facility does not include a jail facility.

3. The MLPD currently owns six marked and four unmarked patrol cars.

Please provide the following information regarding police operations:

4. Current staffing levels for the MLPD (e.g., total full-time and part-time staff, number of officers on 24-hr duty, etc.);

5. Most recent data on associated response times for emergency, non-emergency, etc. calls (or otherwise named by the Police Department) for the station/facility serving the Town.

6. MLPD's goals for response time to within the Town and the commercial core.

7. Are current response times at or under the response time goals for the MLPD?

8. Description of any planned improvements to the police protection facilities in the Town (i.e., expansion, new facilities, additional staffing, etc.), if applicable.

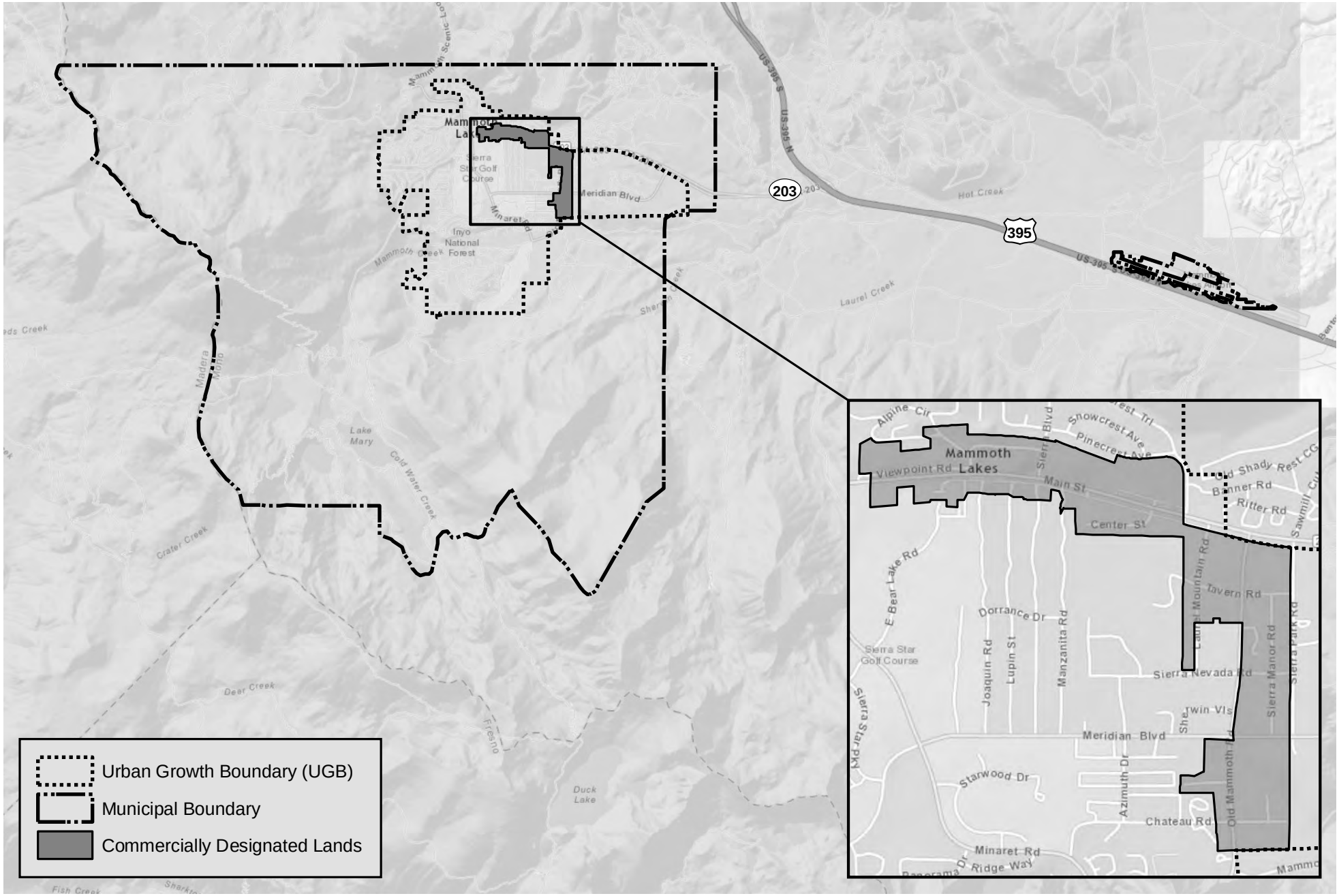
At your earliest convenience we would like to set up a conference call to discuss the Project, the requested information outlined in this letter and any questions you may have. We will follow up in an email over the next week to set up a time to schedule the call. If you have any questions or require additional information, please do not hesitate to contact me at (760) 934-8989 ext. 251.

Sincerely,

Sandra Moberly

Sandra Moberly
Planning Manager

Attachments: Figure 1, Project Area for Land Use Element and Zoning Code Amendments
Figure 2, Complete Streets



PCR

Project Areas

Mammoth Lakes Zoning Code Update

Source: ESRI Street Map, 2009; PCR Services Corporation, 2015.

FIGURE

1

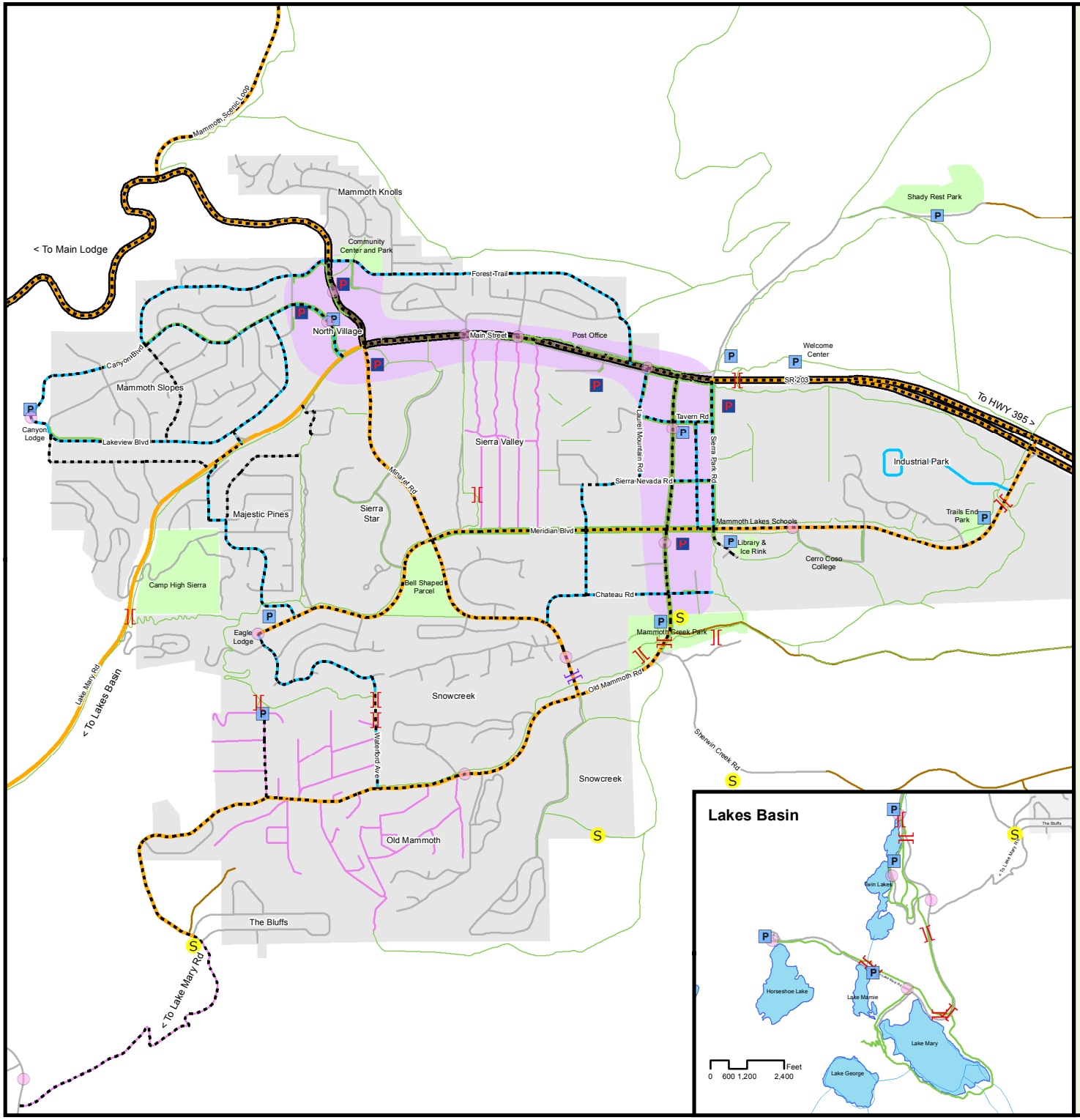


Figure 3-1
Complete Streets
Town of Mammoth Lakes
General Plan Mobility Element

BIKEWAYS
Class II and class III on street bike lanes and routes.

PEDESTRIAN ROUTES
Existing and future sidewalks and MUP's.

STATE HIGHWAY
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PARKS AND COMMUNITY FACILITIES
Locations that should be easily accessed by pedestrians and investment focused.

GENERAL PEDESTRIAN ZONE
Destination for pedestrians. Designed for pedestrian connections.

URBAN GROWTH BOUNDARY

EXISTING PUBLIC PARKING

PLANNED PUBLIC PARKING AREA
Parking area will accommodate 50+ parking spaces.

PLANNED STAGING AREA
Staging area will accommodate 5-50 parking spaces.

EXISTING BRIDGE / TUNNEL

FUTURE BRIDGE / TUNNEL

MAJOR TRANSIT STOP

Updated 7-7-2015

0 0.175 0.35 0.7 Miles

Subject: FW: General Plan Amendment

From: Al Davis
Sent: Monday, August 03, 2015 4:05 PM
To: Sandra Moberly
Subject: RE: General Plan Amendment

Hi Sandra,

#1. MLPD provides all police services including traffic issues related to non State Highways. MPLD provides first responder services to the Lakes Basin, Shady Rest and Reds Meadow through a contract with the United States Forest Service.

#2 The existing Police building is approximately 4000 sq ft.

#3 The MLPD currently owns 10 black and white vehicles. 1 non emergency police services vehicle and 3 unmarked police vehicles.

#4 Current approved Staffing levels. 11 full time Sworn Police, 4 part time sworn reserve officers, 3 full time civilian staff, 1 contracted full time employee

#5 I will have to research and see if that data is available.

#6 Typical national response time to emergency CFS is less than 5 minutes from the time the 911 call is received

#7 Again I will have to research that

#8 The Town Council has approved funding and the building of a Police Facility, planned completion date is December 2017.

Chief Al Davis
Mammoth Lakes Police Department
760-934-2011 ext 16
adavis@mammothlakespd.org

"Victory Favors the Prepared"

Disclaimer: Public documents and records are available to the public as provided under the California Public Records Act (Government Code Section 6250-6270). This e-mail may be considered subject to the Public Records Act and may be disclosed to a third-party requester.

Subject: FW: General Plan Amendment

From: Al Davis
Sent: Thursday, August 06, 2015 3:35 PM
To: Sandra Moberly
Subject: RE: General Plan Amendment

Hi Sandra,

Response times. We are not able to break down emergency and non emergency times with our system. Our average to all calls is 6:22, this includes from the time the call is receieved.

My goal which is MLPD goal, is respond to in progress and emergency calls for service within 5 minutes of when the 911 call is received.

I think this covers all the questions.

Chief Al Davis
Mammoth Lakes Police Department
760-934-2011 ext 16
adavis@mammothlakespd.org

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E.3 Mammoth Lakes Recreation Department

COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
P.O. BOX 1609, MAMMOTH LAKES, CA 93546
PHONE (760) 934-8989 | FAX (760) 934-8608
WWW.TOWNOFMAMMOTHLAKES.CA.GOV

August 21, 2015

Stuart Brown, Recreation Manager
Mammoth Lakes Recreation Department
P.O. Box 1609
437 Old Mammoth Road (Suite R)
Mammoth Lakes, California 93546

RE: REQUEST FOR INFORMATION REGARDING EXISTING PARKS AND RECREATION FACILITIES AND PLANNED IMPROVEMENTS/CHANGES

Dear Mr. Brown:

The Town Mammoth Lakes Planning Division is preparing an Environmental Impact Report (EIR) for the General Plan Land Use Element/Zoning Code Amendments and Mobility Element Update (the Project) pursuant to the California Environmental Quality Act (CEQA). The EIR will include an assessment of the Project's potential impacts on recreation facilities and services. In order to adequately identify and assess the full range of the Project's potential impacts, early consultation with your agency is being conducted in accordance with Section 15083 of the State CEQA Guidelines.

The Project consists of several amendments to the General Plan Land Use Element and to the Zoning Code. First, is to allow up to 2.0 FAR and to remove units and rooms per acre development standards in the approximately 122-acres of commercially designated lands along Main Street and Old Mammoth Road (see Figure 1, *Project Area for Land Use Element and Zoning Code Amendments)*. The change would allow an approximate increase of up to 313 residential units, 430,018 square feet of commercial floor area compared to the existing General Plan buildout estimate, and up to 951 hotel rooms, compared to 524 to 1,048 hotel rooms allowed under the current General Plan buildout estimate. The Project would include Zoning Code Amendments to the commercial development standards to be consistent with the General Plan Amendments. The proposed Land Use Element amendments also include a change to the policy and text associated with regulating population growth from a People At One Time (PAOT) approach to an impact assessment based approach. Finally, proposed changes also include deleting the Community Benefits Incentive Zoning (CBIZ) and modifying Transfer of Development Rights (TDR) policies in the commercial lands within the Urban Growth Boundary.

The Project also includes adoption of a Mobility Element Update that would involve improvements to the local and regional transportation network within the Municipal Boundary and would establish a multimodal framework for the Town. The primary purpose is to create a connected, accessible, uncongested, and safe circulation system. As shown in Figure 3-1, Complete Streets, and Figure 3-2, Vehicle Network, the Mobility Element Update

identifies a Complete Streets network, which includes physical improvements to the local and regional transportation systems. For example, new roadway extensions and segments would be constructed including the consolidation of Main Street (vacation of frontage road, turn lanes, etc.), new north-south access via Thompsons Way, extension of Tavern Road to the east, extension of Sierra Nevada Road to the east, connections to the Shady Rest site, extension of Callahan Way to the south, and the extension of 7B (Sierra Star) to connect Minaret Road to East Bear Lake Drive and to Main Street. These improvements in connectivity would likely improve traffic circulation and emergency access. Proposed street improvements would enhance connectivity throughout the Town, reduce pedestrian/vehicle conflicts, create a more active street front on Main Street, and increase the overall capacity of the Town's road system. The Mobility Element Update also identifies opportunities for new signals and roundabouts throughout Town. Roadway design would be consistent with Town of Mammoth Lakes standards, which are intended to standardize street design and improve road safety.

For more detailed information on the Project, the Initial Study prepared for the Project, can be found on the Town's website at: http://www.townofmammothlakes.ca.gov/index.aspx?nid=618

Given the conceptual and long-term nature of the Project, the EIR will be prepared as a Program EIR pursuant to Section 15168 of the CEQA Guidelines. Program EIRs contain less detail than typical project-level EIRs because the level of detail in the environmental analysis is reflective of the level of detail in the program description itself. As a Program EIR, certain impacts identified and mitigation measures recommended will be inherently limited in specificity due to the conceptual nature of projected development and the broad applicability of proposed policy changes. As such, subsequent more focused environmental review may take place as individual projects are proposed.

As parks and recreational services in the Town of Mammoth Lakes is primarily provided by the Mammoth Lakes Recreation Department, we are requesting information from your agency with regard to existing facilities and operations in order to evaluate impacts on recreational facilities and services. Please provide or confirm the information:

1. The following table lists the name, location, size, and available facilities within Mammoth Lakes. Please confirm this information.

Table 1: Parks and Recreational Facilities within Mammoth Lakes

Name	Description
Mammoth Creek Park (East and West)	This 5 acre park is located off Old Mammoth Road near Meridian Boulevard and includes the Hayden Cabin museum, picnic tables, restroom facilities, children's play area, art sculpture, walking and biking trails, and paved parking. In addition, the park has trailheads for paved MUPs that connect to the Town's Main Path. Mammoth Park East is located on National Forest land and is operated by the Town under a USFS Special Use Permit.
Shady Rest Park	This 12.5-acre park is located on Sawmill Cutoff Road to the north of SR-203 and is the main active sports municipal park in the Town. It includes a soccer field, softball fields, restrooms, BMX park, two sand volleyball courts, picnic areas, a play area, and paved parking. This park is located on National Forest land and is operated by the Town under a USFS Special Use Permit.
Community Center Park	This 4.5-acre park is located at 1000 Forest Trail and includes the Community Center, library, children's play area, six tennis courts, picnic tables, walking paths, restrooms, and paved parking. The Community Center includes a kitchen, stages, and other facilities and is primarily used for public meetings including Town Council meetings.
Whitmore Park	This 18.66-acre park is located along US 395 at Benton Crossing and contains three baseball/softball diamonds, restrooms, picnic facilities community swimming pool, and paved parking. The park is operated jointly by the Town and Mono County on ad leased from the Los Angeles Department of Water and Power. The Whitmore Track and Sports Field was recently constructed in 2012 and features an all-weather, 9-lane polyurethane running track, with a full-size synthetic turf infield. The facility typically operates from April 1 – November 1 each year (weather permitting) between sunrise and sunset. It was constructed as a public/private partnership between The Town of Mammoth Lakes and the newly expanded Mammoth Track Club.
Trails End Park	This acre park is located along Meridian Boulevard south of Commerce Drive and includes Brothers Skate Park, and restroom facilities.

Source: Town of Mammoth Lakes Parks and Recreation Master Plan and Town of Mammoth Lakes website

Please provide the following information regarding park and recreation services:

2. Current capacity/level of use of parks and recreational facilities listed in Table 1.

3. Future plans for construction or expansion of parks and recreational facilities in the Town.

4. Has the Town of Mammoth Lakes Parks and Recreation Master Plan adopted standard to evaluate the Town's park and recreation level of service (LOS)?

5. In addition to the Town's General Fund, the Mammoth Lakes Recreation, Trails and Parks Investment Initiative Ordinance (Measure R) provides funding for planning, construction, operation, maintenance, programming and administration of trails, parks and recreation facilities. The Mammoth Lakes Mobility, Recreation and Arts & Culture Utility Users Tax Ordinance, (Measure U) provides funding for Mobility, Recreation and Arts and Cultural programs and facilities. Please list other funding mechanisms that support the maintenance of existing facilities and the construction of new of park and recreational facilities. What typically is the amount per funding source?

6. Any other relevant information or concerns regarding impacts to parks and recreation facilities that would serve the Project.

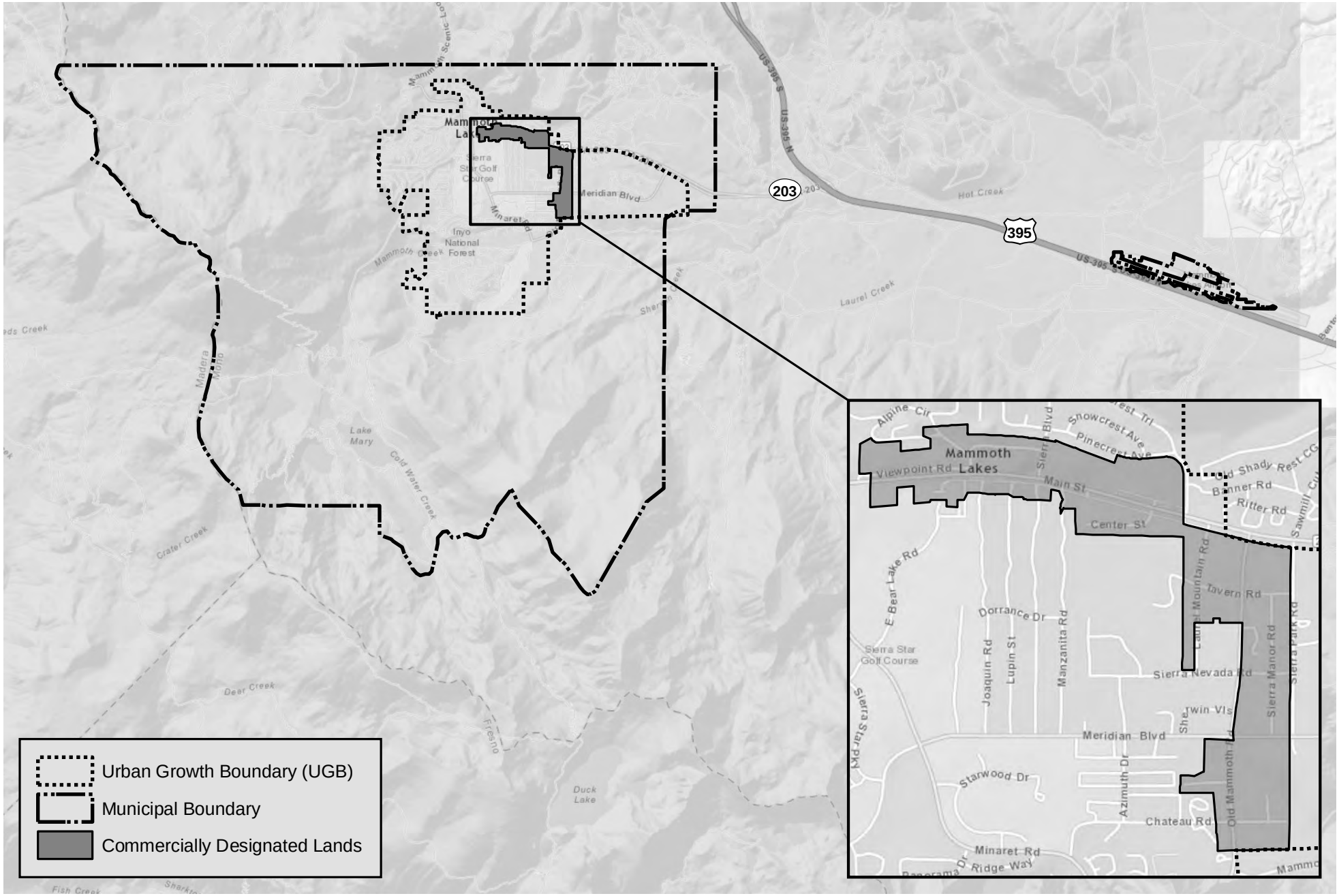
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Sincerely,

Sandra Moberly

Sandra Moberly
Planning Manager

Attachments: Attachment 1, Project Area for Land Use Element and Zoning Code Amendments
Attachment 2, Figure 3.1 - Complete Streets
Attachment 3, Figure 3.2 – Vehicle Network



PCR

Project Areas

Mammoth Lakes Zoning Code Update

Source: ESRI Street Map, 2009; PCR Services Corporation, 2015.

FIGURE

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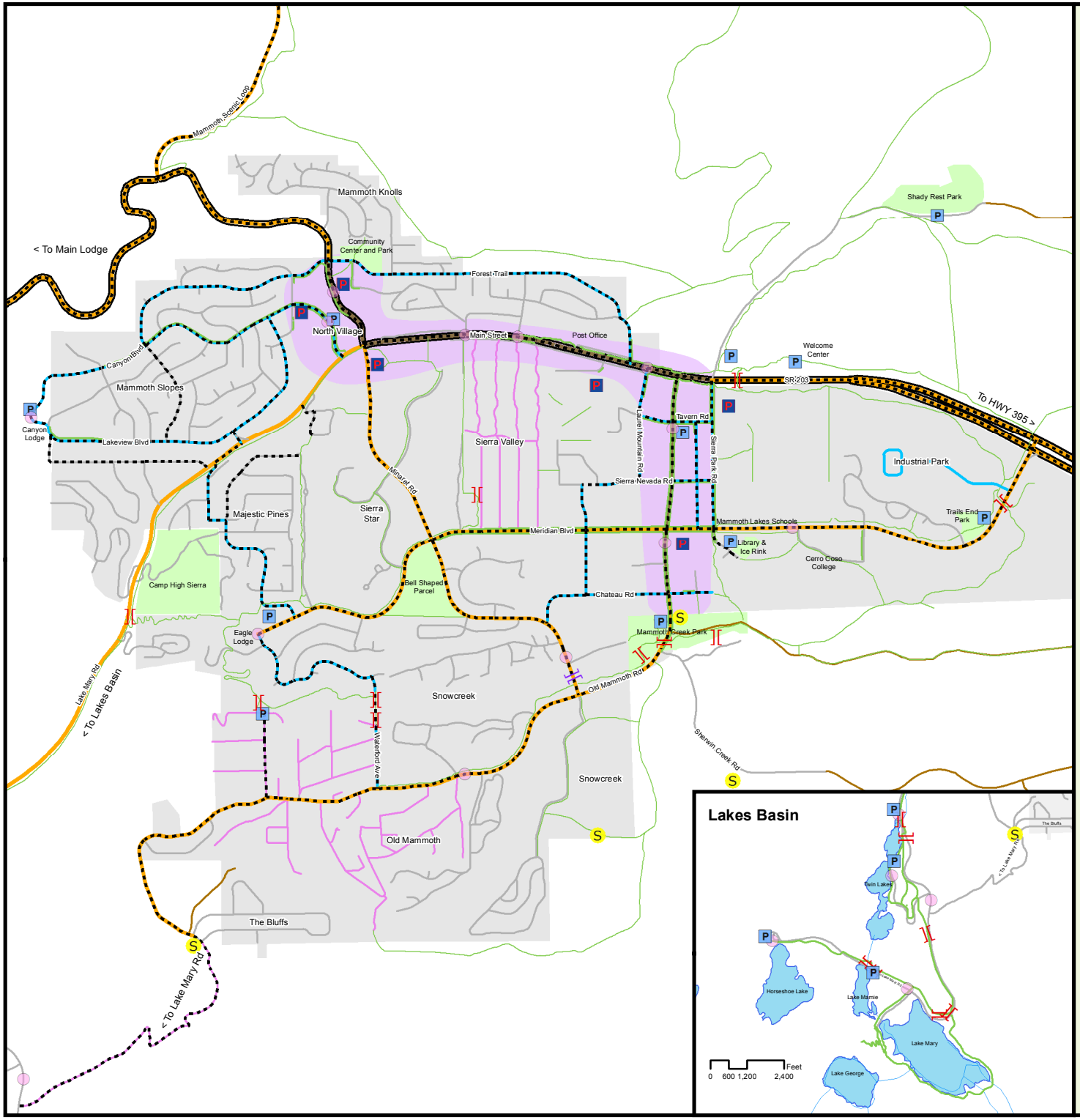


Figure 3-1
Complete Streets
Town of Mammoth Lakes
General Plan Mobility Element

BIKEWAYS
Class II and class III on street bike lanes and routes.

PEDESTRIAN ROUTES
Existing and future sidewalks and MUP's.

STATE HIGHWAY
State Route 203

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PARKS AND COMMUNITY FACILITIES
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URBAN GROWTH BOUNDARY

EXISTING PUBLIC PARKING

PLANNED PUBLIC PARKING AREA
Parking area will accommodate 50+ parking spaces.

PLANNED STAGING AREA
Staging area will accommodate 5-50 parking spaces.

EXISTING BRIDGE / TUNNEL

FUTURE BRIDGE / TUNNEL

MAJOR TRANSIT STOP

Updated 7-7-2015

0 0.175 0.35 0.7 Miles

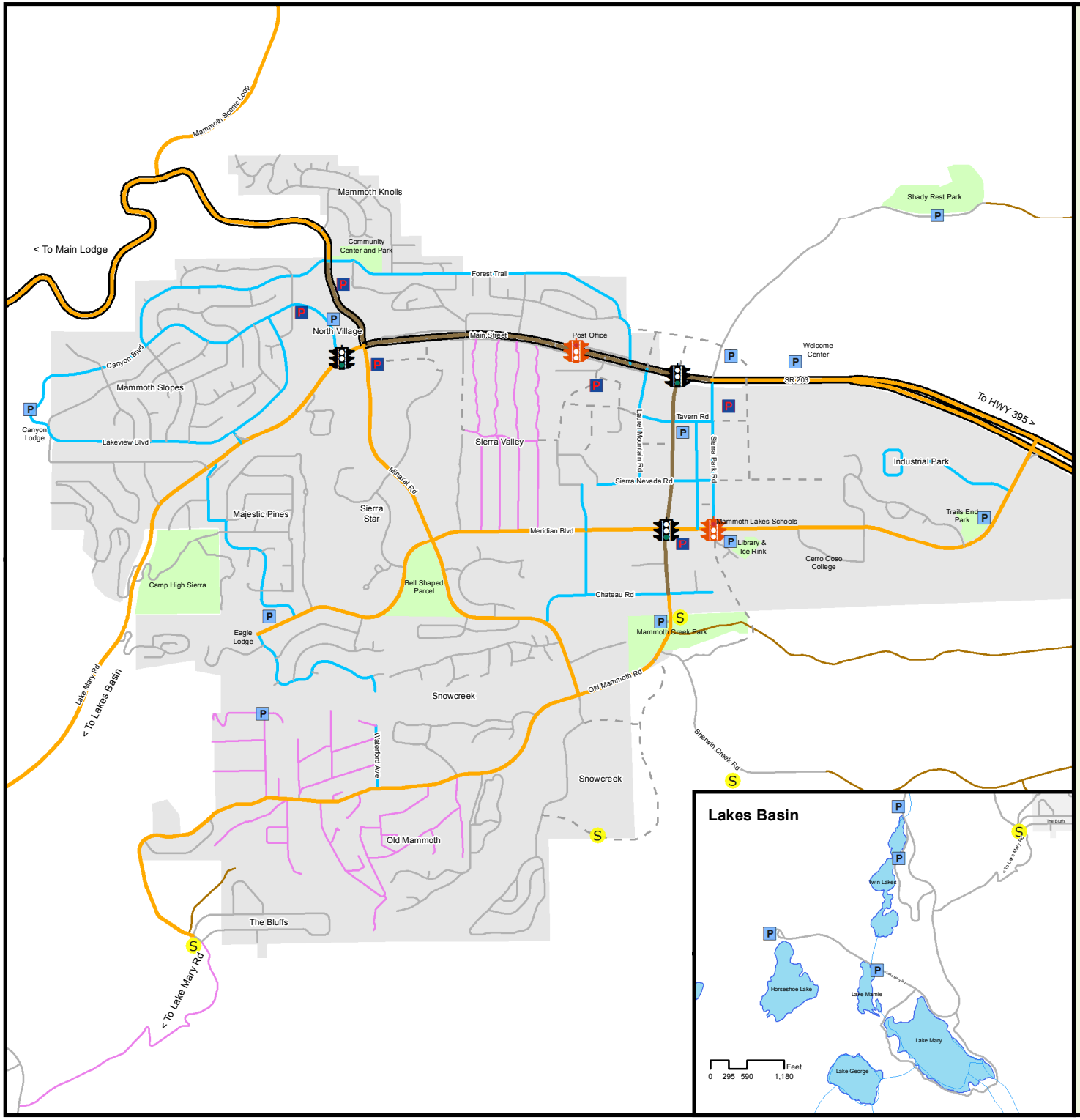


Figure 3-2
Vehicle Network
Town of Mammoth Lakes
General Plan Mobility Element

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PROPOSED STREETS

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FUTURE TRAFFIC SIGNAL

EXISTING TRAFFIC SIGNAL

Updated 7-7-15

N

0 0.2 0.4 0.8 Miles

From: Stuart Brown <sbrown@townofmammothlakes.ca.gov>
Sent: Friday, September 11, 2015 10:58 AM
To: Luci Hise; Jessie Barkley
Cc: Sandra Moberly
Subject: Parks and Recreation
Attachments: MLR Srat Doc Exec Summary.docx; Strat doc v8.5.docx; Parks and Facilities_PRICE & INFO_FINAL.pdf

Hello,

Nice chatting with you today!

Attached are the documents we talked about including stats on the pool, RecZone and Ice Rink.

RecZone Visits

2013	*2014*	*2015*
1*094*	741	853

Ice Rink Visits

2014/15	*2013/14*	*2012/13*	*2011/12*	*2010/11*	*2009/10*	*2008/09*	*2007/08*
7,321	8,167	3,969	11,209	-	8,140	5,521	5,459

Whitmore Pool

2013	*2014*	*2015*
5614	4681	4625

Kind regards,

Stu

Stuart Brown
Recreation Manager & Public Information Officer
Town of Mammoth Lakes
P.O. Box 1609
437 Old Mammoth Road, Suite R
Mammoth Lakes, CA 93546
W: (760) 934-8989 ext. 210
C: (760) 709-2481
F: (760) 934-8608



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E.4 Mammoth Unified School District

COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
P.O. BOX 1609, MAMMOTH LAKES, CA 93546
PHONE (760) 934-8989 | FAX (760) 934-8608
WWW.TOWNOFMAMMOTHLAKES.CA.GOV

August 21, 2015

Brooke Bien, Business Manager
Mammoth Unified School District
P.O. Box 3509
461 Sierra Park Road
Mammoth Lakes, California 93546

RE: REQUEST FOR INFORMATION REGARDING EXISTING SCHOOL SERVICES AND PLANNED IMPROVEMENTS/CHANGES

Dear Ms. Bien:

The Town Mammoth Lakes Planning Division is preparing an Environmental Impact Report (EIR) for the General Plan Land Use Element/Zoning Code Amendments and Mobility Element Update (the Project) pursuant to the California Environmental Quality Act (CEQA). The EIR will include an assessment of the Project's potential impacts on school facilities and services. In order to adequately identify and assess the full range of the Project's potential impacts, early consultation with your agency is being conducted in accordance with Section 15083 of the State CEQA Guidelines.

The Project consists of several amendments to the General Plan Land Use Element and to the Zoning Code. First, is to allow up to 2.0 FAR and to remove units and rooms per acre development standards in the approximately 122-acres of commercially designated lands along Main Street and Old Mammoth Road (see Attachment 1, *Project Area for Land Use Element and Zoning Code Amendments)*. The change would allow an approximate increase of up to 313 residential units, 430,018 square feet of commercial floor area compared to the existing General Plan buildout estimate, and up to 951 hotel rooms, compared to 524 to 1,048 hotel rooms allowed under the current General Plan buildout estimate. The Project would include Zoning Code Amendments to the commercial development standards to be consistent with the General Plan Amendments. The proposed Land Use Element amendments also include a change to the policy and text associated with regulating population growth from a People At One Time (PAOT) approach to an impact assessment based approach. Finally, proposed changes also include deleting the Community Benefits Incentive Zoning (CBIZ) and modifying Transfer of Development Rights (TDR) policies in the commercial lands within the Urban Growth Boundary.

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As school services in the Town of Mammoth Lakes is primarily provided by the Mammoth Unified School District (MUSD), we are requesting information from your agency with regard to existing facilities and operations in order to evaluate impacts on school facilities and services. Please provide or confirm the following information regarding the school facilities and services for the Town, as appropriate:

Please confirm the following information:

1. The MUSD provides education to students in grades kindergarten (K) through grade 12 in the Town of Mammoth Lakes; facilities include Mammoth High School, Mammoth Middle School, Mammoth Elementary School, and Sierra High School (Continuation School). We understand that the Mammoth Olympic Academy for Academic Excellence has closed.

Please provide the following information regarding school services and operations:

2. Student generation rates for schools (elementary, middle school and high schools) used by the District.

3. Existing enrollments at schools serving the Town for the 2014–2015 school year.

4. Design capacities for the serving schools. Are these schools considered to be overcrowded?

5. Number of existing portable classrooms at the serving schools, if any, and the potential to add portable classrooms in the future.

6. Any plans for new facilities or expansion of facilities in the near future at the schools serving the Town?

7. Please describe any applicable development impact school fees (i.e., source, amount, etc.).

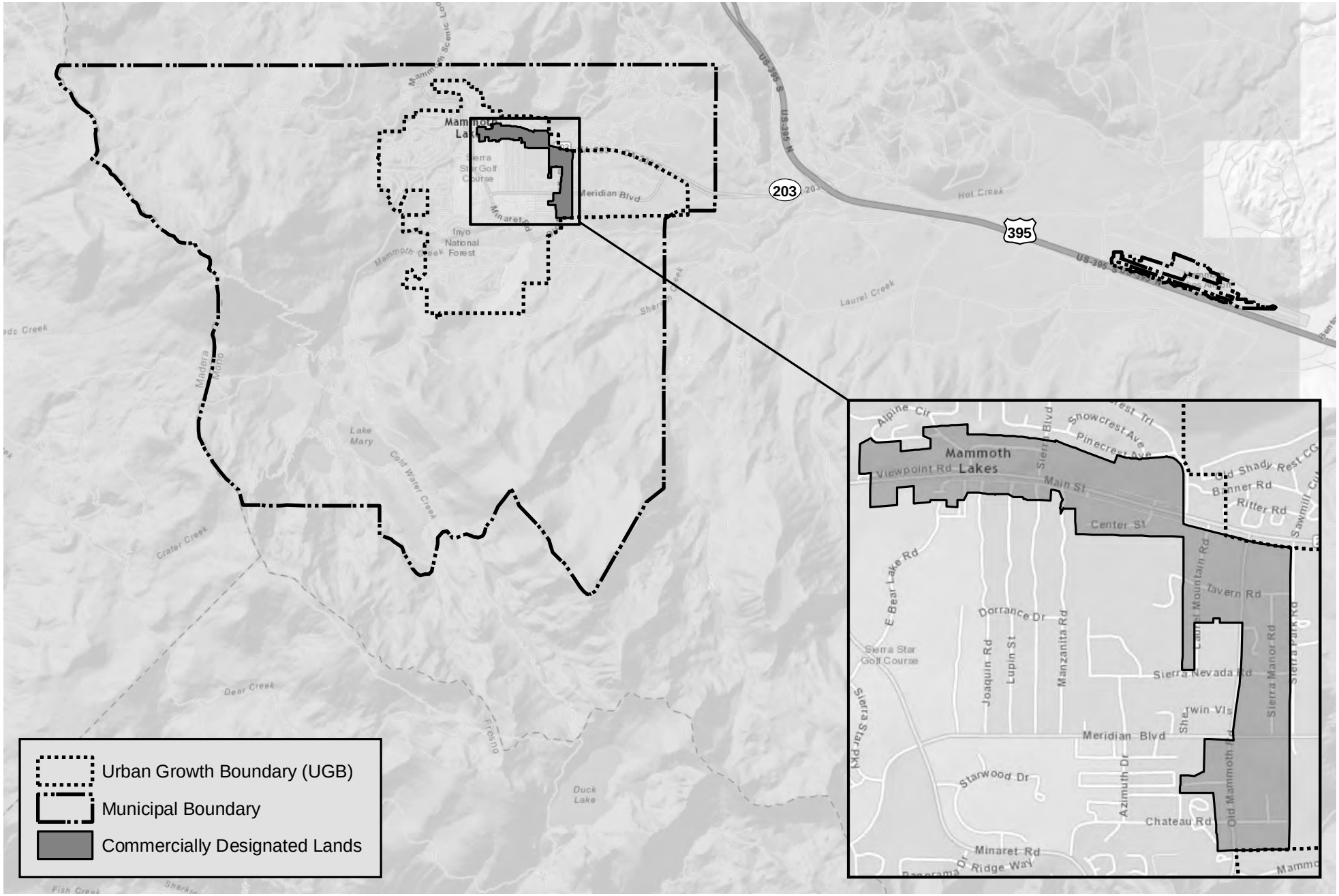
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Sincerely,

Sandra Moberly

Sandra Moberly
Planning Manager

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PCR

Project Areas

Mammoth Lakes Zoning Code Update

Source: ESRI Street Map, 2009; PCR Services Corporation, 2015.

FIGURE

1

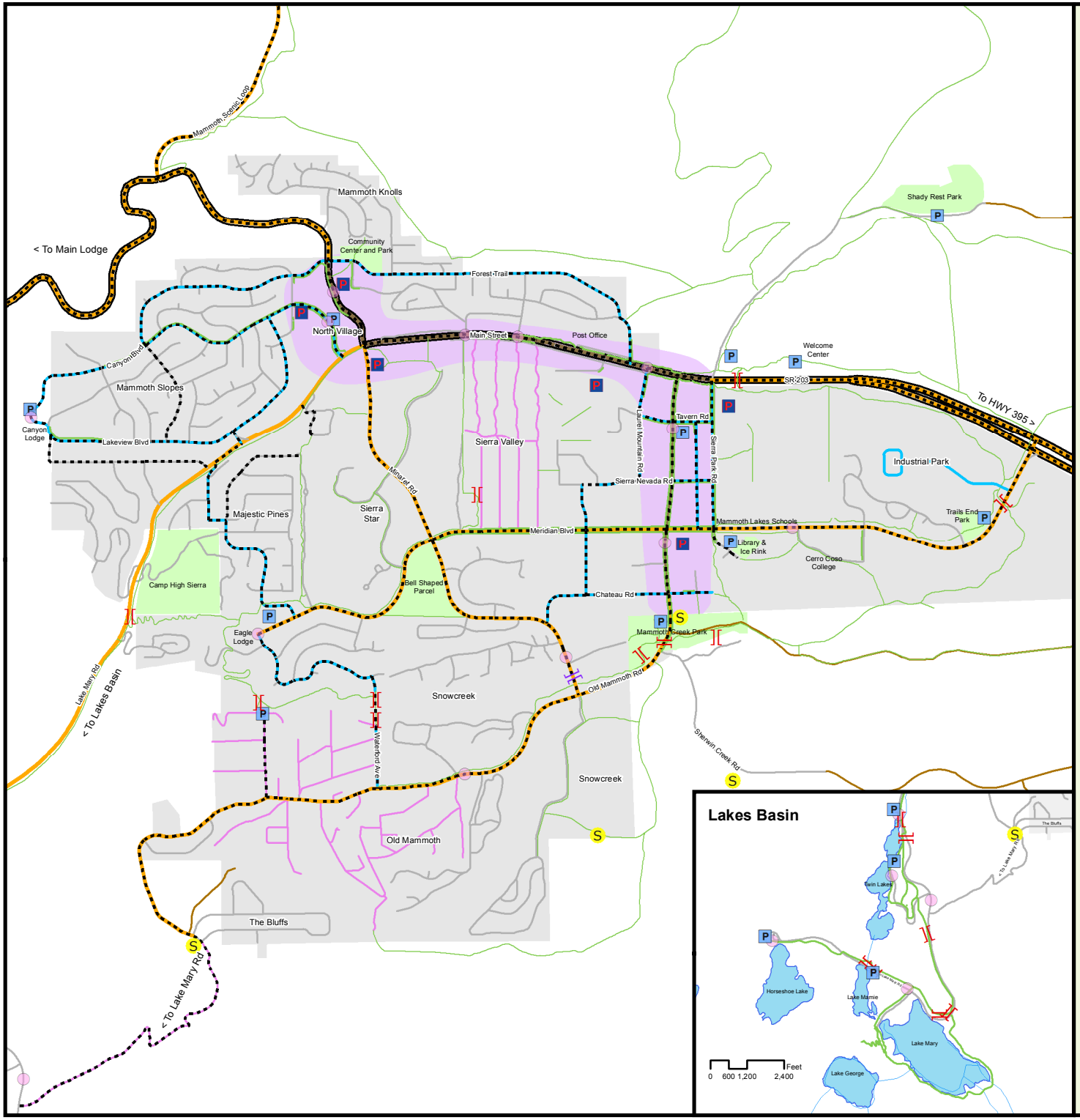


Figure 3-1
Complete Streets
Town of Mammoth Lakes
General Plan Mobility Element

BIKEWAYS
Class II and class III on street bike lanes and routes.

PEDESTRIAN ROUTES
Existing and future sidewalks and MUP's.

STATE HIGHWAY
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URBAN GROWTH BOUNDARY

EXISTING PUBLIC PARKING

PLANNED PUBLIC PARKING AREA
Parking area will accommodate 50+ parking spaces.

PLANNED STAGING AREA
Staging area will accommodate 5-50 parking spaces.

EXISTING BRIDGE / TUNNEL

FUTURE BRIDGE / TUNNEL

MAJOR TRANSIT STOP

Updated 7-7-2015

0 0.175 0.35 0.7 Miles

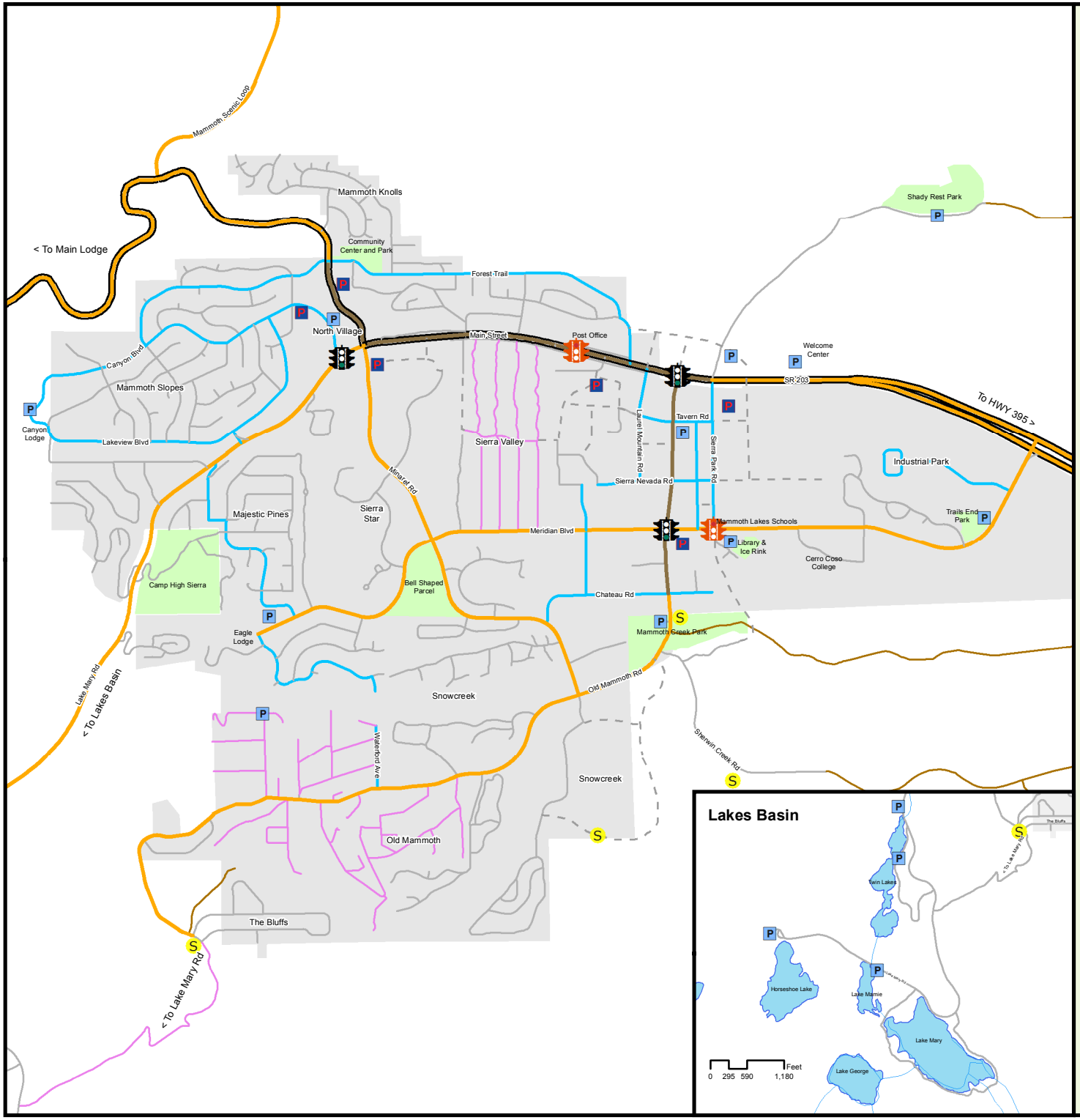


Figure 3-2
Vehicle Network
Town of Mammoth Lakes
General Plan Mobility Element

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FUTURE TRAFFIC SIGNAL

EXISTING TRAFFIC SIGNAL

Updated 7-7-15

N

0 0.2 0.4 0.8 Miles

Subject: FW: TOML FAR/Mobility Element EIR

From: Brooke Bien [mailto:bbien@mammothusd.org]
Sent: Friday, October 09, 2015 12:17 PM
To: Sandra Moberly
Subject: Re: TOML FAR/Mobility Element EIR

Please let me know if you have any questions I hope this helps!

1. Is correct
2. is correct
3. Current enrollment for 2015-2016
   MES= 576
   MMS= 272
   MHS=331
   SHS=15
4. Design Capacity
   MES = 450
   MMS= 325
   MHS= 525
   SHS=25
5. Existing portables
   MES = 12
   MMS= 2
   MHS= 8
   SHS=0
6. Yes, MUSD is looking to remodel/upgrade the high school, and add classrooms at MMS and MES along with some upgrades at MES.
7. Currently MUSD has developer fees for all new development and additions.

Thank you!!!

--
Brooke D. Bien
Business Manager
Mammoth Unified School District
PO Box 3509
Mammoth Lakes, CA 93546
Office: 760.934.6802 x513
Fax: 760.934.6803
www.mammothusd.org

Subject: FW: Request for Information regarding school services and planning improvements

From: Brooke Bien [mailto:bbien@mammothusd.org]
Sent: Wednesday, January 27, 2016 2:59 PM
To: Jessie Barkley
Subject: Re: Request for Information regarding school services and planning improvements

I am so sorry I have been meaning to get this off to you, please let me know if you have any questions.

Questions:

1. Please confirm: The MUSD provides education to students in grades kindergarten (K) through grade 12 in the Town of Mammoth Lakes; facilities include Mammoth High School, Mammoth Middle School, Mammoth Elementary School, and Sierra High School (Continuation School). We understand that the Mammoth Olympic Academy for Academic Excellence has closed.

MUSD Response: Correct

PCR: No follow up needed.

2. Student generation rates for schools (elementary, middle school and high schools) used by the District.

MUSD Response: Correct

PCR: We will need the specific student generation rates for the elementary, middle school and high school to conduct our analysis

3. Existing enrollments at schools serving the Town for the 2014–2015 school year.

MUSD Response: Current enrollment for 2015-2016

MES= 576
MMS= 272
MHS=331
SHS=15

PCR: No follow up needed.

4. Design capacities for the serving schools. Are these schools considered to be overcrowded?

MUSD Response: Design Capacity:

MES = 450
MMS= 325
MHS= 525
SHS=25

PCR: Looking at the response above, it appears that Mammoth Elementary (MES) is overcrowded. Where are these extra students located ?(e.g. portables, larger classroom sizes)? ***Portables***

5. Number of existing portable classrooms at the serving schools, if any, and the potential to add portable classrooms in the future.

MUSD Response Existing portables:

MES = 12
MMS= 2

MHS= 8
SHS=0

PCR: Are the 12 portables for MES in use already (per question #4). Are there any additional portables not in use that could be utilized by MES to provide additional capacity? ***All Portables are being used***

6. Any plans for new facilities or expansion of facilities in the near future at the schools serving the Town?

MUSD Response: Yes, MUSD is looking to remodel/upgrade the high school, and add classrooms at MMS and MES along with some upgrades at MES.

PCR: Can these improvements be described in more detail? As part of the upgrade to the high school will capacity be expanded? How many classrooms will be added at MES and MMS? What will be the capacity at MES and MMS with these additions? ***Sorry not at this time we are just staing to look into the changes***

7. Please describe any applicable development impact school fees (i.e., source, amount, etc.).

MUSD Response: Currently MUSD has developer fees for all new development and additions.

PCR: Could you please provide the fee amount? We would need the amount per square feet for new development broken down by type if applicable (single-family, multi-family, commercial, office, industrial uses, etc)

$2.63 per Sq foot of new residential construction
$0.42 per Sq foot for Commercial/industrial development

E.5 Mono County Library Administration

COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT
P.O. BOX 1609, MAMMOTH LAKES, CA 93546
PHONE (760) 934-8989 | FAX (760) 934-8608
WWW.TOWNOFMAMMOTHLAKES.CA.GOV

August 21, 2015

Ana Danielson, Library Director
Mono County Library Administration
P.O. Box 1120
400 Sierra Park Road
Mammoth Lakes, California 93546

RE: REQUEST FOR INFORMATION REGARDING EXISTING LIBRARY SERVICES AND PLANNED IMPROVEMENTS/CHANGES

Dear Ms. Danielson:

The Town Mammoth Lakes Planning Division is preparing an Environmental Impact Report (EIR) for the General Plan Land Use Element/Zoning Code Amendments and Mobility Element Update (the Project) pursuant to the California Environmental Quality Act (CEQA). The EIR will include an assessment of the Project's potential impacts on library facilities and services. In order to adequately identify and assess the full range of the Project's potential impacts, early consultation with your agency is being conducted in accordance with Section 15083 of the State CEQA Guidelines.

The Project consists of several amendments to the General Plan Land Use Element and to the Zoning Code. First, is to allow up to 2.0 FAR and to remove units and rooms per acre development standards in the approximately 122-acres of commercially designated lands along Main Street and Old Mammoth Road (see Attachment 1, *Project Area for Land Use Element and Zoning Code Amendments)*. The change would allow an approximate increase of up to 313 residential units, 430,018 square feet of commercial floor area compared to the existing General Plan buildout estimate, and up to 951 hotel rooms, compared to 524 to 1,048 hotel rooms allowed under the current General Plan buildout estimate. The Project would include Zoning Code Amendments to the commercial development standards to be consistent with the General Plan Amendments. The proposed Land Use Element amendments also include a change to the policy and text associated with regulating population growth from a People At One Time (PAOT) approach to an impact assessment based approach. Finally, proposed changes also include deleting the Community Benefits Incentive Zoning (CBIZ) and modifying Transfer of Development Rights (TDR) policies in the commercial lands within the Urban Growth Boundary.

The Project also includes adoption of a Mobility Element Update that would involve improvements to the local and regional transportation network within the Municipal Boundary and would establish a multimodal framework for the Town. The primary purpose is to create a connected, accessible, uncongested, and safe circulation system. As shown in Figure 3-1, Complete Streets, and Figure 3-2, Vehicle Network, the Mobility Element Update

identifies a Complete Streets network, which includes physical improvements to the local and regional transportation systems. For example, new roadway extensions and segments would be constructed including the consolidation of Main Street (vacation of frontage road, turn lanes, etc.), new north-south access via Thompsons Way, extension of Tavern Road to the east, extension of Sierra Nevada Road to the east, connections to the Shady Rest site, extension of Callahan Way to the south, and the extension of 7B (Sierra Star) to connect Minaret Road to East Bear Lake Drive and to Main Street. These improvements in connectivity would likely improve traffic circulation and emergency access. Proposed street improvements would enhance connectivity throughout the Town, reduce pedestrian/vehicle conflicts, create a more active street front on Main Street, and increase the overall capacity of the Town's road system. The Mobility Element Update also identifies opportunities for new signals and roundabouts throughout Town. Roadway design would be consistent with Town of Mammoth Lakes standards, which are intended to standardize street design and improve road safety.

For more detailed information on the Project, the Initial Study prepared for the Project, can be found on the Town's website at: http://www.townofmammothlakes.ca.gov/index.aspx?nid=618

Given the conceptual and long-term nature of the Project, the EIR will be prepared as a Program EIR pursuant to Section 15168 of the CEQA Guidelines. Program EIRs contain less detail than typical project-level EIRs because the level of detail in the environmental analysis is reflective of the level of detail in the program description itself. As a Program EIR, certain impacts identified and mitigation measures recommended will be inherently limited in specificity due to the conceptual nature of projected development and the broad applicability of proposed policy changes. As such, subsequent more focused environmental review may take place as individual projects are proposed.

As library services in the Town of Mammoth Lakes are primarily provided by the Mono County Library System, we are requesting information from your agency with regard to existing facilities and operations in order to evaluate impacts on library facilities and services. Please provide or confirm the following information regarding services and issues relating to the provision of library facilities and services for the Project as appropriate:

Please provide and confirm the following information regarding the Mono County Library System and issues relating to the provision of library facilities and services for the Town of Mammoth and surrounding area, as appropriate:

1. Please confirm that the Mammoth Lakes Library Branch located at 400 Sierra Park Road was constructed in 2007 and that the library features 24 public computers, free Wi-Fi, a children's area, a teen area and two meeting rooms. The library collection includes books, audio books, DVDs and a Spanish language collection as well as numerous events and programs.

2. Please provide the following information regarding library operations:

a. Size of the Mammoth Lakes Library Branch (building size)

b. Number of personnel/staff;

c. Collection size and amenities;

d. Programmed or target service population (e.g. Does this population include all of the Town of Mammoth? Does it include other communities/areas outside of the Town?)

e. Actual population served (if available);

3. Please identify any planned, funded, and/or scheduled service improvements or expansions to Mono County library facilities that would serve the Town of Mammoth.

4. Please provide Library standards and goals used to assess the adequacy of library facilities.

5. Does the library collect development impact fees for new development projects? If so, please describe (i.e., source of fees, amount, etc.)

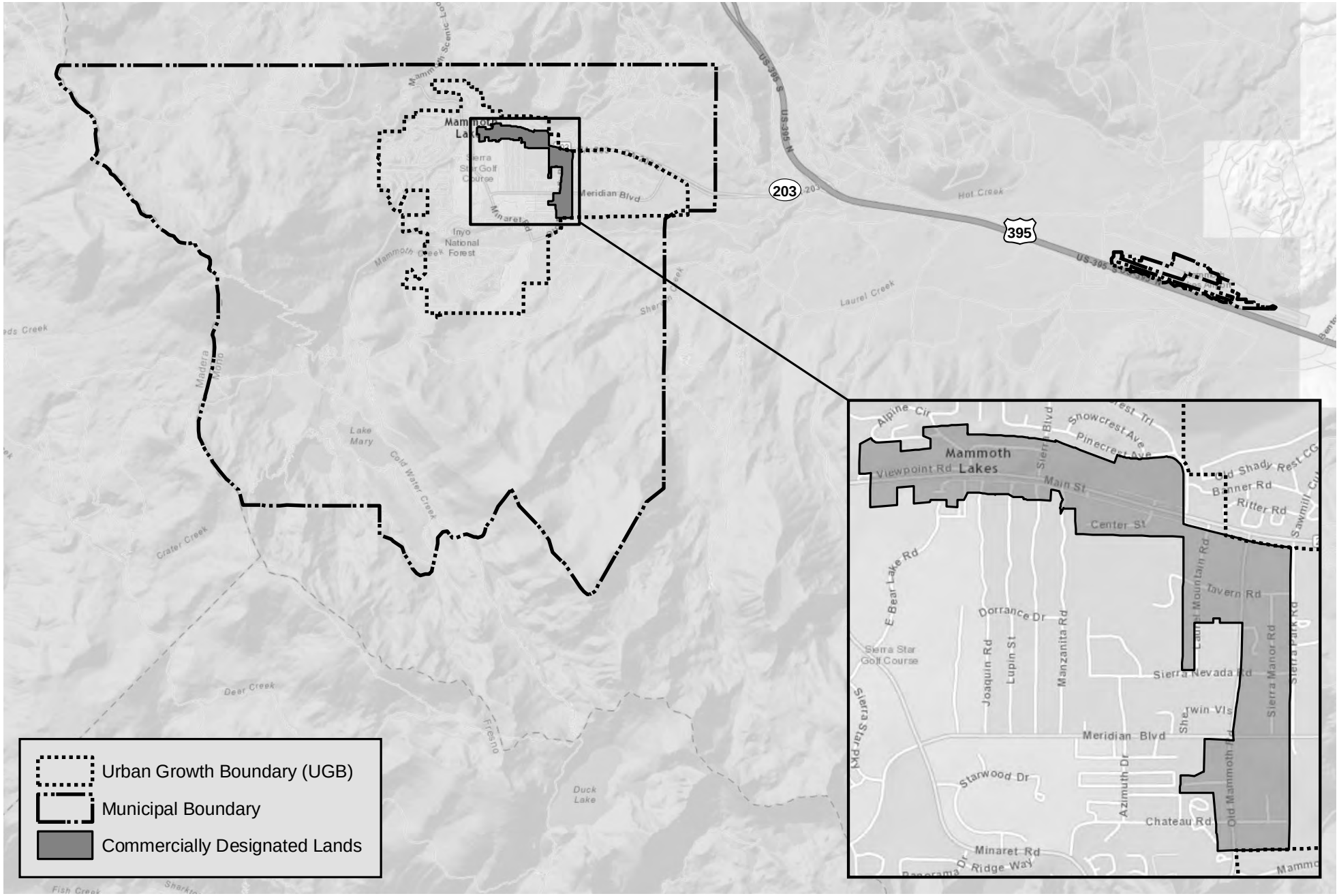
At your earliest convenience we would like to set up a conference call to discuss the Project, the requested information outlined in this letter and any questions you may have. We will follow up in an email over the next week to set up a time to schedule the call. If you have any questions or require additional information, please do not hesitate to contact me at (760) 934-8989 ext. 251.

Sincerely,

Sandra Moberly

Sandra Moberly
Planning Manager

Attachments: Attachment 1, Project Area for Land Use Element and Zoning Code Amendments
Attachment 2, Figure 3.1 - Complete Streets
Attachment 3, Figure 3.2 – Vehicle Network



PCR

Project Areas

Mammoth Lakes Zoning Code Update

Source: ESRI Street Map, 2009; PCR Services Corporation, 2015.

FIGURE

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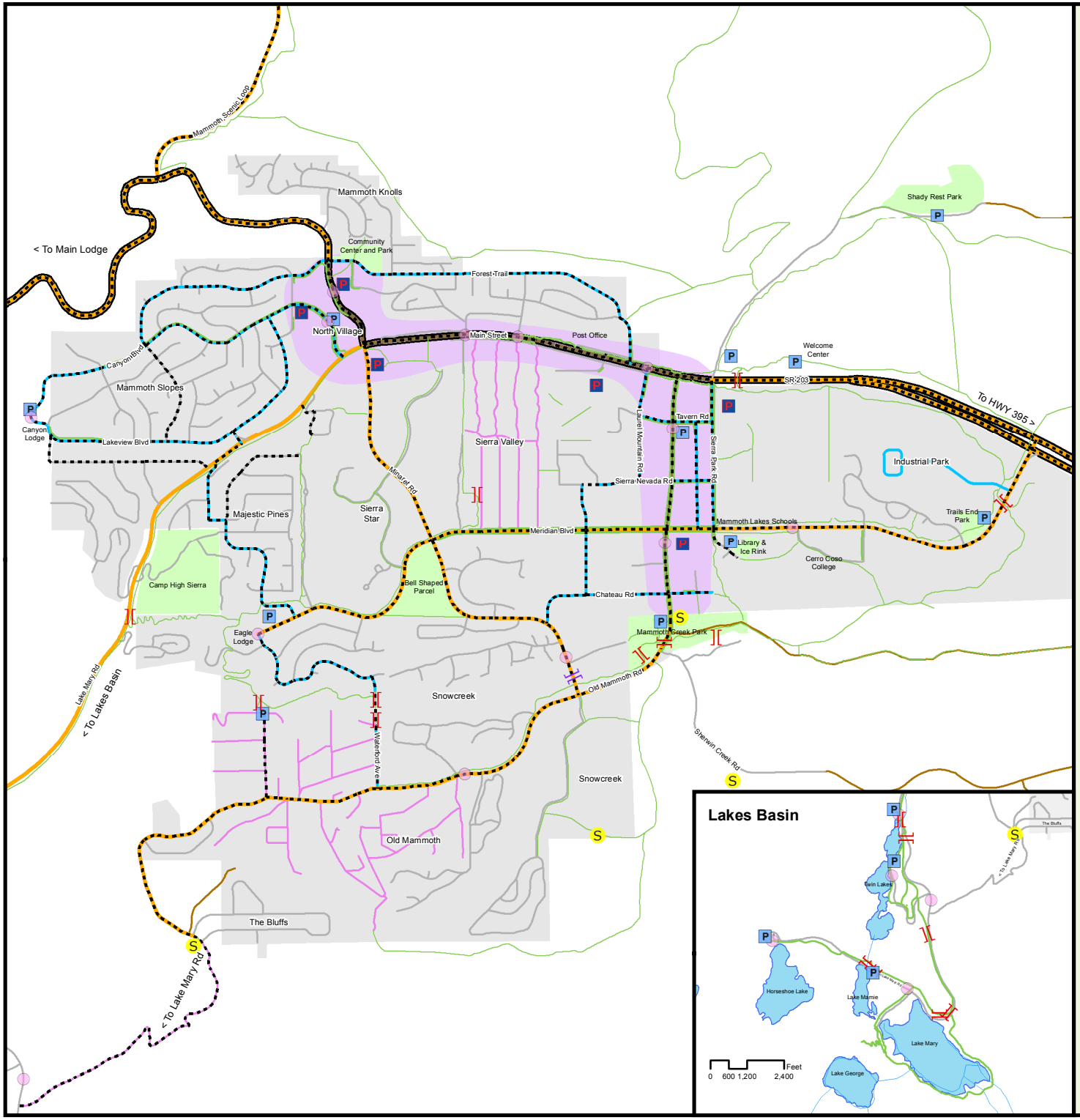


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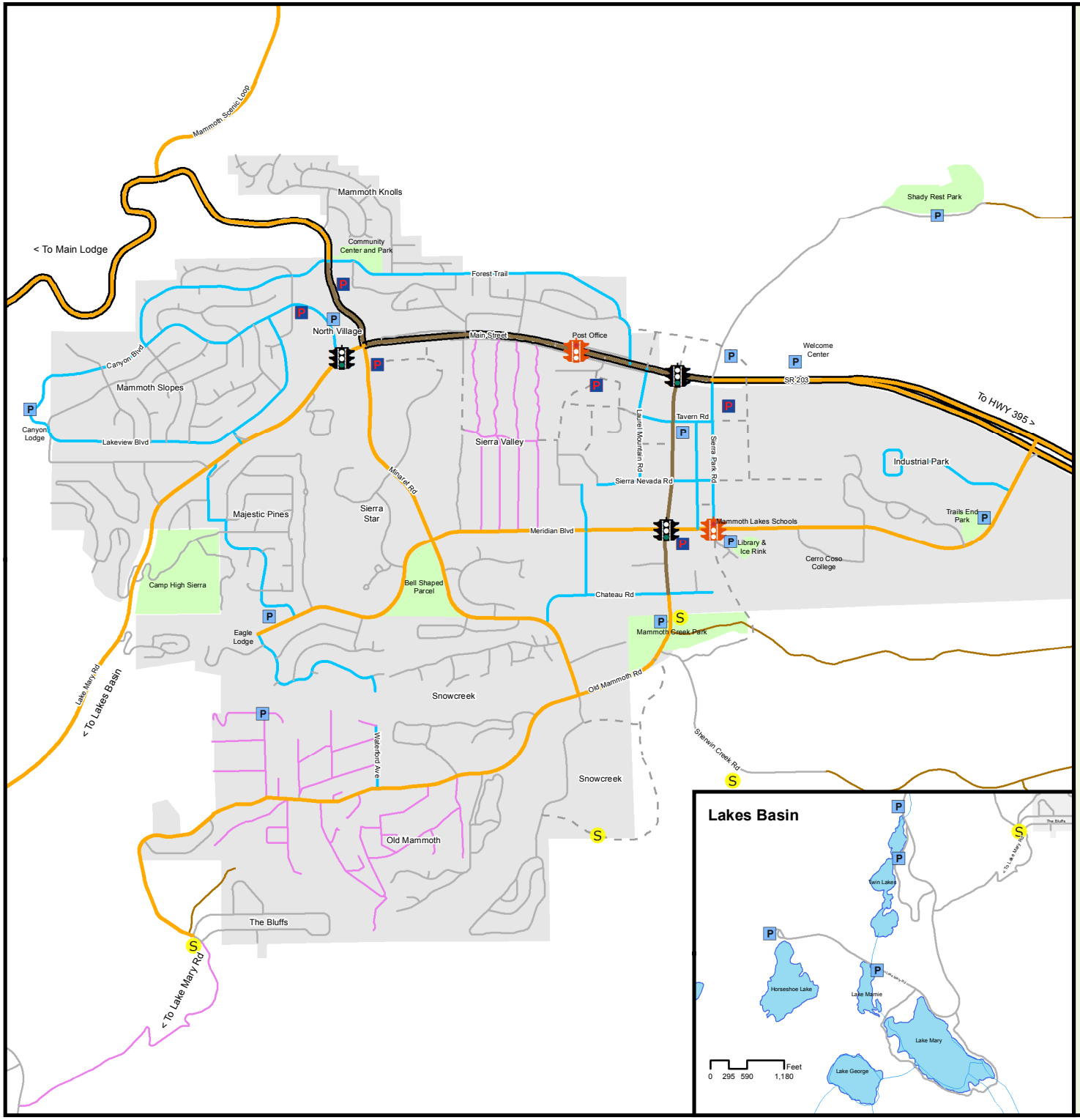


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EXISTING TRAFFIC SIGNAL

Updated 7-7-15

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Appendix F

Traffic Study

MAMMOTH MOBILITY ELEMENT

TRANSPORTATION IMPACT ANALYSIS



Proposal Prepared for

Town of Mammoth Lakes

Prepared by

LSC Transportation Consultants, Inc.

MAMMOTH MOBILITY ELEMENT

TRANSPORTATION IMPACT ANALYSIS

Prepared for the

Town of Mammoth Lakes
P.O. Box 1609
Mammoth Lakes, CA 93546
(760) 934-8989

Prepared by

LSC Transportation Consultants, Inc.
2690 Lake Forest Road, Suite 2C
P.O. Box 5875
Tahoe City, CA 96145
(530) 583-4053

April 18, 2016

LSC # 157420

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Executive Summary

PURPOSE

The Town of Mammoth Lake's General Plan Land Use Element/Zoning Code Amendments and Mobility Element Update Project includes physical transportation improvements (such as potential new street connections and/or reconfigurations, new traffic signals and/or roundabouts, transit-related improvements, and bicycle and pedestrian-related improvements), as well as revisions to the Town's future buildout land use assumptions. The purpose of this report is to analyze potential transportation impacts associated with the proposed project. The following six study scenarios are evaluated:

- Scenario 1 – Existing Conditions
- Scenario 2 – Existing Conditions With Mobility Element Roadways
- Scenario 3 – Future Buildout With Existing Roadway Network
- Scenario 4 – Future Buildout With Mobility Element Roadways
- Scenario 5 – Future New FAR Land Uses With Existing Roadway Network
- Scenario 6 – Future New FAR Land Uses With Mobility Element Roadways

CONCLUSIONS

The conclusions of the Transportation Impact Analysis are as follows:

1. Implementation of the proposed Mobility Element and new FAR land use quantities would generally result in increased traffic volumes along Main Street, and reduced traffic volumes in areas west and south of Main Street.

2. All study intersections operate at an acceptable LOS under existing year scenarios, with or without the Mobility Element roadway network.

3. The following eight intersections are forecast to exceed the LOS thresholds under one or more of the future buildout scenarios (Scenarios 3 through 6):

- Main Street / Mountain Blvd
- Main Street / Post Office
- Main Street / Center Street
- Main Street / Forest Trail
- Main Street / Laurel Mountain Road
- Old Mammoth Road / Tavern Road
- Old Mammoth Road / Sierra Nevada Road
- Old Mammoth Road / Minaret Road / Fairway Drive

Potential intersection LOS mitigation measures are summarized in Table ES-1 for each of the future buildout scenarios. As indicated, under future scenarios without the new FAR land uses, only two intersections would require LOS mitigation. In comparison, with the new FAR land

TABLE ES1: Mammoth Lakes - Intersection Mitigation Summary

	Intersection	Potential or Planned Improvement	Improvement Included in 2007 General Plan?	Improvement Needed Under These Scenarios [1]			
				3	4	5	6
				Future Buildout with Existing Network	Future Buildout with Mobility Element	Future FAR Land Uses with Existing Network	Future FAR Land Uses with Mobility Element
3	Mountain Boulevard / Main Street	Traffic Signal		X	X		X[3]
4	Main Street / Post Office	Traffic Signal			X	X	X
5	Center Street / Main Street	Add NB-RT Lane or Traffic Signal	X[4]			X	
6	Forest Trail / Main Street	Prohibit SB-LT or Traffic Signal	X[5]			X	X
7	Laurel Mountain Road / Main Street	Add NB-RT Lane				X	X
11	Old Mammoth Road / Tavern Road	Add EB-RT Lane				X	
12	Old Mammoth Road / Sierra Nevada Road	Add EB & WB RT Lanes				X	X
15	Sierra Park Blvd / Meridian Boulevard [2]	Traffic Signal					
19	Old Mammoth Road / Minaret Road / Fairway Drive	Roundabout	X	X	X	X	X

Note: NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound, RT = Right Turn, LT = Left Turn

Note 1: No mitigation is needed under existing year Scenarios 1 and 2.

Note 2: Although this improvement is included in the proposed Mobility Element, it is not needed from an LOS perspective.

Note 3: Adding a SBRT lane on Mountain Blvd would mitigate the LOS deficiency under Scenario 6.

Note 4: The adopted 2007 General Plan includes a signal or roundabout at the Main Street/Center Street intersection.

Note 5: The adopted 2007 General Plan includes prohibiting southbound left-turn movements made from Forest Trail onto Main Street.

Mammoth Mobility LOS.xlsx

uses, at least six intersections would require LOS mitigation. The proposed Mobility Element includes a new traffic signal at one intersection along Main Street. The adopted 2007 Mobility Element also includes a signal or roundabout at one intersection along Main Street (at Center Street). Further analysis of potential new signals is expected to be provided as a part of project-specific analyses. In addition, the Town plans to work with Caltrans regarding intersection improvements on Main Street.

Table ES-1 also lists improvements at Meridian Blvd / Sierra Park Blvd that are not necessary from an LOS standpoint, although they are included in the proposed Mobility Element:

4. No intersection traffic queuing problems are identified at the study intersections, with the exception of one location. At the signalized Minaret Road/Main Street/Lake Mary Road intersection, the traffic queues on the eastbound Lake Mary Road approach are calculated to exceed the available lane storage length under all future scenarios. As such, the eastbound traffic queues could potentially interfere with operations at the adjacent signalized Lake Mary Road/Canyon Boulevard intersection during busy periods. This condition does not occur under the 50th-percentile traffic queues. The Town plans to work with Caltrans regarding intersection improvements along Main Street.

5. All roadways in the study area have reserve capacity under all scenarios. Therefore, no roadway capacity concerns are identified.

6. After post processing the VMT results to include higher levels of bicycle and pedestrian use with the addition of the mobility element, the VMT for all scenarios is below the Town's VMT threshold of 179,708 except Scenario 5 (Future New FAR Land Uses with Existing Roadway Network).

7. Implementation of the proposed Mobility Element would expand the transit system and increase overall transit use by approximately 0.4 percent. Overall, the proposed Mobility Element is expected to improve transit services and facilities. Implementation of the new FAR would add both new vehicle and transit trips. As the increase in vehicle trips is greater than the increase in transit trips, the overall transit percentage is reduced with the new FAR.

8. Implementation of new signals and/or roundabouts along Main Street would improve pedestrian conditions. In addition, the proposed grade-separated trail crossing on Minaret Road north of Old Mammoth Road would improve safety conditions for pedestrians and bicyclists. Overall, the proposed Mobility Element is expected to improve conditions for pedestrians and bicyclists in Mammoth. Implementation of the new FAR is expected to increase pedestrian travel, primarily in the commercial zones along Main Street and Old Mammoth Road.

9. Senate Bill (SB) 743 would result in a change in the metrics for determining impacts relative to the transportation network through the development of new methodologies for traffic analyses for CEQA documents. The public comment period regarding the Revised Proposal on updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA ends on February 29, 2016.

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Section 1
Introduction

This engineering report documents the findings and conclusions of a Transportation Impact Analysis (TIA) for the Town of Mammoth Lake's General Plan Land Use Element/Zoning Code Amendments and Mobility Plan Update Project in Mammoth Lakes, California. The Project includes physical transportation improvements (such as potential new street connections and/or reconfigurations, new traffic signals and/or roundabouts, transit-related improvements, and bicycle and pedestrian-related improvements), as well as revisions to the Town's future buildout land use assumptions. This study examines the transportation conditions for build out of the project. This study also provides the technical basis for the EIR Transportation and Circulation Section.

SCOPE OF STUDY

This transportation engineering study analyzes traffic data, intersection capacity and level of service, and transportation impacts of the proposed project in accordance with the requirements of the Town of Mammoth Lakes and Caltrans standards. Based upon input provided by the Town of Mammoth Lakes, the following intersections were identified for analysis:

1. Forest Trail/Minaret Road
2. Main Street/Minaret Road
3. Main Street/Mountain Boulevard
4. Main Street/Post Office
5. Main Street/Center Street
6. Main Street/Forest Trail
7. Main Street/Laurel Mountain Road
8. Main Street/Old Mammoth Road
9. Main Street/Sierra Park Road/Sawmill Cutoff
10. Main Street/Thompson Way (potential new connection)
11. Old Mammoth Road/Tavern Road
12. Old Mammoth Road/Sierra Nevada Road
13. Meridian Boulevard/Minaret Road
14. Meridian Boulevard/Old Mammoth Road
15. Meridian Boulevard/Sierra Park Road
16. Meridian Boulevard/Main (SR 203) Eastbound
17. Meridian Boulevard/Main (SR 203) Westbound
18. Old Mammoth Road/Chateau Road
19. Old Mammoth Road/Minaret Road

In addition, the following impacts are evaluated:

- Identification of intersection traffic queuing concerns

- The need for new turn lanes, signals, roundabouts, or other capacity-enhancing measures at the study intersections

- Roadway capacity within the study area

- Vehicle Miles Traveled (VMT) within the Town on a busy winter Saturday

- Bicycle and pedestrian facilities (qualitative analysis)

- Transit systems and facilities (qualitative analysis)

In order to evaluate the impacts of both project components (both the Mobility Element and the Land Use/Zoning Amendment); this analysis considers the following six scenarios:

1. Existing Year Traffic Conditions and Existing Roadway Network
2. Existing Year Traffic Conditions and Future Mobility Element Roadway Network
3. Future Buildout Land Uses and Existing Roadway Network
4. Future Buildout Land Uses and Future Mobility Element Roadway Network
5. Future Buildout with new FAR Land Uses and Existing Roadway Network
6. Future Buildout with new FAR Land Uses and Future Mobility Element Roadway Network

The results of this study are used to develop recommendations to mitigate project transportation impacts.

Section 2
Existing Conditions

This section documents the existing setting and transportation conditions in the Town, providing a foundation for comparison to future conditions. The study area and the intersections evaluated are shown in Figure 1.

EXISTING SETTING

Existing Roadway Network

The major access into the Town is via State Route 203, which intersects US Highway 395 just east of the Town limits. SR 203 (also named Main Street) is a four-lane minor arterial road from US 395 through the majority of the developed portion of the Town. SR 203 narrows to two lanes north of the intersection of Main Street and Minaret Road. The highway continues from the developed area of the Town to the Mammoth Mountain Ski Area (MMSA), and terminates at the Mono-Madera County Line. Portions of SR 203 are augmented by frontage roads. The Mammoth Scenic Loop, a two-lane road off of SR 203, provides secondary access from the Town to US 395 to the north. The Town's roadway network is shown in Figure 1.

The following roadway classifications are used in the Town:

Arterials - Major streets, which are two to four lanes, augmented with turning lanes and controlled intersections, carrying high volumes of traffic to and from local and collector streets. Arterial roadways in the Town include the following:

- Main Street (SR 203) to 8.5 miles west of US 395 (including the Frontage Roads)
- Minaret Road
- Meridian Boulevard
- Old Mammoth Road east of Waterford Avenue

Collectors – Two-lane streets for traffic moving between arterial and local streets augmented at intersections, which provide access for major land use areas. Collector streets in the Town include the following:

- Old Mammoth Road, west of Minaret
- Canyon Boulevard
- Lakeview Boulevard
- Forest Trail
- Majestic Pines Drive
- Waterford Avenue
- Lake Mary Road
- Lakeview Road
- Azimuth Drive
- Chateau Road

Figure 1
Mammoth Lane Configuration and Intersection Controls
1 Forest Trail/Minaret Rd.
2 Main St./Minaret Rd.
3 Main St./Mountain Blvd.
4 Main St./Post Office
5 Main St./Center St.
6 Main St./Forest Trail
7 Main St./Laurel Mountain Rd.
8 Main St./Old Mammoth Rd.
9 Main St./Sierra Park/ Sawmill Cutoff
10 Main St./Thompson Way
11 Old Mammoth Rd./ Tavern Rd.
12 Old Mammoth/ Sierra Nevada Rd.
13 Meridian Blvd./Minaret Rd.
14 Meridian Blvd./ Old Mammoth Rd.
15 Meridian Blvd./ Sierra Park Rd.
16 Meridian Blvd./Main St. (SR 203) Eastbound
17 Meridian Blvd./Main St. (SR 203) Westbound
18 Old Mammoth Rd./ Chateau Rd.
19 Old Mammoth Rd./ Minaret Rd./Fairway Dr.
LEGEND
Stop Sign
Traffic Signal
0 0.5 1 2 Miles
Mammoth Lakes
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

- Sierra Park Road
- Laurel Mountain Road
- Sierra Nevada Road, east of Azimuth Drive
- Tavern Road

Local Streets - Public and private two-lane streets that provide direct access to residential properties, and provide access from residential areas to collector or arterial streets.

Rural Roads - Roads that provide access to remote, scenic, or recreational areas, and to very low-density residential areas.

At present, all of the roadways in the Town provide one through lane in each direction, with the exception of the following roadways, which provide two through lanes in each direction:

- Main Street east of Minaret Road
- Minaret Road from Main Street north 0.1 mile
- Portions of Meridian Boulevard

Additionally, although not in the study area, Rainbow Lane is a one-way street between Canyon Boulevard and Mammoth Slopes Drive.

Traffic signals are currently provided at the following intersections:

- Main Street/Old Mammoth Road
- Main Street/Minaret Road
- Meridian Boulevard/Minaret Road
- Meridian Boulevard/Old Mammoth Road
- Canyon Boulevard/Lake Mary Road (this intersection is not included in this study)

The intersection of Meridian Boulevard/Sierra Park Road is an all-way (4-way) stop-controlled intersection. Other intersections along the arterial roadways are controlled by stop signs on the minor street approaches. The lane configuration and control of the study intersections are depicted in Figure 1.

Existing Traffic Volumes

The traffic volumes throughout the Town of Mammoth Lakes vary greatly by time of day, day of week and, more importantly, by season. While daily traffic volumes in Mammoth Lakes are sometimes the highest in the summer months, the highest peak-hour volumes are typically experienced on winter Saturdays, during the afternoon hours when skiers "download" from the Mammoth Mountain Ski Area. Particularly in areas with these high variations in traffic levels, it is important to decide what hourly traffic volumes should be used as the basis of design. To avoid the development of facilities that are only needed a relatively few days per year, the traffic engineering profession has adopted a standard procedure of basing roadway design on volumes slightly below the absolute peak volumes. For this reason the Town of Mammoth Lakes, for

example, has focused its design policies on a typical winter Saturday peak hour, rather than the highest winter peak hour.

A Policy on Geometric Design of Highways and Streets (American Association of State Highway and Transportation Officials, 2001) indicates "*the design hourly volume for rural highways should generally be the 30th highest volume of the future year chosen for design*." (Page 61) It is true that during winter peak periods, traffic volumes occasionally exceed the resulting intersection and roadway capacity. However, to avoid the development of facilities that are only needed during peak periods on a relatively few days per year, the typical winter Saturday peak hour is analyzed, which is consistent with standard engineering design practice.

Finally, although this study focuses on winter traffic conditions, summer traffic volumes are also reviewed and compared to winter volumes, in order to verify that the highest peak-hour traffic volumes generally occur during the winter season.

Existing Winter Traffic Volumes

Year 2009 winter Saturday design volumes for the study area were developed as a part of the *Town of Mammoth Lakes Travel Model Report* (LSC Transportation Consultants, Inc., 2011) through the following steps:

1. Winter weekday and Saturday 24-hour traffic counts were conducted at a total of eight roadway locations throughout the Town. These data were supplemented with 24-hour traffic counts taken by the Town's permanent count stations. A total of 13 additional 24-hour counts were obtained, for a total of 21 locations.

2. In addition to the 24-hour traffic counts, weekday and Saturday peak-hour intersection traffic counts were conducted at a total of 18 intersections on Friday and Saturday, January 30-31, 2009.

3. To develop the travel demand model design hour, daily traffic volumes for each Saturday during three winter seasons (06/07, 07/08, 08/09) were obtained from Caltrans' permanent count stations at two major intersections on Main Street (Old Mammoth Road, Lake Mary Road/Minaret Road). The volumes from each Saturday during these three winter seasons were averaged to determine the average daily traffic volume on Main Street during a "typical winter Saturday."

4. The average daily volume was then compared to the average volume that occurred during the date of the Town's extensive and comprehensive traffic volume survey conducted on Saturday, January 31, 2009 at all major intersections and roadway segments within Mammoth Lakes. This comparison was used to develop a "factor" of 1.07, which was applied to the collected intersection and roadway segment count data. The adjusted volumes were used to calibrate the travel demand model so that it more accurately represents a "typical winter Saturday."

The 2009 winter traffic volumes were adjusted to reflect existing year conditions. The growth in traffic volumes between 2009 and 2015 was determined based on a review of Caltrans historical traffic volumes. Caltrans Peak Month Average Daily Traffic (ADT) volumes at a point on SR 203 (Main Street) east of Minaret Road were reviewed for years 2009 and 2014 (the latest year for which data are available). At this location, peak month ADT grew approximately 5.0 percent between 2009 and 2014. Extrapolating this growth trend to 2015 yields an estimated growth rate of 6.0 percent between 2009 and 2015 or an annual average growth rate of 1 percent per year. This 6.0 percent growth rate was applied to all 2009 intersection volumes to estimate existing winter design volumes.

Finally, the resulting traffic volumes were checked to make sure they reasonably balance along roadway links with no intervening driveways. Intersection balancing adjustments were generally applied conservatively high with respect to traffic volumes by increasing approach volumes at the adjacent intersection in order to match the higher link volume. The resulting existing winter PM peak-hour traffic volumes are shown in Figure 2.

Existing Summer Traffic Volumes

Town of Mammoth Lakes staff conducted summer intersection counts between August 22 and August 26, 2015 to confirm winter traffic volumes are still higher and the appropriate design period. It was then necessary to adjust the summer count data to reflect a typical busy summer day. The typical busy summer day volume was estimated based on the 30th highest summer peak hour along Main Street as reported by Caltrans hourly data. Factors of adjustment varied between 1.05 and 1.59. The resulting typical busy summer peak-hour design volumes are contained in Appendix A.

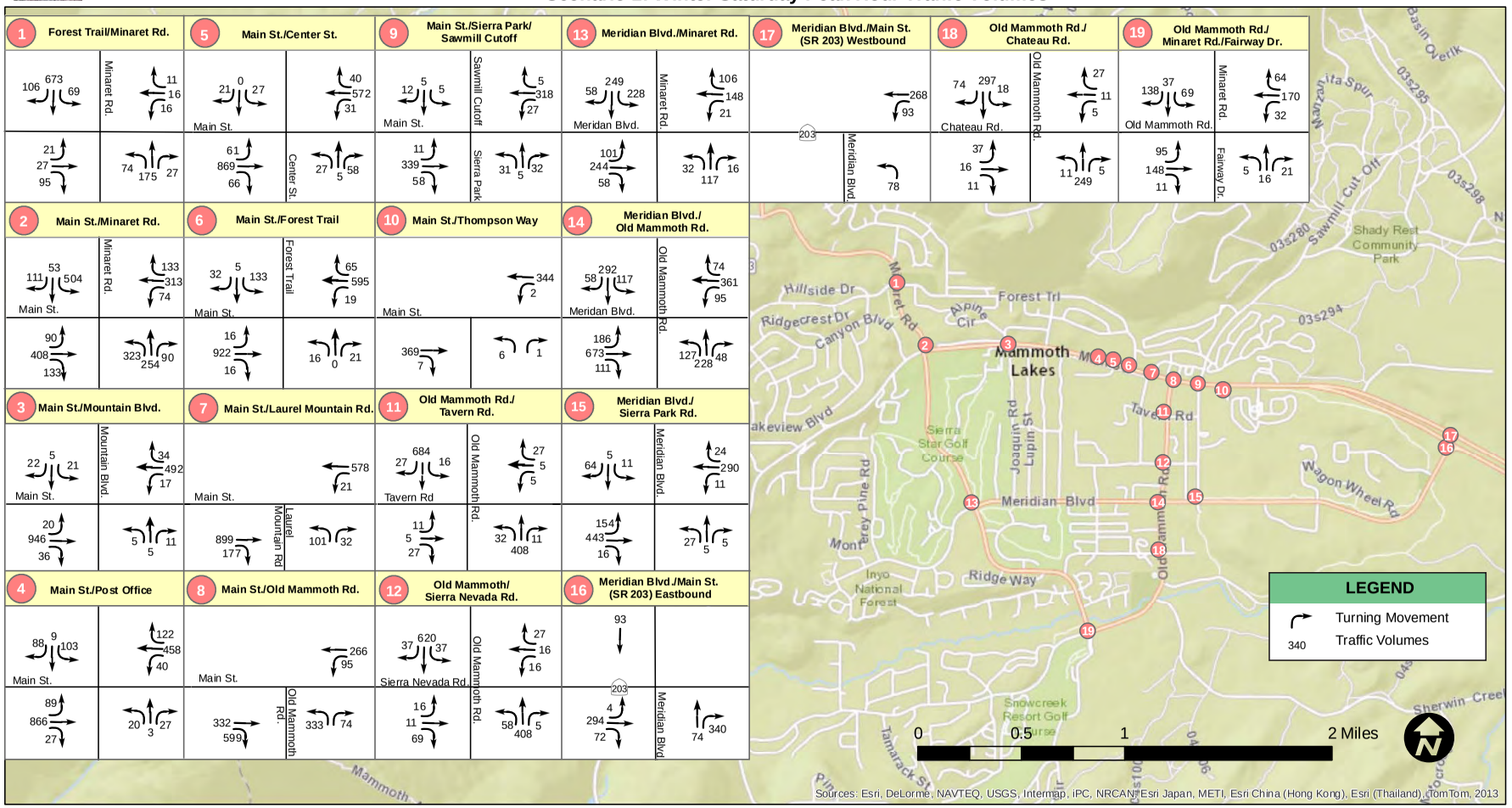
The summer peak-hour volumes were then compared to the existing winter peak-hour volumes. Of the 15 locations compared, winter volumes were higher at 12 locations and nearly the same at one location (the Main Street/Old Mammoth Road intersection). At the two intersections of Main Street/Sierra Park Road and Meridian Boulevard/Sierra Park Road the summer volumes were 25 and 32 percent, higher in the summer, respectively. Given that winter Saturday peak-hour traffic volumes are generally higher than summer peak-hour volumes; this analysis focuses on winter Saturday peak-hour conditions but peak hour level of service was calculated for summer for both Main Street/Sierra Park Road and Meridian Boulevard/Sierra Park Road which is shown under Section 6 of this report.

Existing Transit Conditions

Eastern Sierra Transit Authority (ESTA) operates the following fare-free fixed route service for the Town of Mammoth Lakes year round, seven days a week.

Purple Line – This year-round route runs along SR 203, Sierra Park Road, Manzanita Road, Lupin Street, Minaret Road, Forest Trail, Hillside Drive, and Canyon Boulevard, with several key stops in between, such as Vons, Mammoth High School, Mammoth Hospital, Mammoth RV Park, Rite Aid, and The Village. The Purple Line also stops near the 395 Route/Mammoth

Figure 2
Scenario 1: Winter Saturday Peak Hour Traffic Volumes



Express stop at 1 Sierra Park Road, the YARTS stop and the Park & Ride lot. This line runs every 30 minutes between the hours of 7:00 AM and 6:00 PM.

Gray Line - This year-round route runs along Meridian Boulevard and Old Mammoth Road, with several notable stops, such as the College, the Skate Park, the Mammoth High School, the

Mammoth Hospital, Aspen Village, and Mammoth Creek Park. This line runs every 30 minutes between the hours of 7:00 AM and 6:00 PM.

In FY 2013/14 ESTA began contracting with Mammoth Mountain Ski Area (MMSA) for the operation of the winter ski shuttles. Generally, these routes operate from late November to late May (depending on the winter).

Red Line – This route runs between the Snowcreek Athletic Club and the Main Lodge, with stops serving Vons, Main Street, and The Village. The Red Line also stops near the 395 Route/ Mammoth Express stop and the Park & Ride lot. During winter months, this route runs every 15 minutes from 7:00 AM to 5:30 PM.

Blue Line – This route runs along Canyon Boulevard and Lakeview Boulevard between The Village and Canyon Lodge. The service runs every 15 minutes past the hour from 7:20 AM to 5:20 PM.

Green Line – This shuttle runs between Vons and Eagle Lodge every 15 minutes between the hours of 7:30 AM and 5:30 PM.

Yellow Line - This shuttle runs between The Village and Eagle Lodge every 15 minutes between 7:30 AM and 5:30 PM.

Orange Line – This route runs between The Village and Tamarack Cross Country Ski Center every 30 minutes between 8:30 AM and 5:15 PM.

Existing Bicycle and Pedestrian Conditions

Town of Mammoth Lakes Trail System Master Plan (MLTSMP), adopted October 19, 2011 focuses on non-motorized facilities for alternative forms of transportation, including pedestrians, bicyclists, and cross country skiers. The MLTSMP provides trails that connect and pass through a series of parks and open space areas, having numerous access points in and around the Town. Currently, approximately 8.5 miles of trails within the Town Boundary have been developed. Because of the significant existing and future traffic congestion in the Town and the relatively compact development pattern, non-motorized facilities can be more than recreational facilities. The trail system, which allows for pedestrian, cycling, and cross-country skiing use, reduces auto travel, as well as provides important recreational amenities for visitors and community residents.

Additionally, to further develop an extensive pedestrian facility system, the Town adopted a comprehensive Pedestrian Master Plan in March 2014 (formerly the Sidewalk Master Plan). The Pedestrian Master Plan guides the future development and enhancement of pedestrian facilities

within the Town and is intended to follow the General Plan Mobility Element goals, policies, and actions related to pedestrian infrastructure.

Section 3
Proposed Conditions

PROJECT DESCRIPTION

The Mobility Element proposes to expand the physical roadway network of Mammoth Lakes, provide intersection capacity-enhancing improvements (new signals and roundabouts), expand the existing transit system, and provide bicycle and pedestrian-related improvements. The other component of the project, the change in Floor Area Ratio, will result in additional future land use quantities (additional square footage and units).

Mobility Element Roadway Network

The Mobility Element proposes to increase connectivity throughout the town by providing the following changes and additions to the roadway network:

- Removal of frontage roads along Main Street between Laurel Mountain Road and Manzanita Road.
- Addition of connections on the U.S. Forest Service property in the area north of Main Street.
- Extend Thompson Way between Main Street and Sierra Nevada Road.
- Extend Tavern Road to new Thompson Way.
- Extend Sierra Nevada Road to provide access to school area.
- Extend Sierra Park Road south to Sherwin Creek Road.
- Provide connections within Shady Rest Site between Center Street, Tavern Road, Dorrance Drive and Chaparral Road/Arrowhead Drive.
- Extend Callahan Way south to Dorrance Drive.
- Connect Waterford Avenue over Mammoth Creek.
- Extend East Bear Lake Drive to Minaret Road and Main Street.

The proposed roadway network is illustrated in the Mobility Plan Figure 3-2, included in Appendix B.

In addition, the Mobility Element includes the following intersection improvements:

- Main Street/Post Office (or alternate intersection): Implement traffic signal.
- Sierra Park Boulevard/Meridian Boulevard: Implement traffic signal.

Mobility Element Transit System

The Mobility Element suggests a general increase in transit will occur along with new development. The following specific transit improvements are assumed in this analysis:

- Extend the Grey Line south into Snowcreek.

- Add a new route between downtown and the airport with limited stops and one hour headways.

Mobility Element Bicycle and Pedestrian System

The Mobility Element includes planned Class II bike lanes, Class III bike routes, and future multi-use paths. It also identifies key pedestrian routes that should receive priority investment and locations where infrastructure improvements should be strategically pursued.

Proposed Land Use Changes

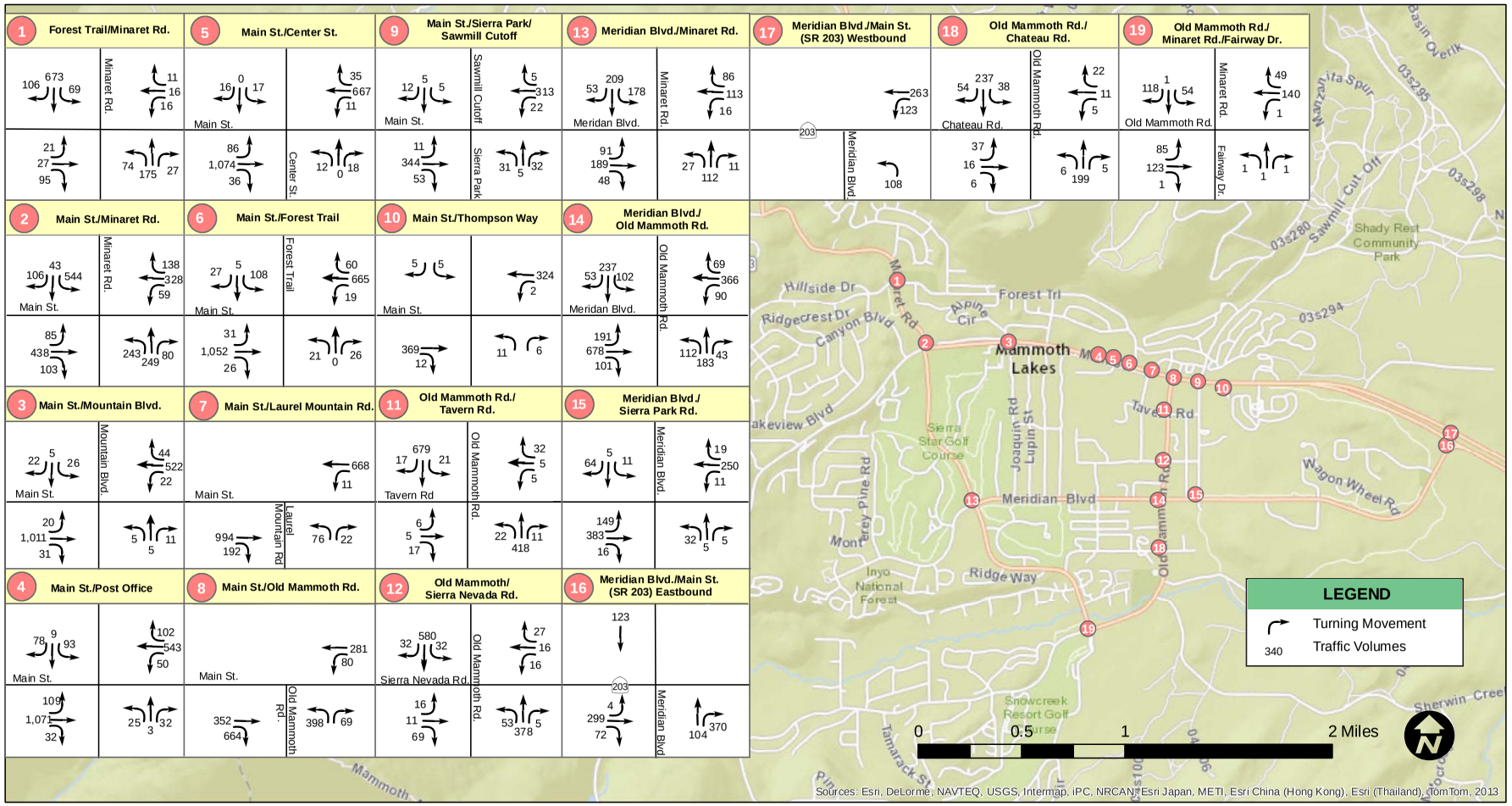
Original buildout land uses were developed as a part of the Town of Mammoth Lakes Travel Model (LSC Transportation Consultants, Inc., 2011) based on the 2007 General Plan and the 2009 Draft Housing Element. These future base-case land uses were not changed as a part of this project and are shown in Appendix C.

The proposed new Floor Area Ratio (FAR) occurs in two commercial zones, and it is assumed it will result in an increase in land use quantities (specifically Multi-Family Units, Lodging Units and Retail/Commercial area) as compared to the original buildout land uses. Note the land use types allowed in the commercial zones does not change only the number of unit or floor area of each land use. The future land use assumptions with the proposed new FAR (the *new FAR land uses*) are shown in Appendix C.

Scenario 2: Existing Traffic Volumes with Mobility Element

The effect of the Mobility Element on existing traffic conditions was analyzed using the Town's TransCAD model. The change in traffic volumes associated with the proposed Mobility Element roadway network and transit system improvements were added to the existing volumes to estimate the 'existing with Mobility Element' volumes shown in Figure 3.

Figure 3
Scenario 2: Existing Winter Saturday Peak Hour Traffic Volumes Plus Mobility Element



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Section 4
Future Cumulative Conditions

The following future cumulative scenarios are analyzed to determine the effect of the Mobility Element and the new FAR land uses:

- Scenario 3 – Buildout Land Uses with Existing Roadways and Transit Service
- Scenario 4 – Buildout Land Uses with Mobility Element Roadways and Transit Service
- Scenario 5 - New FAR Land Uses with Existing Roadways and Transit Service
- Scenario 6 - New FAR Land Uses with Mobility Element Roadways and Transit Service

The Mammoth Lakes Travel Model using the TransCAD 5.0 software was used to estimate all future scenarios. This computer software program is widely used throughout the country to prepare city-wide and regional traffic forecasts. It is a "gravity model", in that it forecasts traffic between various areas of Mammoth Lakes in a fashion similar to Sir Isaac Newton's formula for the gravitational force between planets. Just like gravitational force is directly proportionate to the mass of two planets and inversely proportionate to the distance between the two planets, the TransCAD model forecasts the number of trips based directly on the land use quantities in each area and inversely on the travel time/distance between areas. In addition, the TransCAD model uses a "logit model" function to allocate individual passenger-trips between the transit and auto modes, based upon the relative ease of travel between specific origins and destinations by each mode. The model then iteratively balances trip productions and attractions and assigns vehicle trips to individual roadway and turning movements to result in a balanced forecast of all vehicle-trips (and transit passenger-trips) throughout the Mammoth Lakes roadway network.[1]

The Mammoth Lakes area is represented in the model in the form of 167 "Traffic Analysis Zones" (TAZs). In addition, the model includes external point representing the roadways into and out of Mammoth Lakes. Roadway and transit route networks are entered into the model, as defined by roadway capacity, free-flow travel speed, transit speed, and transit capacity.

Details of the modeling processes are as follows:

- For each scenario, the appropriate land uses are identified in each TAZ.
- The land uses quantities are input into the model either the Buildout land uses or the New FAR land uses.
- The model then applies the trip generation rates (as shown in Appendix C) to the land use quantities.

[1] Much more background information regarding the model can be found in the *Town of Mammoth Lakes Travel Model* document, prepared by LSC in February 2011.

- The result is the number of person trips for each scenario, 184,096 trips were generated under scenarios with the buildout land uses and 195,460 trips generated under scenarios with new FAR land uses.

- The model then splits the person trips into a travel mode which is either automobile or transit based on travel times and roadway capacity.

- Origins and destinations are the trips are then balanced and trips are assigned to roadways and transit routes. Pass-by trips and linked trips are created in this process.

The existing roadway network and transit system parameters in the TransCAD model were updated to reflect Year 2015 conditions. The growth between the existing model volumes and each model run was added to the existing turning movement volumes. The resulting winter Saturday PM peak-hour intersection volumes for Scenarios 3 through 6 are shown in Figures 4-7.

Conclusions about the future scenarios that include the mobility element are conservatively high. In that the addition of new bicycle and pedestrian facilities is not reflected in the modeling process. The trip generation rates account for existing bicycle and pedestrian use in that the trip generation is lower than it would be if there were no bicycle or pedestrian trips.

Figure 4
Scenario 3: Future Winter Saturday Peak Hour Traffic Volumes with Buildout Land Uses and Existing Roadway Network

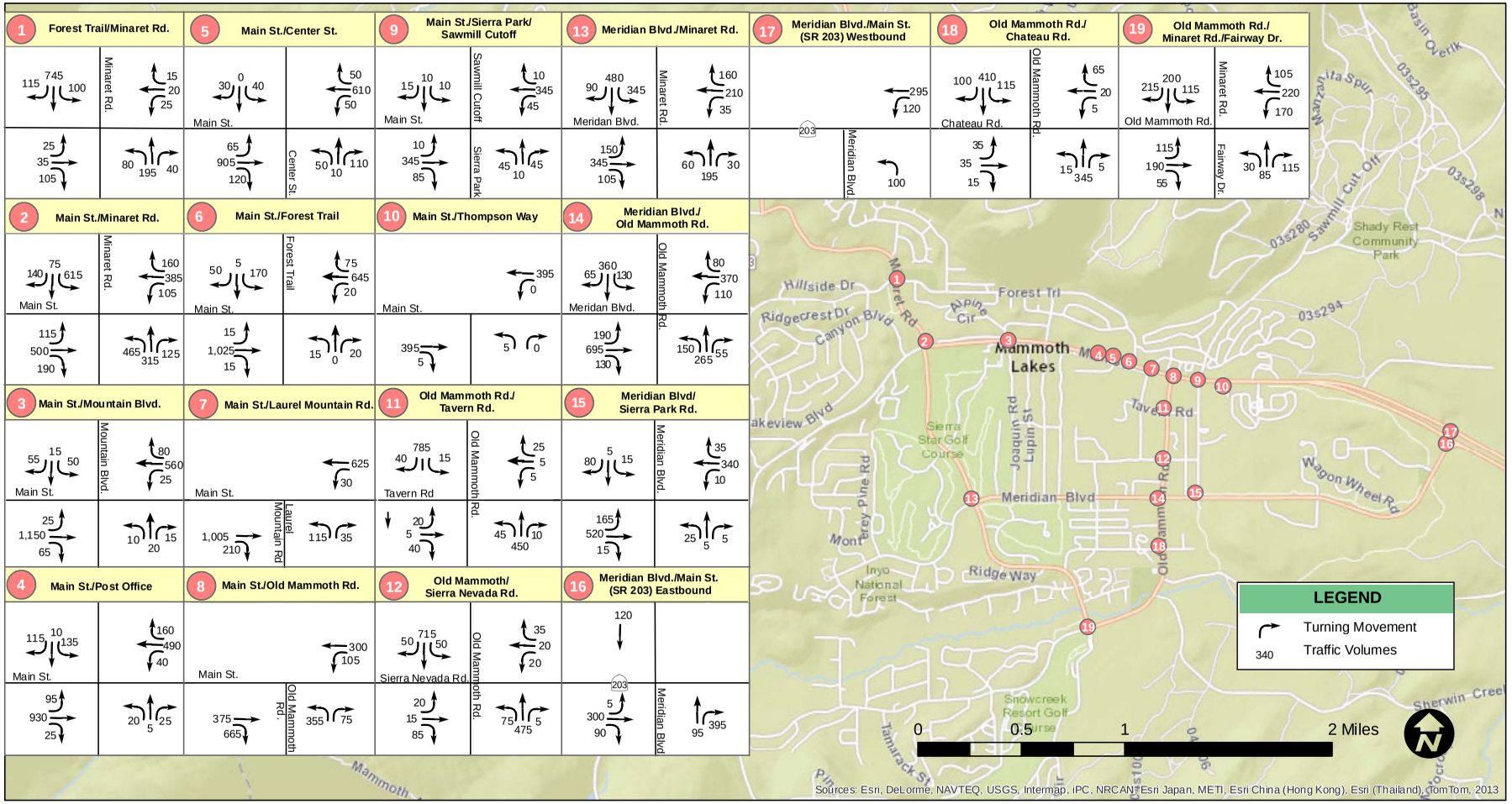


Figure 5
Scenario 4: Future Winter Saturday Peak Hour Traffic Volume with Buildout Land Uses with Mobility Plan

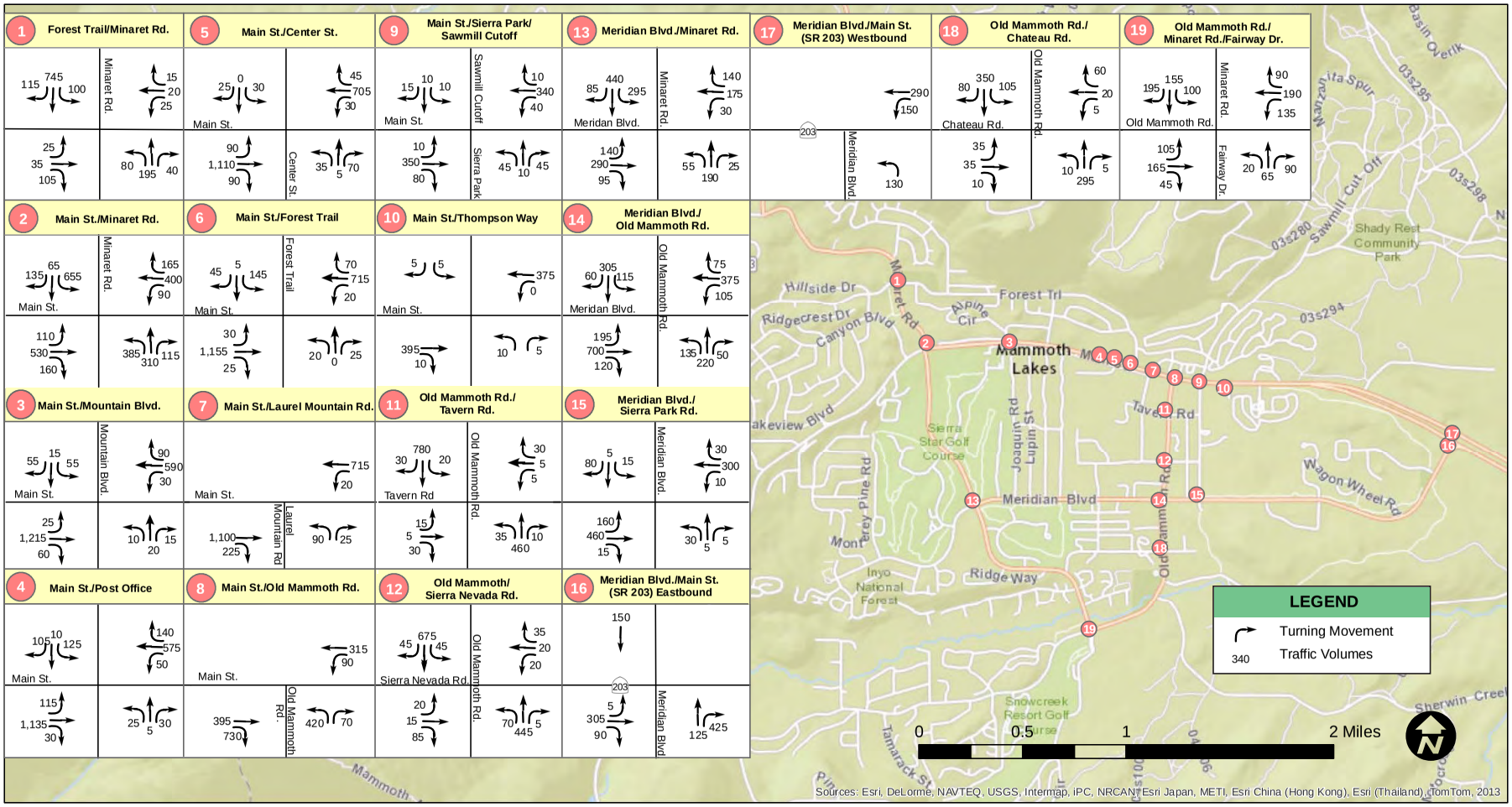


Figure 6
Scenario 5 :Future Winter Saturday Peak Hour Traffic Volumes with New FAR Land Uses and Existing Roadway Network

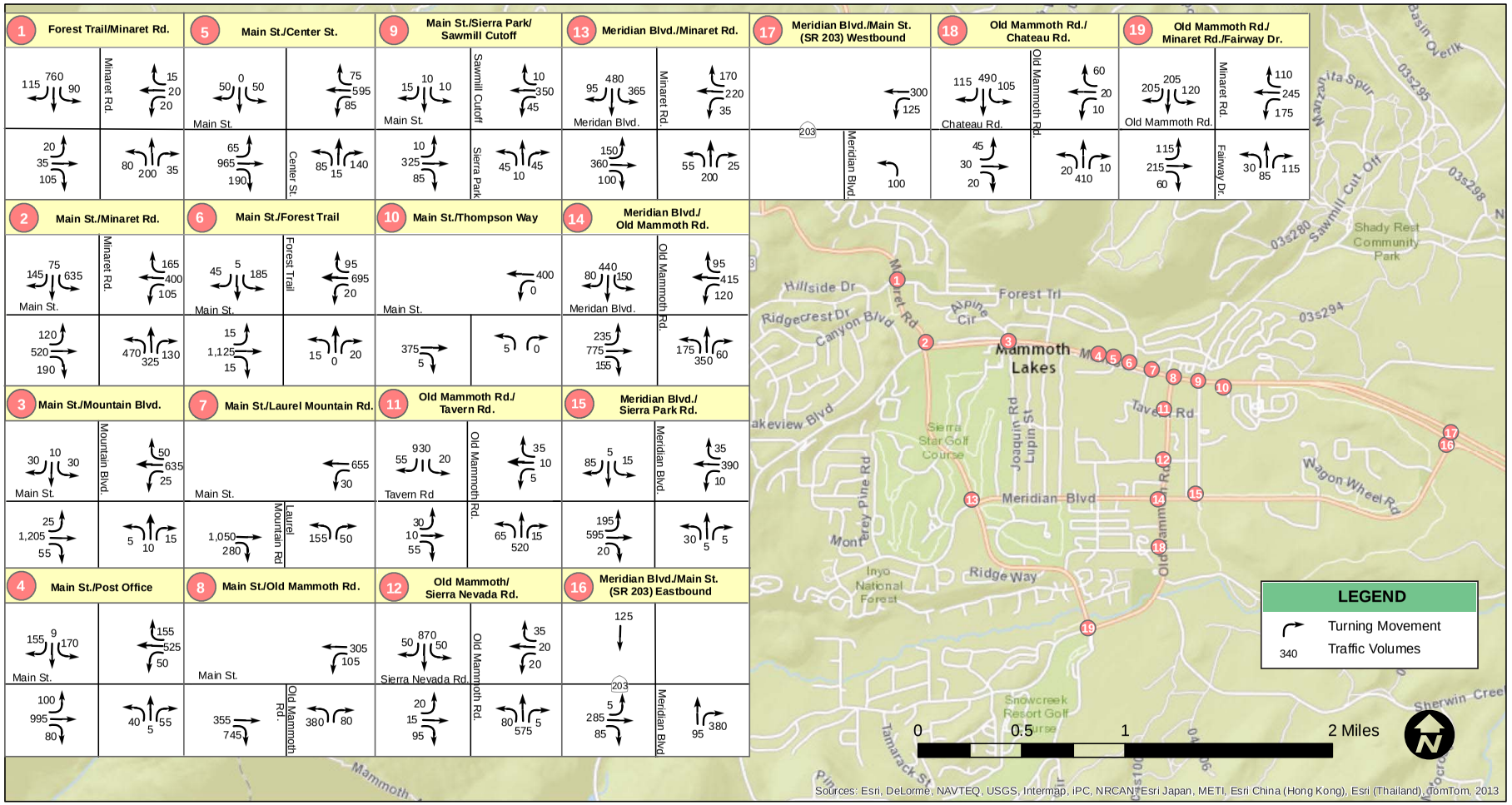
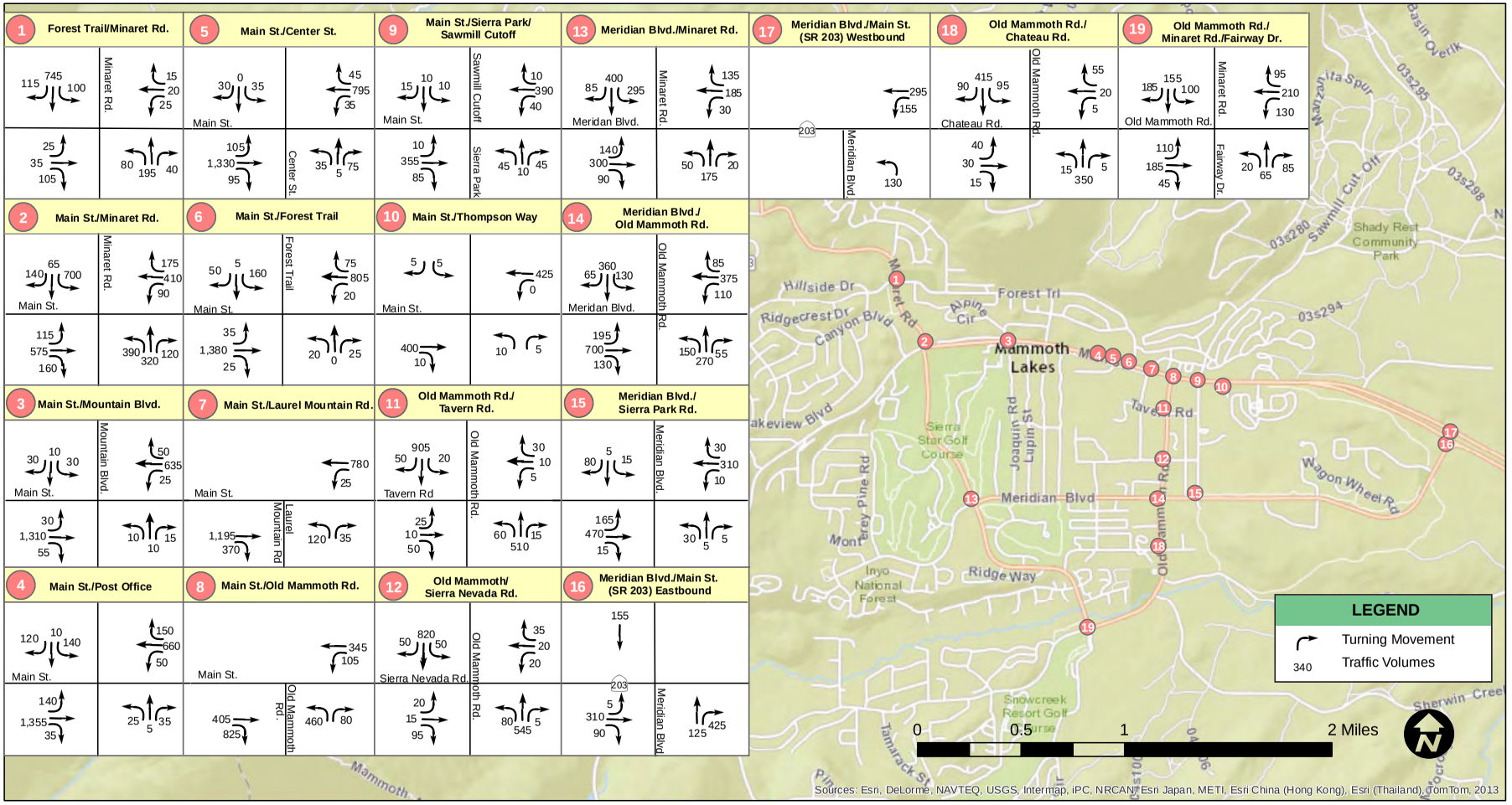


Figure 7
Scenario 6: Future Winter Saturday Peak Hour Traffic Volume with New FAR Land Uses and Mobility Element



Section 5
Level of Service Analysis

The concept of Level of Service is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. A Level of Service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Six levels of service are defined for each type of roadway facility. They are given letter designations, from A to F, with Level of Service A representing the best operating conditions and Level of Service F the worst. Detailed LOS descriptions are provided in Appendix D.

Level of Service (LOS) is evaluated at the study intersections, as well as roadway capacity in the study area. First, the applicable intersection LOS standards are described. Next, the LOS methodology is discussed, and the LOS analysis is summarized for each study scenario. Finally, roadway capacity is evaluated for all study scenarios.

LEVEL OF SERVICE STANDARDS

The *Town of Mammoth Lakes General Plan Transportation Element*, adopted in 2001, currently contains the following Policy:

Policy 1.7: Establish and maintain a Level of Service D or better on a typical winter Saturday peak hour for signalized intersections and for primary through movements for unsignalized intersections along arterial and collector roads. This standard is expressly not applied to absolute peak conditions, as it would result in construction of roadway improvements that are warranted only a limited number of days per year and that would unduly impact pedestrian and visual conditions.

Therefore, the following LOS thresholds were applied in the General Plan traffic analysis:

- **For Signalized Intersections:** Total intersection LOS D or better must be maintained. Therefore, if a signalized intersection is found to operate at a total intersection LOS E or F, mitigation is required. It is assumed that this same threshold applies to roundabouts.

- **For Unsignalized Intersections:** In order to avoid the identification of a LOS failure for intersections that result in only a few vehicles experiencing a delay greater than 50 seconds (such as at a driveway serving a few homes that accesses onto a busy street), a LOS deficiency is *not* identified for all intersections with approach LOS E or F. Instead, a LOS deficiency is assumed to occur at an unsignalized intersection only if an individual minor street movement operates at LOS E or F *and* total minor approach delay exceeds four vehicle hours for a single lane approach and five vehicle hours for a multi-lane approach. In other words, a deficiency is found to occur if the average number of vehicles queued over the peak-hour exceeds four at a single-lane approach, or exceeds five at a multi-lane approach. Traffic operations at the study intersections were assessed in terms of Level of Service (LOS) and delay.

The same thresholds are applied in this analysis.

LEVEL OF SERVICE ANALYSIS METHODOLOGY

Intersection LOS was evaluated using Synchro software (Version 8.0, Trafficware 2013) based on the *2010 Highway Capacity Manual* methodologies at all study intersections. LOS at the existing stop-controlled divided highway intersections of SR 203/Meridian Boulevard was analyzed using the HCS 2010 software.

For signalized intersections, LOS is primarily measured in terms of average delay per vehicle entering the intersection. LOS at unsignalized intersections is quantified in terms of delay per vehicle for each movement. The unsignalized intersection LOS is based upon the theory of gap acceptance for side-street stop sign-controlled approaches, while signalized intersection LOS is based upon the assessment of volume-to-capacity ratios and control delay.

LEVEL OF SERVICE ANALYSIS

Intersection LOS was evaluated at all study intersections for all six study scenarios, and the results are summarized in Table 1. Appendix D presents the actual output from each of the LOS calculations for the study intersections.

Scenario 1 - 2015 Existing Conditions

Study intersections were evaluated to determine existing operational conditions during the typical Saturday winter PM peak hour. Using the traffic volumes presented as part of this study, it is possible to evaluate the LOS provided during this period at the intersections serving the study area. As the table indicates, the LOS at all the study intersections is within the Town's Level of Service standards.

Scenario 2 - Existing Conditions with Mobility Element

The study intersections were evaluated to determine operational conditions with Scenario 2 traffic volumes. As Table 1 indicates, intersection LOS standards are not exceeded at any of the study intersections under Scenario 2. Rather, average delays are expected to slightly decrease at some locations with implementation of the Mobility Element improvements.

Scenario 3 - Buildout Land Uses with Existing Roadways and Transit Service

Implementation of the future development assumed under Scenario 3 would generally increase average intersection delays and the LOS at some intersections would degrade. However, intersection LOS standards are not exceeded at any of the study intersections, with the following two exceptions:

- Main Street/Mountain Boulevard
- Old Mammoth Road/Minaret Road/Fairway Drive

TABLE 1: Mammoth Mobility Element - Intersection Level of Service

			Scenario 1			Scenario 2			Scenario 3			Scenario 4			Scenario 5			Scenario 6		
			Existing Conditions			Existing with Mobility Element			Future Buildout with Existing Network			Future Buildout with Mobility Element			Future FAR Land Uses with Existing Network			Future FAR Land Uses with Mobility Element		
	Intersection	Traffic Control[1]	Delay	Veh-Hrs	LOS	Delay	Veh-Hrs	LOS	Delay	Veh-Hrs	LOS	Delay	Veh-Hrs	LOS	Delay	Veh-Hrs	LOS	Delay	Veh-Hrs	LOS
1	Minaret Road / Forest Trail	Stop-Control	70.3	0.9	F	54.6	0.7	F	180.6	3.0	F	180.6	3.0	F	140.6	2.2	F	180.6	3.0	F
2	Minaret Road / Lake Mary Road / Main Street	Traffic Signal	29.4	--	C	26.3	--	C	45.4	--	D	41.2	--	D	47.2	--	D	44.8	--	D
3	Mountain Blvd / Main Street	Stop-Control	35.8	0.2	E	36.8	0.2	E	**266.5**	**8.9**	**F**	**529.0**	**18.4**	**F**	132.3	2.6	F	**231.5**	**4.5**	**F**
4	Main Street / Post Office	Stop-Control	57.2	1.8	F	82.0	2.3	F	84.6	3.4	F	**189.8**	**7.1**	**F**	**308.4**	**17.1**	**F**	**531.3**	**22.1**	**F**
5	Center Street / Main Street	Stop-Control	27.5	--	D	27.2	--	D	42.1	2.0	E	45.2	1.4	E	**179.2**	**12.0**	**F**	94.5	3.0	F
6	Forest Trail / Main Street	Stop-Control	47.2	1.8	E	45.1	1.4	E	70.5	3.4	F	85.2	3.6	F	**116.4**	**6.1**	**F**	**191.5**	**8.8**	**F**
7	Laurel Mountain Road / Main Street	Stop-Control	38.3	1.4	E	31.6	--	D	49.6	2.1	E	47.3	1.5	E	**121.0**	**6.9**	**F**	**129.2**	**5.6**	**F**
8	Old Mammoth Road / Main Street	Traffic Signal	11.1	--	B	11.4	--	B	11.4	--	B	12.3	--	B	12.2	--	B	14.0	--	B
9	Sierra Park Blvd / Main Street	Stop-Control	14.4	--	B	13.9	--	B	15.5	--	C	15.3	--	C	15.3	--	C	15.8	--	C
10	Main Street / Thompson	Stop-Control	11.8	--	B	11.5	--	B	11.4	--	B	11.3	--	B	11.3	--	B	11.4	--	B
11	Old Mammoth Road / Tavern Road	Stop-Control	26.7	--	D	22.3	--	C	37.9	0.7	E	34.0	--	D	**160.7**	**4.2**	**F**	102.4	2.4	F
12	Old Mammoth Road / Sierra Nevada Road	Stop-Control	42.7	0.7	E	29.2	--	D	88.3	1.8	F	62.9	1.3	F	**289.2**	**6.0**	**F**	**204.4**	**4.3**	**F**
13	Minaret Road / Meridian Blvd	Traffic Signal	20.5	--	C	19.4	--	B	30.9	--	C	26.1	--	C	30.9	--	C	25.9	--	C
14	Old Mammoth Road / Meridian Blvd	Traffic Signal	29.9	--	C	24.4	--	C	34.0	--	C	29.7	--	C	47.9	--	D	34.0	--	C
15	Sierra Park Blvd / Meridian Blvd	All-Way-Stop	17.4	--	C	14.3	--	B	20.8	--	C	17.5	--	C	31.7	--	D	18.2	--	C
16	Main Street Eastbound / Meridian Blvd	Stop-Control	13.4	--	B	13.7	--	B	14.0	--	B	14.9	--	B	13.8	--	B	15.1	--	C
17	Main Street Westbound / Meridian Blvd	Stop-Control	11.9	--	B	13.0	--	B	13.0	--	B	14.8	--	B	13.2	--	B	15.2	--	C
18	Old Mammoth Road / Chateau Road	Stop-Control	19.9	--	C	15.3	--	C	47.1	1.1	E	32.3	--	D	85.6	2.3	F	42.5	1.0	E
19	Old Mammoth Road/ Minaret Road/Fairway Drive	Stop-Control	20.4	--	C	14.1	--	B	**OVF**	**OVF**	**F**	**128.1**	**6.2**	**F**	**OVF**	**OVF**	**F**	**191.3**	**9.0**	**F**
	MITIGATED	**Mitigation Measure**																		
3	Mountain Blvd / Main Street	Traffic Signal [3]							12.1	--	B	12.9	--	B				300.4	3.3	F
4	Main Street / Post Office	Traffic Signal										15.7	--	B	19.6	--	B	18.0	--	B
5	Center Street / Main Street	Add NB-RT Lane													122.0	3.4	F			
6	Forest Trail / Main Street	Prohibit SBLT; or Traffic Signal [4]													13.1	--	B	14.1	--	B
7	Laurel Mountain Road / Main Street	Add NB-RT Lane													95.2	4.1	F	109.3	3.6	F
11	Old Mammoth Road / Tavern Road	Add EB RT Lane													182.9	2.0	F			
12	Old Mammoth Road / Sierra Nevada Road	Add EB&WB RT Lanes													313.7	3.5	F	235.4	2.6	F
15	Sierra Park Blvd / Meridian Blvd	Traffic Signal[2]										13.3	--	B				13.4	--	B
19	Old Mammoth Road/ Minaret Road/Fairway Drive	Roundabout							13.8	--	B	10.0	--	A	14.6	--	B	10.1	--	B

Bold indicates that LOS standard has been exceeded.
OVF = Overflow, which indicates a significant delay for which HCM 2010 methodology cannot accurately predict delay.
Note: NB=northbound; SB=southbound; EB=eastbound; WB=westbound; LT=left-turn; RT=right-turn
Note 1: LOS is reported as total intersection delay for signalized intersection and worst movement/approach for unsignalized intersections and roundabouts.
Note 2: Although this improvement is included in the Mobility Element, it is not needed from an LOS perspective.
Note 3: Under Scenario 6, the Mountain Boulevard/Main Street intersection can be mitigated by adding a southbound right-turn lane to the existing configuration.
Note 4: LOS is shown for traffic signal option.
Source: LSC Transportation Consultants, Inc.

Mammoth Mobility LOS.xlsx

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Both of these unsignalized intersections would degrade to unacceptable levels under this scenario.

Scenario 4 - Buildout Land Uses with Mobility Element Roadways and Transit Service

As Table 1 indicates, intersection LOS standards are not exceeded at any of the study intersections under Scenario 4, with the following three exceptions:

- Main Street/Mountain Boulevard
- Main Street/Post Office
- Old Mammoth Road/Minaret Road/Fairway Drive

These three intersections would operate at unacceptable levels under this scenario. A comparison with Scenario 3 indicates that implementation of the Mobility Element under future cumulative conditions would not cause any intersections to degrade from acceptable to unacceptable levels except the unsignalized Main Street/Post Office intersection.

Scenario 5 – Buildout with New FAR Land Uses with Existing Roadways/Transit Service

The study intersections were evaluated to determine operational conditions under Scenario 5 conditions. As the table indicates, intersection LOS standards are exceeded at the following intersections under Scenario 5:

- Main Street/Post Office
- Main Street/Center Street
- Main Street/Forest Trail
- Main Street/Laurel Mountain Road
- Old Mammoth Road/Tavern Road
- Old Mammoth Road/Sierra Nevada Road
- Old Mammoth Road/Minaret Road/Fairway Drive

Comparing this scenario to Scenario 3 (without new FAR) indicates that implementation of the new FAR land uses would degrade the LOS from acceptable to unacceptable at six intersections. A beneficial impact of the new FAR is that it would improve the LOS at the unsignalized Main Street/Mountain Boulevard intersection from an unacceptable level to an acceptable level under the existing roadway network.

Scenario 6 – Buildout with New FAR Land Uses with Mobility Element

As indicated in the far right columns in the table, intersection LOS standards are exceeded at the following study intersections under Scenario 6:

- Main Street/Mountain Boulevard intersection
- Main Street/Post Office
- Main Street/Forest Trail
- Main Street/Laurel Mountain Road

- Old Mammoth Road/Sierra Nevada Road
- Old Mammoth Road/Minaret Road/Fairway Drive

Comparing this scenario to Scenario 4 (without new FAR) indicates that implementation of the new FAR land uses would degrade the LOS from acceptable to unacceptable at four intersections. In comparison with Scenario 5 (without Mobility Element) implementation of the Mobility Element would degrade the LOS at the unsignalized Main Street/Mountain Boulevard intersection from an acceptable level to an unacceptable level under the new FAR scenarios. However, with the new FAR land uses, a positive impact of the Mobility Element is that the Main Street/Center Street and Old Mammoth Road/Tavern Road intersections would improve to acceptable levels.

ROADWAY CAPACITY

First, the methodology for estimating roadway capacity is described. Next, the roadway capacity analysis for all study scenarios is presented.

Roadway Capacity Methodology

The capacity of the roadways within Mammoth Lakes was estimated as follows:

1. A base saturation flow rate of 1,600 vehicles per hour per direction was assumed. This figure is slightly lower than is typically observed in urban areas, representing the reduction in effective capacity that results from both visitor drivers that are unfamiliar with the area, as well as the impacts of winter driving conditions. It is consistent with observed capacity in the Tahoe Region, which is similarly affected by visitor drivers.

2. According to Chapter 10 (Urban Street Concepts) of the *Highway Capacity Manual*, the default directional lane split for roadways with two lanes per direction is 52.5 percent in one lane and 47.5 percent in the other. Therefore, as no recent count data is available to determine the actual lane split, for roadways with two lanes in each direction, these assumptions are applied.

3. Reductions to roadway capacity were made, as required on individual segments, to account for the presence of pedestrian crossings, on-street parking maneuvers, vehicles searching for parking spaces, and conflicting driveway turning movements.

4. The resulting roadway capacities are shown in Table 2. Please note, however, that the roadway capacities applied in this study are for planning purposes only and are only based upon estimated effects of pedestrians, parking maneuvers, and driveway turning-movement conflicts.

It should also be noted that, consistent with standard analysis procedures elsewhere, level of service and capacity were not adjusted to account for snow conditions. The occurrence of stormy/snowy weather conditions and snow on the roadways occurs over a relatively small proportion of the winter and vehicle traffic generally decreases significantly in inclement

TABLE 2: Mammoth Mobility Element - Roadway Capacity

Street Name	from	to	Direction	Capacity (vehicles per hour)	Existing Peak Hour Volume	Existing V/C	Scenario 2 Peak Hour Volume	Scenario 2 V/C	Scenario 3 Peak Hour Volume	Scenario 3 V/C	Scenario 4 Peak Hour Volume	Scenario 4 V/C	Scenario 5 Peak Hour Volume	Scenario 5 V/C	Scenario 6 Peak Hour Volume	Scenario 6 V/C
Main Street	Canyon	Minaret	Eastbound	2600	631	0.24	626	0.24	805	0.31	800	0.31	830	0.32	850	0.33
	Minaret	Canyon	Westbound	2600	747	0.29	677	0.26	990	0.38	920	0.35	1,015	0.39	940	0.36
	Minaret	Mountain	Eastbound	2600	1,002	0.39	1,062	0.41	1,240	0.48	1,300	0.50	1,285	0.49	1,395	0.54
	Mountain	Minaret	Westbound	2600	520	0.20	525	0.20	650	0.25	655	0.25	670	0.26	675	0.26
	Sierra	Mountain	Westbound	2600	543	0.21	588	0.23	665	0.26	710	0.27	710	0.27	710	0.27
	Sierra	Post Office	Eastbound	2600	982	0.38	1,212	0.47	1,050	0.40	1,280	0.49	1,175	0.45	1,530	0.59
	Post Office	Center	Eastbound	2600	996	0.38	1,196	0.46	1,090	0.42	1,290	0.50	1,220	0.47	1,530	0.59
	Center	Post Office	Westbound	2600	620	0.24	695	0.27	690	0.27	765	0.29	730	0.28	860	0.33
	Center	Forest Trail	Eastbound	2600	954	0.37	1,109	0.43	1,055	0.41	1,210	0.47	1,155	0.44	1,440	0.55
	Forest Trail	Center	Westbound	2600	643	0.25	713	0.27	710	0.27	780	0.30	755	0.29	875	0.34
	Forest Trail	Laurel Mountain	Eastbound	2600	1,076	0.41	1,186	0.46	1,215	0.47	1,325	0.51	1,330	0.51	1,565	0.60
	Laurel Mountain	Forest Trail	Westbound	2600	679	0.26	744	0.29	740	0.28	805	0.31	810	0.31	900	0.35
	Laurel Mountain	Old Mammoth	Eastbound	2600	931	0.36	1,016	0.39	1,040	0.40	1,125	0.43	1,100	0.42	1,230	0.47
	Old Mammoth	Laurel Mountain	Westbound	2600	599	0.23	679	0.26	655	0.25	735	0.28	685	0.26	805	0.31
	Old Mammoth	Sierra Park	Eastbound	2600	408	0.16	408	0.16	440	0.17	440	0.17	420	0.16	450	0.17
	Sierra Park	Old Mammoth	Westbound	2600	361	0.14	361	0.14	405	0.16	405	0.16	410	0.16	450	0.17
	Sierra Park	Thompson	Eastbound	2600	376	0.14	381	0.15	400	0.15	405	0.16	380	0.15	410	0.16
	Thompson	Sierra Park	Westbound	2600	350	0.13	340	0.13	400	0.15	390	0.15	405	0.16	440	0.17
	East of	Thompson	Eastbound	2600	370	0.14	380	0.15	395	0.15	405	0.16	375	0.14	410	0.16
			Westbound	2600	346	0.13	326	0.13	395	0.15	375	0.14	400	0.15	425	0.16
Minaret Road	North of	Main	Southbound	1300	668	0.51	693	0.53	830	0.64	855	0.66	855	0.66	905	0.70
			Northbound	1300	477	0.37	472	0.36	590	0.45	585	0.45	610	0.47	610	0.47
	South of	Main	Northbound	1600	667	0.42	572	0.36	905	0.57	810	0.51	925	0.58	830	0.52
			Southbound	1600	260	0.16	205	0.13	370	0.23	315	0.20	370	0.23	315	0.20
	North of	Meridian	Southbound	1600	535	0.33	440	0.28	915	0.57	820	0.51	920	0.58	780	0.49
			Northbound	1,600	324	0.20	289	0.18	505	0.32	470	0.29	520	0.33	450	0.28
	South of	Meridian	Northbound	1,600	165	0.10	150	0.09	285	0.18	270	0.17	280	0.18	245	0.15
			Southbound	1,600	328	0.21	273	0.17	620	0.39	565	0.35	595	0.37	520	0.33
	North of	Old Mammoth	Southbound	1,600	244	0.15	173	0.11	530	0.33	450	0.28	530	0.33	440	0.28
			Northbound	1,600	175	0.11	135	0.08	305	0.19	260	0.16	310	0.19	270	0.17
	North of	Forest Trail	Southbound	1,600	848	0.53	848	0.53	960	0.60	960	0.60	965	0.60	960	0.60
			Northbound	1,600	207	0.13	207	0.13	235	0.15	235	0.15	235	0.15	235	0.15
	South of	Forest Trail	Northbound	1,300	276	0.21	276	0.21	315	0.24	315	0.24	315	0.24	315	0.24
			Southbound	1,300	784	0.60	784	0.60	875	0.67	875	0.67	885	0.68	875	0.67
Forest Trail	East of	Minaret	Westbound	800	43	0.05	43	0.05	60	0.08	60	0.08	55	0.07	60	0.08
			Eastbound	800	123	0.15	123	0.15	175	0.22	175	0.22	160	0.20	175	0.22
	West of	Minaret	Eastbound	800	143	0.18	143	0.18	165	0.21	165	0.21	160	0.20	165	0.21
			Westbound	800	196	0.25	196	0.25	215	0.27	215	0.27	215	0.27	215	0.27
	North of	Main	Southbound	800	170	0.21	140	0.18	225	0.28	195	0.24	235	0.29	215	0.27
			Northbound	800	81	0.10	91	0.11	90	0.11	100	0.13	110	0.14	110	0.14
Meridian Blvd	West of	Minaret	Eastbound	2,600	403	0.16	328	0.13	600	0.23	525	0.20	610	0.23	530	0.20
			Westbound	2,600	238	0.09	193	0.07	360	0.14	315	0.12	370	0.14	320	0.12
	East of	Minaret	Westbound	1,600	275	0.17	215	0.13	405	0.25	345	0.22	425	0.27	350	0.22
			Eastbound	1,600	488	0.31	378	0.24	720	0.45	610	0.38	750	0.47	615	0.38
	West of	Old Mammoth	Eastbound	1,600	970	0.61	970	0.61	1,015	0.63	1,015	0.63	1,165	0.73	1,025	0.64
			Westbound	1,600	546	0.34	531	0.33	585	0.37	570	0.36	670	0.42	590	0.37
	Old Mammoth	Sierra Park	Eastbound	2,600	838	0.32	823	0.32	880	0.34	865	0.33	985	0.38	885	0.34
	Sierra Park	Old Mammoth	Westbound	2,600	530	0.20	525	0.20	560	0.22	555	0.21	630	0.24	570	0.22
	East of	Sierra Park	Westbound	1,600	325	0.20	280	0.18	385	0.24	340	0.21	435	0.27	350	0.22
			Eastbound	1,600	459	0.29	399	0.25	540	0.34	480	0.30	615	0.38	490	0.31
	South of	Main	Northbound	1,600	414	0.26	474	0.30	490	0.31	550	0.34	475	0.30	550	0.34
			Southbound	1,600	165	0.10	195	0.12	210	0.13	240	0.15	210	0.13	245	0.15
Old Mammoth Road	Tavern	Main	Northbound	1,600	446	0.28	467	0.29	495	0.31	505	0.32	585	0.37	565	0.35
	Main	Tavern	Southbound	1,600	727	0.45	744	0.47	840	0.53	830	0.52	1,005	0.63	975	0.61
	Sierra Nevada	Tavern	Northbound	1,600	451	0.28	451	0.28	530	0.33	505	0.32	630	0.39	600	0.38
	Tavern	Sierra Nevada	Southbound	1,600	716	0.45	701	0.44	830	0.52	815	0.51	990	0.62	960	0.60
	Meridian	Sierra Nevada	Northbound	1,600	488	0.31	443	0.28	555	0.35	520	0.33	680	0.43	630	0.39
	Sierra Nevada	Meridian	Southbound	1,600	705	0.44	665	0.42	820	0.51	780	0.49	985	0.62	935	0.58
	Chateau	Meridian	Northbound	1,600	403	0.25	338	0.21	470	0.29	405	0.25	585	0.37	475	0.30
	Meridian	Chateau	Southbound	1,600	498	0.31	428	0.27	625	0.39	535	0.33	715	0.45	600	0.38
	South of	Chateau	Northbound	1,300	265	0.20	365	0.28	365	0.28	310	0.24	440	0.34	440	0.34
			Southbound	1,300	313	0.24	430	0.33	430	0.33	365	0.28	520	0.40	520	0.40
Sierra Park Road	South of	Main	Northbound	1,300	68	0.05	68	0.05	100	0.08	100	0.08	100	0.08	100	0.08
			Southbound	1,300	90	0.07	80	0.06	140	0.11	130	0.10	140	0.11	135	0.10
	North of	Meridian	Southbound	1,300	80	0.06	80	0.06	100	0.08	100	0.08	105	0.08	100	0.08
			Northbound	1,300	183	0.14	173	0.13	205	0.16	195	0.15	235	0.18	200	0.15

Note: V/C = volume -to- capacity ratio.
Source: LSC Transportation Consultants, Inc.

Mammoth Mobility LOS.xlsx

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weather conditions. Furthermore, it would be speculative to try to determine the impact to roadway capacity resulting from stormy conditions, as conditions are unique to each storm, as is driver behavior. This approach is consistent with other traffic analyses and travel demand models that LSC has prepared in similar areas with high annual snowfall, such as the Lake Tahoe region; Park City, Utah; and Aspen, Colorado.

Roadway Capacity Analysis

The roadway capacity analysis for each scenario is presented in Table 2. As shown, all roadway segments currently operate well within the estimated capacity. All segments are expected to continue to operate well below capacity with implementation of the proposed project under any study scenario. Therefore, no roadway capacity concerns are identified.

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Section 6
Transportation Impacts and Mitigation

The following potential areas of transportation impacts are considered in this section:

- Intersection Level of Service Impacts
- Intersection Traffic Queuing
- Roadway Capacity
- Vehicle Miles Traveled
- Transit Impacts
- Pedestrian and Bicycle Impacts

Potential mitigation measures are considered. Finally, Senate Bill (SB) 743 legislation is discussed.

INTERSECTION LEVEL OF SERVICE

All study intersections currently operate at an acceptable LOS under typical winter Saturday PM peak-hour conditions (Scenario 1). With implementation of the proposed Mobility Element in 2015 (Scenario 2), all study intersections would continue to operate at acceptable levels. However, the following eight intersections are forecast to exceed LOS thresholds (as discussed in Section 5) under one or more of the future buildout scenarios (Scenarios 3 through 6):

- Main Street / Mountain Blvd
- Main Street / Post Office
- Main Street / Center Street
- Main Street / Forest Trail
- Main Street / Laurel Mountain Road
- Old Mammoth Road / Tavern Road
- Old Mammoth Road / Sierra Nevada Road
- Old Mammoth Road/ Minaret Road/Fairway Drive

Under future scenarios without the new FAR land uses (Scenarios 3 and 4), only two intersections would require LOS mitigation. In comparison, with the new FAR land uses (Scenarios 5 and 6), at least six intersections would require LOS mitigation. Potential intersection LOS mitigation measures are summarized in the lower portion of Table 1, which can be found in the previous section, and they are also discussed below.

Intersection LOS Mitigation Measures

Main Street / Mountain Blvd

At the unsignalized intersection of Main Street/Mountain Blvd, LOS improvements are not necessary with the new FAR land uses without the proposed Mobility Element roadway network (Scenario 5). With the new FAR land uses and the Mobility Element roadways (Scenario 6),

provision of a southbound right-turn lane on Mountain Boulevard would mitigate the LOS deficiency. Under the original future buildout scenarios (Scenarios 3 and 4), installation of a traffic signal would provide a good LOS (LOS B or better). The proposed Mobility Element includes a new traffic signal at one intersection along Main Street. Further analysis of potential new signals, such as signal warrant analyses per the California Manual on Uniform Traffic Control Devices (CA MUTCD), is expected to be provided as a part of project-specific analyses. In addition, the Town is planning to work with Caltrans regarding intersection improvements on Main Street.

Main Street / Post Office

At the unsignalized Main Street/Post Office intersection, installation of a traffic signal would provide a good LOS (LOS B or better) under all study scenarios. Note that implementation of a traffic signal is not necessary under future buildout conditions without the proposed project (Scenario 3). The proposed Mobility Element includes a new traffic signal at one intersection along Main Street. For Scenario 5 (without Mobility Element), a new traffic signal would need to be provided at this location or at an alternate location along Main Street. Further analysis of potential new signals, such as signal warrant analyses per the California Manual on Uniform Traffic Control Devices (CA MUTCD), is expected to be provided as a part of project-specific analyses. In addition, the Town is planning to work with Caltrans regarding intersection improvements on Main Street.

Main Street / Center Street

At the unsignalized intersection of Main Street/Center Street, LOS mitigation is only needed with the new FAR land uses and without the proposed Mobility Element (Scenario 5). Although the adopted 2007 Mobility Element includes a new signal or roundabout at this location, provision of a northbound right-turn lane on Center Street would provide an acceptable LOS. The addition of a new signal at a nearby intersection may draw traffic away from this intersection via the frontage roads. Further analysis of potential new signals, such as signal warrant analyses per the California Manual on Uniform Traffic Control Devices (CA MUTCD), is expected to be provided as a part of project-specific analyses. In addition, the Town is planning to work with Caltrans regarding intersection improvements on Main Street.

Main Street / Forest Trail

At the unsignalized Main Street/Forest Trail intersection, LOS mitigation is not needed without the new FAR land uses. That is, LOS mitigation is only needed under Scenarios 5 and 6. With the new FAR land uses, prohibiting southbound left-turn movements made from Forest Trail onto Main Street would result in an acceptable LOS. Alternatively, installation of a traffic signal would provide a good LOS B. The proposed Mobility Element includes a new traffic signal at one intersection along Main Street. The addition of a new signal at a nearby intersection may draw traffic away from this intersection via the frontage roads. Further analysis of potential new signals, such as signal warrant analyses per the California Manual on Uniform Traffic Control Devices (CA MUTCD), is expected to be provided as a part of project-specific analyses. In

addition, the Town is planning to work with Caltrans regarding intersection improvements on Main Street.

Main Street / Laurel Mountain Road

At the unsignalized Main Street/ Laurel Mountain Road intersection, LOS mitigation is only needed under scenarios with the new FAR land uses. With the new FAR land uses (Scenario 5), installation of a traffic signal at a nearby intersection may draw traffic away from this intersection via the frontage road. However, with the new FAR land uses and the proposed Mobility Element roadway network (Scenario 6), the frontage road would be removed. Under Scenario 6, provision of a northbound right-turn lane on Laurel Mountain Road would provide an acceptable LOS at this intersection. The proposed Mobility Element includes a new traffic signal at one intersection along Main Street. Further analysis of potential new signals, such as signal warrant analyses per the California Manual on Uniform Traffic Control Devices (CA MUTCD), is expected to be provided as a part of project-specific analyses. In addition, the Town is planning to work with Caltrans regarding intersection improvements on Main Street.

Old Mammoth Road / Tavern Road

At the unsignalized intersection of Old Mammoth Road/Tavern Road, LOS mitigation is only needed with the new FAR land uses without the Mobility Element roadway network (Scenario 5). Provision of an eastbound right-turn lane on Tavern Road would improve the LOS to an acceptable level under this scenario.

Old Mammoth Road / Sierra Nevada Road

At the unsignalized intersection of Old Mammoth Road/Sierra Nevada Road, LOS mitigation is only needed with the new FAR land uses (Scenarios 5 and 6). Provision of eastbound and westbound right-turn lanes on the Sierra Nevada Road approaches would improve the LOS to an acceptable level under both scenarios.

Old Mammoth Road / Minaret Road / Fairway Drive

The unsignalized Old Mammoth Road/ Minaret Road/Fairway Drive intersection is expected to exceed LOS standards under all future scenarios. The installation of a roundabout, as anticipated in the adopted and proposed Mobility Element, would improve the LOS to a good level (LOS A or B) under all scenarios. A roundabout would also act as a traffic calming feature and enhance pedestrian crossing conditions.

Main Street / Sierra Park Boulevard

This unsignalized intersection operates at an acceptable LOS during the Town's standard winter design period under all study scenarios. The total intersection volume at this location is higher in the summer than winter. LOS was calculated for busy summer conditions, which resulted in an acceptable LOS under all study scenarios. Although intersection improvements are not necessary from an LOS standpoint, the Mobility Element includes a new roundabout at this location. A

roundabout would provide traffic calming benefits and enhanced pedestrian crossing conditions.

Additional Intersection Improvements Included in Proposed Mobility Element

The proposed Mobility Element contemplates a new signal at Meridian Blvd / Sierra Park Blvd.

The LOS at the all-way stop-controlled intersection of Meridian Boulevard/Sierra Park Road is acceptable under all scenarios during the Town's standard winter analysis period. The total intersection volume at this location is higher in the summer than winter. LOS was also calculated for busy summer conditions which resulted in acceptable LOS under the all study scenarios. Note that school was in session when the summer counts were conducted. Although intersection improvements are not necessary from an LOS standpoint, the Mobility Element includes a new traffic signal at this location. A signal would provide enhanced pedestrian crossing conditions.

INTERSECTION TRAFFIC QUEUEING

The traffic queue lengths were reviewed at the study intersections, in order to identify whether the queues would impact traffic operations at adjacent intersections or key driveway locations. At the signalized Minaret Road/Main Street/Lake Mary Road intersection, the 95th-percentile traffic queues on the eastbound Lake Mary Road approach are calculated to exceed the available lane storage length. As such, the eastbound traffic queues could potentially interfere with operations at the Lake Mary Road/Canyon Boulevard intersection to the west during busy winter periods. This condition occurs under all future scenarios (Scenarios 3-6). The 50th-percentile traffic queues on the eastbound approach were also reviewed, and no queuing concerns were identified. Note that the Town is planning to work with Caltrans regarding intersection improvements along Main Street.

ROADWAY CAPACITY

All roadways in the study area have reserve capacity under all scenarios. Therefore, no mitigation is necessary from a roadway capacity standpoint.

VEHICLE MILES TRAVELED

The Town's Vehicle Miles Traveled (VMT) threshold based on the 2011 TransCAD model is 179,708 Total VMT over the course of a busy winter Saturday. Total VMT was estimated within the Town for all scenarios. First, the unadjusted VMT estimates provided by the TransCAD model were identified:

- Scenario 1 – Existing Conditions: 152,844 VMT
- Scenario 2 – Existing Conditions with Mobility Element Roadways: 149,444 VMT
- Scenario 3 – Future with Existing Roadways: 179,233 VMT
- Scenario 4 – Future with Mobility Element Roadways: 175,826 VMT
- Scenario 5 – Future with New FAR Land Uses and Existing Roadways: 184,217 VMT
- Scenario 6 – Future with New FAR Land Uses and Mobility Element: 180,900 VMT

The model directly analyzes the auto and transit travel modes, and it does reflect existing pedestrian and bicycle travel (as the current reductions in motor vehicle use are reflected in the calibrated vehicle trip generation rates). However, as the model is not sensitive to improvements in pedestrian and bicycle conditions, additional analysis is necessary to identify the VMT benefits of the bicycle/pedestrian improvements included in some of the scenarios. Separate bicycle and pedestrian VMT reductions were estimated.

The mobility element proposes roughly a threefold increase in pedestrian facilities in the 'general pedestrian zone', which extends from North Village along Main Street to Sierra Park Road and continues along Old Mammoth Road to Chateau Road. According to *An Assessment of Urban Form and Pedestrian and Transit Improvements as an Integrated GHG Reduction Strategy* (Washington State DOT, April 2011) there is a direct correlation between increase in sidewalk coverage and reduction in VMT. Applying the methodology identified in this paper, in Mammoth Lakes a threefold increase in sidewalk coverage is likely to result in a 4.3 percent decrease in VMT generated by trips within the pedestrian zone. The model trip table was summarized to identify VMT associated with trips in this zone, and this factor applied. As shown in Table 3, multiplying the VMT in the pedestrian zone by the 4.3 percent results in a reduction of 260 VMT under scenario 4 and 330 VMT under scenario 6.

TABLE 3: Vehicle Miles Traveled (VMT) Adjustment

	Scenario 3 Future with Existing Network	Scenario 4 Future with Mobility Element	Scenario 5 Future New FAR with Existing Network	Scenario 6 Future New FAR with Mobility Element	VMT Threshold
Peak Day Daily VMT from Model	179,233	175,826	184,217	180,900	179,708
VMT of Trips with Both Ends within General Pedestrian Zone[1]	-	6,230	-	7,895	
Mobility Element Pedestrian Network Adjustment	-	4.2%	-	4.2%	
Pedestrian VMT Reduction for Mobility Element	-	260	-	330	
Miles of Bicycle Lanes	7.5	17.0	7.5	17.0	
Percent Bicycle Mode Share[2]	3.5%	4.6%	3.5%	4.6%	
Bicycle VMT based on Mode Share	6,273	8,144	6,448	8,379	
Bicycle VMT reduction for Mobility Element		1,871		1,932	
Adjusted VMT	**179,233**	**173,695**	**184,217**	**178,638**	**179,708**
Percent Above/Below VMT Threshold	**-0.3%**	**-3.3%**	**2.5%**	**-0.6%**	

Note 1: The 'General Pedestrian Zone' as defined in the Mobility Element extends from North Village along Main Street to Sierra Park Road and continues along Old Mammoth Road to Chateau Road.

Note 2: Increase in Mode Share based on increase in bicycle lane miles and Inyo County Active Transportation Plan (LSC, 2016)

Mammoth Model VMT.xlsx

The mobility element also proposes an increase in Class II bike lanes from about 7.5 miles currently to about 17 miles in the future. Only bicycle lanes within the urban growth boundary were considered, because bike lanes and multi-use paths on the periphery of the town have a much smaller impact on townwide VMT. A correlation was found between miles of bike lanes and increase in the bicycle mode in the overall mode split. The current bicycling mode split in Mammoth Lakes is 3.5 percent from the *2010-2014 American Community Survey 5-Year Estimates*. According to the *Inyo County Active Transportation Plan* (ATP) 2016, a doubling of the miles of bike lanes would likely result in a 25% increase in bicycle mode share. In Mammoth Lakes, with the Mobility Element, the bike lanes would increase by 127% which would result in a 32 percent increase in bicycle mode share for a total bike mode share of 4.6 percent. This higher mode split would reduce VMT by 1,871 under scenario 4 and 1,932 under scenario 6.

Subtracting the pedestrian and bicycle VMT adjustments due to the Mobility Element from the VMT from the model, yields the adjusted VMT at the bottom of Table 3. As shown all future scenarios are below the Towns VMT threshold except Scenario 5 (Future New FAR with Existing Network).

PEDESTRIAN AND BICYCLE FACILITIES

The Mobility Element identifies potential new pedestrian connections, as well as key pedestrian routes that should receive priority investment and locations where infrastructure improvements should be strategically pursued. It also includes planned Class II bike lanes, Class III bike routes, and future multi-use paths. A new, grade-separated crossing is proposed where the multi-use path crosses Minaret Road at a point immediately north of Old Mammoth Road. If designed properly, this would improve safety conditions for pedestrians and bicyclists. Additionally, implementation of new signals or roundabouts along Main Street would improve pedestrian conditions.

In comparison with the adopted 2007 Mobility Element, the proposed Mobility Element addresses pedestrian and bicycle facilities separately and it provides a more in-depth view of each. The proposed Mobility Element includes the following new goals for the pedestrian and bicycle system:

"Goal M.9. Provide an attractive and accessible pedestrian environment throughout the Town."

"Goal M.11. Increase bicycle use through improved public education and marketing of the system."

Given the above, the proposed Mobility Element is expected to improve conditions for pedestrians and bicyclists in Mammoth.

Implementation of the new FAR (Scenarios 5 and 6) would increase land uses within the commercial areas of Main Street and Old Mammoth Road. These areas coincide with the areas designated as "pedestrian zones" in the proposed Mobility Element. With the new FAR, more trips could be accommodated within a convenient walking distance (about one-quarter mile),

which will tend to increase pedestrian trips. Additionally, the new FAR would allow increased mixing of land uses, which would encourage pedestrian travel.

TRANSIT IMPACTS

The Town's TransCAD Model provides the total number of trips, as well as the number of trips via transit. The percent of trips that use the transit system were calculated for the four future scenarios, as shown below:

- Scenario 3-Future with Existing Roadways: 14.3 percent
- Scenario 4-Future with Mobility Element Roadways: 14.7 percent
- Scenario 5-Future with New FAR Land Uses and Existing Roadways: 13.7 percent
- Scenario 6-Future with New FAR Land Uses and Mobility Element: 14.1 percent

As shown above, implementation of the Mobility Element would expand the transit system and increase overall transit use by approximately 0.4 percent. In addition, the proposed Mobility Element includes a new goal for the transit system:

"Goal M.13. Ensure the financial sustainability of transit."

This new goal would be expected to result in new funding for transit-related improvements. Overall, the proposed Mobility Element is expected to improve transit services and facilities.

Implementation of the new FAR would add new vehicle and transit trips. As the increase in vehicle trips is higher than the increase in transit trips, the transit percentage is reduced with the new FAR.

SB 743 LEGISLATION

On September 27, 2013, Governor Brown signed Senate Bill (SB) 743, which became effective on January 1, 2014. The purpose of SB 743 is to streamline the review under CEQA for several categories of development projects, including the development of infill projects in transit priority areas, and to balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions. The bill adds Chapter 2.7: Modernization of Transportation Analysis for Transit Oriented Infill Projects to the CEQA Statute (Section 21099). Section 21099(d) (1) provides that aesthetic and parking impacts of a residential, mixed-use residential, or employment center project on an infill site within a transit priority area shall not be considered significant impacts on the environment.

In addition, SB 743 will result in a change in the metrics for determining impacts relative to the transportation network through the development of new methodologies for traffic analyses for CEQA documents to promote the state's goals of reducing greenhouse gas emissions and traffic-related air pollution, promote the development of multimodal transportation system, and provide clean, efficient access to destinations. Currently, environmental review of transportation impacts focuses on the delay that vehicles experience at intersections and on roadway segments, which is

often measured using Level of Service (LOS). Mitigation for increased delay often involves widening a roadway or the size of an intersection, which increases capacity and may therefore increase auto use and emissions and discourage alternative forms of transportation. Under SB 743, the focus of transportation analysis will shift from driver delay to reduction of greenhouse gas emissions, creation of multimodal networks and promotion of a mix of land uses.

SB 743 requires that the Office of Planning and Research (OPR) prepare revisions to the CEQA guidelines criteria for determining the significance of transportation impacts of projects within transit priority areas. OPR will submit the proposed changes to the Secretary of the Natural Resources Agency to certify and adopt. In August 2014 OPR released a report entitled "Updating Transportation Impacts Analysis in the CEQA Guidelines" for public comment. The report contained a new proposed Section 15064.3 to the CEQA Guidelines as well as proposed amendments to Appendix F (Energy Conservation) and Appendix G (Initial Study Checklist) of the CEQA Guidelines. The comment period closed November 21, 2014 and OPR reviewed and considered comments to determine if revisions are needed. OPR conducted many months of intensive engagement with the public, public agencies, environmental organizations, development advocates, industry experts, and many others, regarding the analysis of transportation impacts. On January 20, 2016 OPR released a Notice of Availability for the Revised Proposal on updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA. The comment period ends on February 29, 2016.

Appendix A
Summer Volumes

Table A1: Mammoth - Summer Peak Hour Design Volumes

#	Intersection	Northbound			Southbound			Eastbound			Westbound			Total
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	Minaret Road / Forest Trail	88	107	19	20	174	36	14	22	72	22	23	12	609
2	Kelly Road/Davidson / Lake Mary Road	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Lake Mary Road / Canyon Blvd	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Minaret Road / Lake Mary Road / Main Street	104	97	68	228	70	111	42	377	239	105	343	96	1,880
5	Mountain Blvd / Main Street	11	4	13	24	4	15	13	519	25	9	473	25	1,135
6	Center Street / Main Street	32	2	65	51	3	21	33	596	38	49	542	44	1,476
7	Forest Trail / Main Street	6	0	9	93	3	17	17	645	6	3	658	117	1,574
8	Laurel Mountain Road / Main Street	113	0	27	0	0	0	0	603	130	38	674	1	1,586
9	Old Mammoth Road / Main Street	321	0	164	0	0	0	0	399	354	142	337	0	1,717
10	Sierra Park Blvd / Main Street	38	8	46	12	15	32	26	425	50	64	337	26	1,079
11	Old Mammoth Road / Tavern Road	38	435	8	30	435	15	12	14	29	12	12	50	1,090
12	Old Mammoth Road / Sierra Nevada Road	22	309	14	33	282	12	13	11	33	10	10	34	783
13	Meridian Blvd / Majestic Pines Drive	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Minaret Road / Meridian Blvd	35	63	17	102	72	29	30	77	17	23	80	99	644
15	Old Mammoth Road / Meridian Blvd	49	262	116	107	294	48	44	139	86	113	124	167	1,549
16	Sierra Park Blvd / Meridian Blvd	25	11	3	32	9	67	32	207	26	5	221	35	673
17	Old Mammoth Road / Chateau Road	4	188	7	53	195	39	39	6	10	7	4	47	599
18	Fairway Drive / Minaret Road/Old Mammoth Road	7	7	31	31	11	72	64	181	8	31	217	48	708
21	Main WB / Meridian	79	0	0	0	0	0	0	0	0	94	273	0	446
22	Main EB / Meridian	0	82	136	0	102	0	5	331	81	0	0	0	737
23	Main Street / Thompson	9	0	1	0	0	0	3	417	7	3	456	0	896
24	Main Street / Post Office	22	3	29	111	10	95	82	515	25	30	434	128	1,484

Source: LSC

Table A2: Mammoth - Comparison of 2015 Summer and Winter Intersection Volumes

Intersection	Total PM Peak Hour Intersection Volume		Season with Higher Volume	Percent Higher
	Summer	Winter		
Minaret Road / Forest Trail	609	1309	Winter	115%
Minaret Road / Lake Mary Road / Main Street	1,880	2486	Winter	32%
Mountain Blvd / Main Street	1,135	1622	Winter	43%
Center Street / Main Street	1,476	1585	Winter	7%
Forest Trail / Main Street	1,574	1808	Winter	15%
Laurel Mountain Road / Main Street	1,586	1797	Winter	13%
Old Mammoth Road / Main Street	1,717	1665	Summer	-3%
Sierra Park Blvd / Main Street	1,079	806	Summer	-25%
Old Mammoth Road / Tavern Road	1,090	1256	Winter	15%
Old Mammoth Road / Sierra Nevada Road	783	1320	Winter	69%
Minaret Road / Meridian Blvd	644	1378	Winter	114%
Old Mammoth Road / Meridian Blvd	1,549	2370	Winter	53%
Sierra Park Blvd / Meridian Blvd	673	456	Summer	-32%
Old Mammoth Road / Chateau Road	599	790	Winter	32%
Fairway Drive / Minaret Road/Old Mammoth Road	708	806	Winter	14%

All Counts.xlsx

Appendix B
Mobility Element Roadways

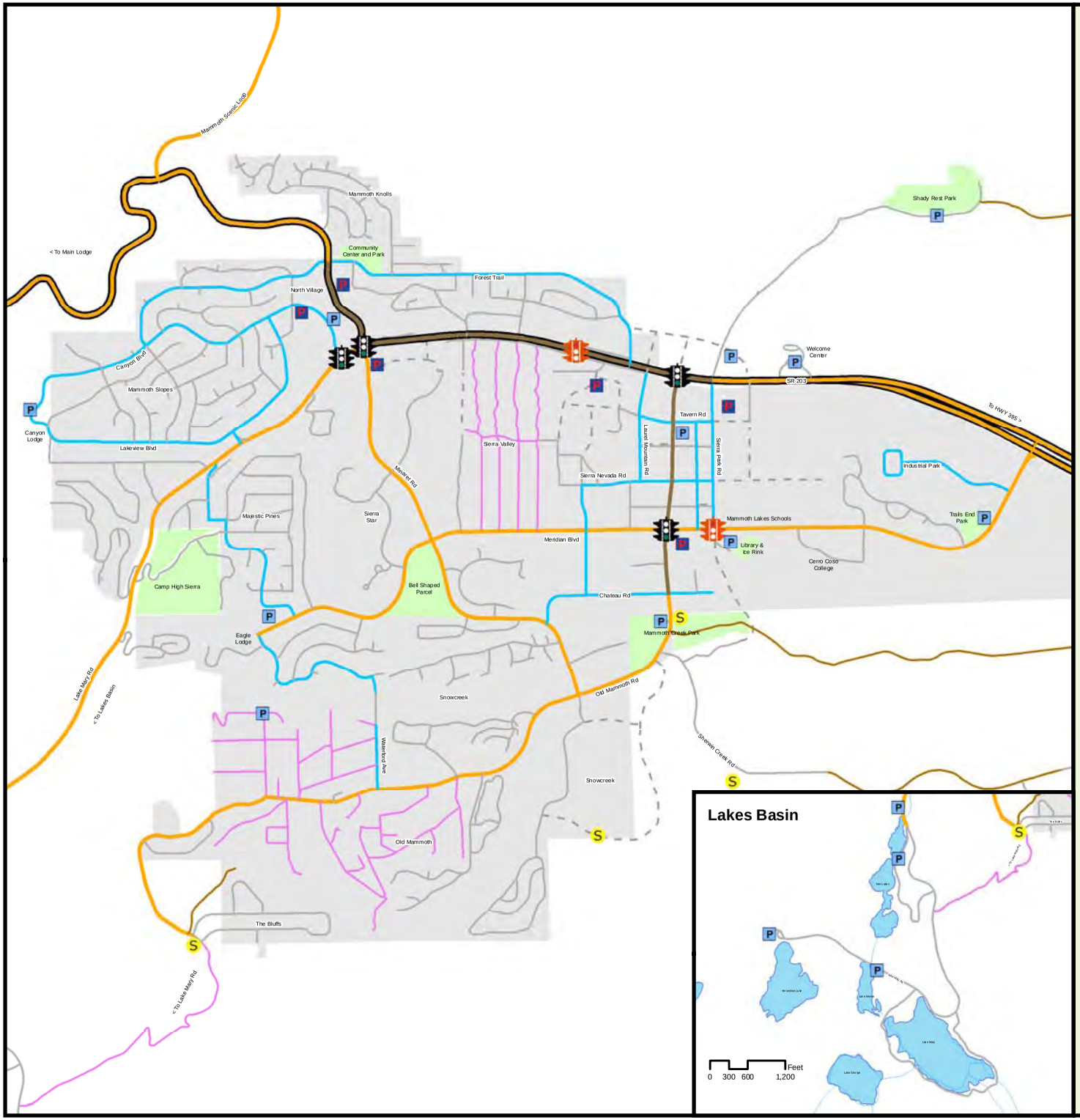


Figure 3-2
Vehicle Network

Town of Mammoth Lakes
General Plan Mobility Element

STATE HIGHWAY
State Route 203

ARTERIAL
Arterial street connect the Towns neighborhoods to the commercial districts and recreation portals.

ARTERIAL COMMERCIAL
Arterial commercial street provide access for all forms of transportation, but should emphasize pedestrian and transit oriented design to encourage use of alternative modes.

COLLECTOR
Collector streets distribute vehicle and multimodal trips from local to arterial streets.

LOCAL - CONSTRAINED STREETS
These streets typically have "constrained" right-of-way and pavement width which generally does not meet Town Standards. All users share the street.

LOCAL - SHARED STREETS
Shared streets are typically not wide enough to accomodate seperate zones for people walking, bicycling, parking or driving. Therefore, all uses must share the street.

UNIMPROVED STREETS
Unimproved streets are unpaved and do not meet Town Standards. Unimproved streets generally provide access to some recreation and campground areas and to some single-family residential parcels.

PROPOSED STREETS

URBAN GROWTH BOUNDARY

PARKS AND COMMUNITY FACILITIES
Locations that should be easily accessed by pedestrians and investment focused.

EXISTING PUBLIC PARKING

PLANNED PUBLIC PARKING AREA
Parking area will accommodate 50+ parking spaces.

PLANNED STAGING AREA
Staging area will accommodate 5-50 parking spaces.

FUTURE TRAFFIC SIGNAL

EXISTING TRAFFIC SIGNAL

Updated 12-2-15

0 0.2 0.4 0.8 Miles

Appendix C
Trip Generation Rates and Future Land Uses

Table III-1
Daily Person-Trip End Production/Attraction Proportions by Trip Purpose

Description	Unit	Land Use Code	Daily Person-Trip End Rate	Productions					Attractions					TOTAL
				H-REC	H-S	H-W	H-O	O-O	H-REC	H-S	H-W	H-O	O-O	
Residential Low Density (SF) - Resident	DUs	1	12.800	1.152	2.048	2.304	4.096	1.920	0.000	0.000	0.000	0.000	1.280	12.80
Residential High Density (MF) - Resident	DUs	3	8.100	0.891	1.458	1.539	2.511	0.729	0.000	0.000	0.000	0.000	0.972	8.10
Mobile Home Park - Resident	DUs	4	5.400	0.594	0.918	1.080	1.566	0.486	0.000	0.000	0.000	0.000	0.756	5.40
Residential Low Density (SF) - Visitor	DUs	5	14.000	4.620	3.220	0.000	3.080	1.960	0.000	0.000	0.000	0.000	1.120	14.00
Residential High Density (MF) - Visitor	DUs	7	11.500	3.795	2.645	0.000	2.530	1.610	0.000	0.000	0.000	0.000	0.920	11.50
Lodging (Hotel) - Visitor	Room	10	12.000	4.080	2.400	0.000	1.920	1.080	0.000	0.120	0.480	0.720	1.200	12.00
Resort Hotel - Visitor	Room	11	12.000	4.080	2.400	0.000	1.920	1.080	0.000	0.120	0.480	0.720	1.200	12.00
Retail/Commercial	KSF	13	60.200	0.000	0.000	0.000	0.000	8.729	6.923	15.351	3.010	20.167	6.020	60.20
Light Industrial	KSF	21	11.200	0.000	0.000	0.000	0.000	2.834	0.000	0.000	2.598	1.221	4.547	11.20
Public Utility	Acres	23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
Public School	Acres	31	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00
High School	Acres	32	1.270	1.000	0.000	0.000	0.000	0.020	0.000	0.000	0.006	0.224	0.019	1.27
College	Student	33	2.080	2.000	0.000	0.000	0.000	0.000	0.010	0.000	0.006	0.062	0.002	2.08
Hospital	Bed	34	17.000	3.000	0.000	0.000	0.000	3.220	0.000	0.000	1.456	6.216	3.108	17.00
Post Office	PRS	36	0.080	0.000	0.000	0.000	0.000	0.023	0.000	0.000	0.002	0.031	0.024	0.08
Church	Acres	37	140.000	0.000	0.000	0.000	0.000	29.540	0.000	0.000	0.000	61.320	49.140	140.00
Downhill Skiing-Employees	Employee	39	1.500	0.000	0.000	0.000	0.000	0.465	0.000	0.000	0.450	0.120	0.465	1.50
Downhill Skiing-Skiers	SAOT	40	1.600	0.000	0.000	0.000	0.000	0.000	1.408	0.000	0.000	0.032	0.160	1.60
Cross-Country Skiing/Snowmobiling	SAOT	41	1.900	0.000	0.000	0.000	0.000	0.000	1.653	0.000	0.076	0.019	0.152	1.90

Source: LSC, 2010.

Table C1: Original Buildout Land Uses (Page 1 of 3)

TAZ	SF Res N1	MF Res N3	Mobile Home N4	SF Vis N5	Mf Visitor N7	Lodging Hotel N10	Resort N11	Retail/ Com N13	Light Industrial N21	Public Utility N23	Public School N31	High School N32	College N33	Hospital N34	Post Office N36	Church N37	Downhill Skiing Empl N39	Downhill Skiers N40	Cross Country Skiers N41
1	0	0	0	0	0	0	234	154	0	0	0	0	0	0	0	0	1,300	10,400	0
2	78	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	73	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0
5	49	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	36	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	19	0	1	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	16	0	0	0	123	0	7	0	0	0	0	0	0	0	0	0	0	0
9	24	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	25	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	39	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	29	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	40	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	40	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	25	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	31	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	12	31	0	1	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	287	65	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	2	2	0	276	22	0	0	0	0	0	0	0	0	0	0	0
21	0	75	0	0	101	23	0	0	0	0	0	0	0	0	0	0	0	0	0
22	49	5	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	81	0	0	127	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	18	19	0	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	27	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	26	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	102	0	2	63	2	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	231	0	0	0	0	0	0	0	0	0	400	6,400	0
29	0	0	0	0	22	0	229	12	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	31	83	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	198	22	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	54	60	300	30	0	0	0	0	0	0	0	0	0	0	0
33	4	21	0	3	38	68	0	12	0	0	0	0	0	0	0	0	0	0	0
34	3	22	0	3	0	226	0	82	0	0	0	0	0	0	0	0	0	0	0
35	13	104	0	8	3	121	0	45	0	0	0	0	0	0	0	0	0	0	0
36	8	8	0	2	0	152	0	63	0	0	0	0	0	0	7,400	0	0	0	0
37	0	0	0	0	14	99	0	64	0	0	0	0	0	0	0	0	0	0	0
38	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	150
40	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	110	0	0	0	0	0	0	0	0	400	6,200	0
43	0	39	0	0	59	13	0	0	0	0	0	0	0	0	0	0	0	0	0
44	0	31	0	0	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	9	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	17	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	36	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	49	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	36	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	0	86	0	0	115	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	0	32	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	364	19	0	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	57	180	30	0	0	0	0	0	0	0	0	0	0	0
54	0	0	0	0	0	59	0	14	0	0	0	0	0	0	0	0	0	0	0
55	0	50	0	0	50	20	0	0	0	0	0	0	0	0	0	0	0	0	0
56	0	15	0	3	0	82	0	21	0	0	0	0	0	0	0	0	0	0	0
57	3	38	0	3	32	3	0	0	0	0	0	0	0	0	0	0	0	0	0
58	8	63	0	4	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table C1: Original Buildout Land Uses (Page 2 of 3)

TAZ	SF Res N1	MF Res N3	Mobile Home N4	SF Vis N5	Mf Visitor N7	Lodging Hotel N10	Resort N11	Retail/ Com N13	Light Industrial N21	Public Utility N23	Public School N31	High School N32	College N33	Hospital N34	Post Office N36	Church N37	Downhill Skiing Empl N39	Downhill Skiers N40	Cross Country Skiers N41
59	10	92	0	10	21	2	0	0	0	0	0	0	0	0	0	0	0	0	0
60	11	64	0	10	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61	0	0	0	0	188	188	0	0	0	0	0	0	0	0	0	0	0	0	0
62	0	0	0	0	18	51	0	0	0	0	0	0	0	0	0	0	0	0	0
63	25	30	0	25	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	9	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	17	89	0	0	3	45	0	10	0	0	0	0	0	0	0	0	0	0	0
67	8	81	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	15	61	0	0	6	75	0	14	0	0	0	0	0	0	0	0	0	0	0
69	8	68	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70	13	41	0	0	11	19	0	18	0	0	0	0	0	0	0	0	0	0	0
71	4	75	0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0
72	16	46	0	0	0	2	0	6	0	0	0	0	0	0	0	0	0	0	0
73	5	99	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
74	0	10	0	0	0	38	0	97	0	0	0	0	0	0	0	0	0	0	0
75	19	161	0	2	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76	0	186	0	1	71	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77	0	119	0	0	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78	0	110	0	0	53	0	0	0	0	0	0	0	0	0	0	3	0	0	0
79	0	0	0	1	11	29	0	82	0	0	0	0	0	0	0	0	0	0	0
80	0	108	0	0	45	23	0	21	0	0	0	0	0	0	0	0	0	0	0
81	0	0	0	0	44	487	0	40	0	0	0	0	0	0	0	0	0	0	0
82	0	54	0	0	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0
83	0	4	0	0	0	99	0	45	0	0	0	0	0	0	0	0	0	0	0
84	0	0	0	0	64	24	0	47	0	0	0	0	0	0	0	0	0	0	0
85	0	173	0	0	33	26	0	0	0	0	0	0	0	0	0	0	0	0	0
86	0	0	0	1	21	30	0	102	0	0	0	0	0	0	0	2	0	0	0
87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
88	0	0	0	0	0	0	0	0	0	0	0	0	0	33	0	0	0	0	0
89	0	0	0	0	0	0	0	0	0	0	0	314	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91	0	0	0	0	0	0	0	0	0	0	264	0	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0	0	0	0	568	0	0	0	0	0	0	0	0
93	91	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
94	0	0	0	2	0	0	0	0	422	0	0	0	0	0	0	0	0	0	0
95	56	103	0	27	24	12	0	0	0	0	0	0	0	0	0	0	0	0	0
96	1	104	0	9	59	10	0	0	0	0	0	0	0	0	0	0	0	0	0
97	24	66	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
98	33	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99	38	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	22	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101	24	55	0	14	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102	0	20	0	0	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103	0	20	0	0	43	0	500	80	0	0	0	0	0	0	0	0	0	0	0
104	0	58	0	8	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106	33	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
107	36	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
108	19	39	0	29	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	0	47	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111	29	0	0	11	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0
112	36	12	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113	0	44	38	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0
114	0	110	41	0	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	0	32	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
116	0	32	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table C1: Original Buildout Land Uses (Page 3 of 3)

TAZ	SF Res N1	MF Res N3	Mobile Home N4	SF Vis N5	Mf Visitor N7	Lodging Hotel N10	Resort N11	Retail/ Com N13	Light Industrial N21	Public Utility N23	Public School N31	High School N32	College N33	Hospital N34	Post Office N36	Church N37	Downhill Skiing Empl N39	Downhill Skiers N40	Cross Country Skiers N41
117	0	57	0	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118	0	30	0	0	0	30	0	55	0	0	0	0	0	0	0	0	0	0	0
119	0	0	0	0	0	33	0	112	0	0	0	0	0	0	0	0	0	0	0
120	0	45	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
121	0	0	0	0	8	42	0	59	0	0	0	0	0	0	0	0	0	0	0
122	0	69	0	0	16	24	0	46	0	1	0	0	0	0	0	0	0	0	0
123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
124	0	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
126	0	0	0	0	0	0	0	0	0	35	0	0	0	0	0	3	0	0	0
127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
128	44	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129	0	11	0	0	102	0	179	0	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	106	80	0	0	0	0	0	0	0	0	63	5,350	0
131	0	79	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
132	0	89	0	0	121	0	0	0	0	0	0	0	0	0	0	0	0	0	0
133	32	82	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
134	20	56	0	16	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	19	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
136	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
137	41	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138	0	185	0	0	111	0	0	0	0	0	0	0	0	0	0	0	0	0	0
139	0	211	0	0	180	37	0	0	0	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0
141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
142	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
143	23	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
144	11	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	7	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
146	30	29	0	13	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
147	20	13	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
148	37	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
149	0	61	0	0	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
151	0	24	0	0	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0
152	0	87	0	0	94	0	0	0	0	1	0	0	0	0	0	0	0	0	0
153	0	0	0	0	0	0	45	1	0	0	0	0	0	0	0	0	0	0	200
154	75	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155	26	3	0	17	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
156	52	25	0	11	1	10	0	0	0	0	0	0	0	0	0	0	0	0	0
157	48	65	0	11	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0
158	9	28	53	6	0	13	0	0	0	0	0	0	0	0	0	3	0	0	0
159	0	144	0	0	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0
160	0	197	0	0	198	0	200	4	0	0	0	0	0	0	0	0	0	0	0
161	0	197	0	0	198	0	200	61	0	0	0	0	0	0	0	0	0	0	0
162	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
163	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
164	12	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	0	256	0	0	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0
166	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary	1,925	5,416	132	700	3,563	2,574	3,529	1,828	422	49	832	314	0	33	7,400	14	2,163	28,350	350

Table C2 : New FAR Land Uses (Page 1 of 3)

TAZ	SF Res N1	MF Res N3	Mobile Home N4	SF Vis N5	Mf Visitor N7	Lodging Hotel N10	Resort N11	Retail/ Com N13	Light Industrial N21	Public Utility N23	Public School N31	High School N32	College N33	Hospital N34	Post Office N36	Church N37	Downhill Skiing Empl N39	Downhill Skiers N40	Cross Country Skiers N41
1	0	0	0	0	0	0	234	154	0	0	0	0	0	0	0	0	1,300	10,400	0
2	78	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	73	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0
5	49	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	36	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	19	0	1	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	16	0	0	0	123	0	7	0	0	0	0	0	0	0	0	0	0	0
9	24	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	25	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	39	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	29	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	40	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	40	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	25	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	31	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	12	31	0	1	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	287	65	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	2	2	0	276	22	0	0	0	0	0	0	0	0	0	0	0
21	0	75	0	0	101	23	0	0	0	0	0	0	0	0	0	0	0	0	0
22	49	5	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	81	0	0	127	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	18	19	0	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	27	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	26	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	102	0	2	63	2	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	231	0	0	0	0	0	0	0	0	0	400	6,400	0
29	0	0	0	0	22	0	229	12	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	31	83	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	198	22	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	54	60	300	30	0	0	0	0	0	0	0	0	0	0	0
33	4	20	0	3	36	28	0	0	0	0	0	0	0	0	0	0	0	0	0
34	0	99	0	0	0	54	0	3	0	0	0	0	0	0	0	0	0	0	0
35	11	123	0	8	4	138	0	26	0	0	0	0	0	0	0	0	0	0	0
36	8	3	0	2	0	322	0	17	0	0	0	0	0	0	7,400	0	0	0	0
37	0	0	0	0	16	164	0	147	11	0	0	0	0	0	2	0	0	0	0
38	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	150
40	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	110	0	0	0	0	0	0	0	0	400	6,200	0
43	0	39	0	0	59	13	0	0	0	0	0	0	0	0	0	0	0	0	0
44	0	31	0	0	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	9	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	17	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	36	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	49	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	36	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	0	86	0	0	115	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	0	32	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	364	19	0	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	57	180	30	0	0	0	0	0	0	0	0	0	0	0
54	0	0	0	0	91	19	0	0	0	0	0	0	0	0	0	0	0	0	0
55	0	50	0	0	50	20	0	0	0	0	0	0	0	0	0	0	0	0	0
56	0	101	0	3	0	5	0	20	0	0	0	0	0	0	0	0	0	0	0
57	3	38	0	3	32	3	0	0	0	0	0	0	0	0	0	0	0	0	0
58	8	63	0	4	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table C2 : New FAR Land Uses (Page 2 of 3)

TAZ	SF Res N1	MF Res N3	Mobile Home N4	SF Vis N5	Mf Visitor N7	Lodging Hotel N10	Resort N11	Retail/ Com N13	Light Industrial N21	Public Utility N23	Public School N31	High School N32	College N33	Hospital N34	Post Office N36	Church N37	Downhill Skiing Empl N39	Downhill Skiers N40	Cross Country Skiers N41
59	10	92	0	10	21	2	0	0	0	0	0	0	0	0	0	0	0	0	0
60	11	64	0	10	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61	0	0	0	0	188	188	0	0	0	0	0	0	0	0	0	0	0	0	0
62	0	0	0	0	18	51	0	0	0	0	0	0	0	0	0	0	0	0	0
63	25	30	0	25	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	9	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	17	109	0	0	4	37	0	3	0	0	0	0	0	0	0	0	0	0	0
67	8	81	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	15	81	0	0	6	60	0	6	0	0	0	0	0	0	0	0	0	0	0
69	8	68	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70	13	41	0	0	9	0	0	11	0	0	0	0	0	0	0	0	0	0	0
71	4	75	0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0
72	16	45	0	0	0	41	0	6	0	0	0	0	0	0	0	0	0	0	0
73	5	99	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
74	0	26	0	0	0	281	0	233	0	0	0	0	0	0	0	0	0	0	0
75	19	161	0	2	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76	0	186	0	1	71	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77	0	119	0	0	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78	0	110	0	0	53	0	0	0	0	0	0	0	0	0	0	3	0	0	0
79	0	0	0	1	29	2	0	132	0	0	0	0	0	0	0	0	0	0	0
80	0	134	0	0	55	23	0	27	0	0	0	0	0	0	0	0	0	0	0
81	0	0	0	0	49	656	0	42	0	0	0	0	0	0	0	0	0	0	0
82	0	54	0	0	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0
83	0	4	0	0	0	140	0	20	0	0	0	0	0	0	0	0	0	0	0
84	0	0	0	0	137	35	0	93	42	0	0	0	0	0	0	0	0	0	0
85	0	158	0	0	30	0	0	3	0	0	0	0	0	0	0	0	0	0	0
86	0	0	0	1	21	0	0	162	25	0	0	0	0	0	0	2	0	0	0
87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
88	0	0	0	0	0	0	0	0	0	0	0	0	0	33	0	0	0	0	0
89	0	0	0	0	0	0	0	0	0	0	0	314	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91	0	0	0	0	0	0	0	0	0	0	264	0	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0	0	0	0	568	0	0	0	0	0	0	0	0
93	91	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
94	0	0	0	2	0	0	0	0	422	0	0	0	0	0	0	0	0	0	0
95	56	103	0	27	24	12	0	0	0	0	0	0	0	0	0	0	0	0	0
96	1	104	0	9	59	10	0	0	0	0	0	0	0	0	0	0	0	0	0
97	24	66	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
98	33	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99	38	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	22	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101	24	55	0	14	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102	0	20	0	0	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103	0	20	0	0	43	0	500	80	0	0	0	0	0	0	0	0	0	0	0
104	0	58	0	8	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106	33	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
107	36	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
108	19	39	0	29	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	0	47	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111	29	0	0	11	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0
112	36	12	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113	0	44	38	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0
114	0	110	41	0	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	0	32	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table C2 : New FAR Land Uses (Page 3 of 3)

TAZ	SF Res N1	MF Res N3	Mobile Home N4	SF Vis N5	Mf Visitor N7	Lodging Hotel N10	Resort N11	Retail/ Com N13	Light Industrial N21	Public Utility N23	Public School N31	High School N32	College N33	Hospital N34	Post Office N36	Church N37	Downhill Skiing Empl N39	Downhill Skiers N40	Cross Country Skiers N41
116	0	32	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
117	0	57	0	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118	0	49	0	0	0	0	0	34	0	0	0	0	0	0	0	0	0	0	0
119	0	0	0	0	0	0	0	182	0	0	0	0	0	0	0	0	0	0	0
120	0	45	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
121	0	0	0	0	8	60	0	90	0	0	0	0	0	0	0	0	0	0	0
122	0	57	0	0	13	38	0	34	0	1	0	0	0	0	0	0	0	0	0
123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
124	0	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
126	0	0	0	0	0	0	0	0	0	35	0	0	0	0	0	3	0	0	0
127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
128	44	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129	0	11	0	0	102	0	179	0	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	106	80	0	0	0	0	0	0	0	0	63	5,350	0
131	0	79	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
132	0	89	0	0	121	0	0	0	0	0	0	0	0	0	0	0	0	0	0
133	32	82	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
134	20	56	0	16	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	19	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
136	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
137	41	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138	0	185	0	0	111	0	0	0	0	0	0	0	0	0	0	0	0	0	0
139	0	211	0	0	180	37	0	0	0	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0
141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
142	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
143	23	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
144	11	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	7	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
146	30	29	0	13	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
147	20	13	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
148	37	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
149	0	61	0	0	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
151	0	24	0	0	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0
152	0	87	0	0	94	0	0	0	0	1	0	0	0	0	0	0	0	0	0
153	0	0	0	0	0	0	45	1	0	0	0	0	0	0	0	0	0	0	200
154	75	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155	26	3	0	17	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
156	52	25	0	11	1	10	0	0	0	0	0	0	0	0	0	0	0	0	0
157	48	65	0	11	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0
158	9	28	53	6	0	13	0	0	0	0	0	0	0	0	0	3	0	0	0
159	0	144	0	0	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0
160	0	197	0	0	198	0	200	4	0	0	0	0	0	0	0	0	0	0	0
161	0	197	0	0	198	0	200	61	0	0	0	0	0	0	0	0	0	0	0
162	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
163	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
164	12	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	0	256	0	0	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0
166	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary	1,920	5,665	132	697	3,754	2,844	3,529	2,063	500	49	832	314	0	33	7,402	14	2,163	28,350	350

Appendix D
Intersection Level of Service Output

DESCRIPTIONS OF LEVELS OF SERVICE

The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. A level of service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations, from A to F, with level of service A representing the best operating conditions and level of service F the worst.

Level of Service Definitions

In general, the various levels of service are defined as follows for uninterrupted flow facilities:

- **Level of service A** represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.

- **Level of service B** is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS A. The level of comfort and convenience provided is somewhat less than at LOS A, because the presence of others in the traffic stream begins to affect individual behavior.

- **Level of service C** is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.

- **Level of Service D** represents high-density, but stable, flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.

- **Level of service E** represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to “give way” to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor perturbations within the traffic stream will cause breakdowns.

- **Level of service F** is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop in a cyclic fashion. Level of service F is used to describe the operating conditions within the queue, as well as the point of the breakdown. It should be noted, however, that in many cases operating conditions of vehicles or pedestrians discharged from the queue may be quite good. Nevertheless, it is the point at which arrival flow exceeds discharge flow which causes the queue to form, and level of service F is an appropriate designation for such points.

Scenario One

Intersection	
Int Delay, s/veh	7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	21	27	95	16	16	11	74	175	27	69	673	106
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	30	106	18	18	12	82	194	30	77	748	118

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1349	1349	807	1349	1393	209	866	0	0	224	0	0
Stage 1	960	960	-	374	374	-	-	-	-	-	-	-
Stage 2	389	389	-	975	1019	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	128	151	381	128	142	831	777	-	-	1345	-	-
Stage 1	308	335	-	647	618	-	-	-	-	-	-	-
Stage 2	635	608	-	303	314	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	92	118	381	62	111	831	777	-	-	1345	-	-
Mov Cap-2 Maneuver	92	118	-	62	111	-	-	-	-	-	-	-
Stage 1	271	297	-	569	543	-	-	-	-	-	-	-
Stage 2	532	534	-	175	279	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	35.6	66.1	2.7	0.6
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	777	-	-	105	381	104	1345	-	-
HCM Lane V/C Ratio	0.106	-	-	0.508	0.277	0.459	0.057	-	-
HCM Control Delay (s)	10.2	0	-	70.3	18	66.1	7.8	0	-
HCM Lane LOS	B	A	-	F	C	F	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	2.3	1.1	2	0.2	-	-

HCM 2010 Signalized Intersection Summary
2: Minaret Road & Lake Mary Road/Main Street

12/14/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	408	133	74	313	133	323	254	90	504	53	111
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	100	453	148	82	348	148	359	282	100	602	0	123
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	2	0	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	757	339	118	734	735	451	474	402	897	0	388
Arrive On Green	0.07	0.21	0.21	0.07	0.21	0.21	0.25	0.25	0.25	0.25	0.00	0.24
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	3548	0	1583
Grp Volume(v), veh/h	100	453	148	82	348	148	359	282	100	602	0	123
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	0	1583
Q Serve(g_s), s	4.2	8.7	6.1	3.4	6.5	4.2	14.3	10.0	3.8	11.5	0.0	4.8
Cycle Q Clear(g_c), s	4.2	8.7	6.1	3.4	6.5	4.2	14.3	10.0	3.8	11.5	0.0	4.8
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	130	757	339	118	734	735	451	474	402	897	0	388
V/C Ratio(X)	0.77	0.60	0.44	0.69	0.47	0.20	0.80	0.60	0.25	0.67	0.00	0.32
Avail Cap(c_a), veh/h	144	892	399	144	892	806	492	517	439	1083	0	471
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	0.00	1.00
Uniform Delay (d), s/veh	34.3	26.7	25.7	34.4	26.2	11.9	26.3	24.7	22.4	25.3	0.0	23.3
Incr Delay (d2), s/veh	19.3	1.4	1.7	9.0	0.8	0.2	10.3	3.1	0.8	3.6	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	4.4	2.8	2.0	3.3	2.7	8.3	5.6	1.7	6.0	0.0	2.3
LnGrp Delay(d),s/veh	53.6	28.1	27.3	43.4	27.1	12.2	36.6	27.7	23.1	28.9	0.0	25.2
LnGrp LOS	D	C	C	D	C	B	D	C	C	C		C
Approach Vol, veh/h		701			578			741			725	
Approach Delay, s/veh		31.6			25.6			31.4			28.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	20.1		23.0	9.5	19.6		23.2
Change Period (Y+Rc), s	4.1	4.9		4.6	4.1	4.9		4.9
Max Green Setting (Gmax), s	6.0	18.1		22.4	6.0	18.1		20.0
Max Q Clear Time (g_c+I1), s	5.4	10.7		13.5	6.2	8.5		16.3
Green Ext Time (p_c), s	0.0	4.5		4.9	0.0	5.5		2.0

Intersection Summary	
HCM 2010 Ctrl Delay	29.4
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

2010 Signalized Intersection Summary
aret Road & Lake Mary Road/Main Street

11/16/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	408	133	74	313	133	323	254	90	504	53	111
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	100	453	148	82	348	148	359	282	100	602	0	123
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	2	0	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	757	339	118	734	329	451	474	402	897	0	388
Arrive On Green	0.07	0.21	0.21	0.07	0.21	0.21	0.25	0.25	0.25	0.25	0.00	0.24
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	3548	0	1583
Grp Volume(v), veh/h	100	453	148	82	348	148	359	282	100	602	0	123
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	0	1583
Q Serve(g_s), s	4.2	8.7	6.1	3.4	6.5	6.2	14.3	10.0	3.8	11.5	0.0	4.8
Cycle Q Clear(g_c), s	4.2	8.7	6.1	3.4	6.5	6.2	14.3	10.0	3.8	11.5	0.0	4.8
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	130	757	339	118	734	329	451	474	402	897	0	388
V/C Ratio(X)	0.77	0.60	0.44	0.69	0.47	0.45	0.80	0.60	0.25	0.67	0.00	0.32
Avail Cap(c_a), veh/h	144	892	399	144	892	399	492	517	439	1083	0	471
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	0.00	1.00
Uniform Delay (d), s/veh	34.3	26.7	25.7	34.4	26.2	26.1	26.3	24.7	22.4	25.3	0.0	23.3
Incr Delay (d2), s/veh	19.3	1.4	1.7	9.0	0.8	1.7	10.3	3.1	0.8	3.6	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	4.4	2.8	2.0	3.3	2.8	8.3	5.6	1.7	6.0	0.0	2.3
LnGrp Delay(d),s/veh	53.6	28.1	27.3	43.4	27.1	27.8	36.6	27.7	23.1	28.9	0.0	25.2
LnGrp LOS	D	C	C	D	C	C	D	C	C	C		C
Approach Vol, veh/h		701			578			741			725	
Approach Delay, s/veh		31.6			29.6			31.4			28.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	20.1		23.0	9.5	19.6		23.2
Change Period (Y+Rc), s	4.1	4.9		4.6	4.1	4.9		4.9
Max Green Setting (Gmax), s	6.0	18.1		22.4	6.0	18.1		20.0
Max Q Clear Time (g_c+I1), s	5.4	10.7		13.5	6.2	8.5		16.3
Green Ext Time (p_c), s	0.0	4.5		4.9	0.0	5.5		2.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	946	36	17	492	34	5	5	11	21	5	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	1051	40	19	547	38	6	6	12	23	6	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	584	0	0	1091	0	0	1430	1738	546	1176	1739	292
Stage 1	-	-	-	-	-	-	1116	1116	-	603	603	-
Stage 2	-	-	-	-	-	-	314	622	-	573	1136	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	987	-	-	635	-	-	95	86	482	147	86	704
Stage 1	-	-	-	-	-	-	221	281	-	453	487	-
Stage 2	-	-	-	-	-	-	671	477	-	472	275	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	987	-	-	635	-	-	80	77	482	125	77	704
Mov Cap-2 Maneuver	-	-	-	-	-	-	80	77	-	125	77	-
Stage 1	-	-	-	-	-	-	208	265	-	427	465	-
Stage 2	-	-	-	-	-	-	611	456	-	425	259	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.5	35.8	32.8
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	140	987	-	-	635	-	-	182
HCM Lane V/C Ratio	0.167	0.023	-	-	0.03	-	-	0.293
HCM Control Delay (s)	35.8	8.7	0.2	-	10.8	0.2	-	32.8
HCM Lane LOS	E	A	A	-	B	A	-	D
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0.1	-	-	1.2

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	89	863	27	40	458	122	20	3	27	103	9	88
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	-	150	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	99	959	30	44	509	136	22	3	30	114	10	98

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	644	0	0	989	0	0	1520	1905	494	1345	1853	322
Stage 1	-	-	-	-	-	-	1172	1172	-	666	666	-
Stage 2	-	-	-	-	-	-	348	733	-	679	1187	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	937	-	-	695	-	-	81	68	521	~ 110	73	674
Stage 1	-	-	-	-	-	-	204	264	-	415	456	-
Stage 2	-	-	-	-	-	-	641	424	-	408	260	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	937	-	-	695	-	-	57	57	521	~ 89	61	674
Mov Cap-2 Maneuver	-	-	-	-	-	-	136	146	-	190	142	-
Stage 1	-	-	-	-	-	-	182	236	-	371	427	-
Stage 2	-	-	-	-	-	-	501	397	-	339	233	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.7	25.8	37
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	228	937	-	-	695	-	-	185	674
HCM Lane V/C Ratio	0.244	0.106	-	-	0.064	-	-	0.673	0.145
HCM Control Delay (s)	25.8	9.3	-	-	10.5	-	-	57.2	11.2
HCM Lane LOS	D	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	0.9	0.4	-	-	0.2	-	-	4	0.5

Notes

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

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	61	869	66	31	572	40	27	5	58	27	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	40
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	68	966	73	34	636	44	30	6	64	30	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	680	0	0	1039	0	0	1525	1887	519	1348	1901	340
Stage 1	-	-	-	-	-	-	1138	1138	-	727	727	-
Stage 2	-	-	-	-	-	-	387	749	-	621	1174	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	908	-	-	665	-	-	81	70	502	109	68	656
Stage 1	-	-	-	-	-	-	214	275	-	381	427	-
Stage 2	-	-	-	-	-	-	608	417	-	442	264	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	908	-	-	665	-	-	71	61	502	84	60	656
Mov Cap-2 Maneuver	-	-	-	-	-	-	154	158	-	190	150	-
Stage 1	-	-	-	-	-	-	198	254	-	352	405	-
Stage 2	-	-	-	-	-	-	556	396	-	349	244	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.5	24.9	20.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	279	908	-	-	665	-	-	190	656
HCM Lane V/C Ratio	0.358	0.075	-	-	0.052	-	-	0.158	0.036
HCM Control Delay (s)	24.9	9.3	-	-	10.7	-	-	27.5	10.7
HCM Lane LOS	C	A	-	-	B	-	-	D	B
HCM 95th %tile Q(veh)	1.6	0.2	-	-	0.2	-	-	0.5	0.1

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	16	922	16	19	595	65	16	0	21	133	5	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	35
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	1024	18	21	661	72	18	0	23	148	6	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	733	0	0	1042	0	0	1445	1845	521	1287	1817	367
Stage 1	-	-	-	-	-	-	1069	1069	-	739	739	-
Stage 2	-	-	-	-	-	-	376	776	-	548	1078	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	868	-	-	663	-	-	93	74	500	~ 121	77	630
Stage 1	-	-	-	-	-	-	236	296	-	375	422	-
Stage 2	-	-	-	-	-	-	617	406	-	488	293	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	868	-	-	663	-	-	82	70	500	~ 111	73	630
Mov Cap-2 Maneuver	-	-	-	-	-	-	177	181	-	232	179	-
Stage 1	-	-	-	-	-	-	231	290	-	367	409	-
Stage 2	-	-	-	-	-	-	556	393	-	456	287	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	20.1	40.4
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	279	868	-	-	663	-	-	230	630
HCM Lane V/C Ratio	0.147	0.02	-	-	0.032	-	-	0.667	0.056
HCM Control Delay (s)	20.1	9.2	-	-	10.6	-	-	47.2	11.1
HCM Lane LOS	C	A	-	-	B	-	-	E	B
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0.1	-	-	4.2	0.2

Notes

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

Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	899	177	21	578	101	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	999	197	23	642	112	36

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1196	0	1465	598
Stage 1	-	-	-	-	1097	-
Stage 2	-	-	-	-	368	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	579	-	119	445
Stage 1	-	-	-	-	281	-
Stage 2	-	-	-	-	670	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	579	-	114	445
Mov Cap-2 Maneuver	-	-	-	-	220	-
Stage 1	-	-	-	-	281	-
Stage 2	-	-	-	-	643	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	38.3
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	250	-	-	579	-
HCM Lane V/C Ratio	0.591	-	-	0.04	-
HCM Control Delay (s)	38.3	-	-	11.5	-
HCM Lane LOS	E	-	-	B	-
HCM 95th %tile Q(veh)	3.4	-	-	0.1	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	332	599	95	266	333	74
Number	2	12	1	6	3	18
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	369	666	106	296	370	82
Adj No. of Lanes	2	1	1	2	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1279	1056	169	1905	531	474
Arrive On Green	0.36	0.36	0.10	0.54	0.30	0.30
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583
Grp Volume(v), veh/h	369	666	106	296	370	82
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583
Q Serve(g_s), s	3.7	11.9	2.8	2.1	9.1	1.9
Cycle Q Clear(g_c), s	3.7	11.9	2.8	2.1	9.1	1.9
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1279	1056	169	1905	531	474
V/C Ratio(X)	0.29	0.63	0.63	0.16	0.70	0.17
Avail Cap(c_a), veh/h	1324	1076	253	2116	815	728
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	11.2	4.7	21.4	5.7	15.3	12.7
Incr Delay (d2), s/veh	0.3	1.8	2.8	0.1	3.9	0.4
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	5.6	1.5	1.0	5.0	0.9
LnGrp Delay(d),s/veh	11.5	6.5	24.2	5.8	19.1	13.1
LnGrp LOS	B	A	C	A	B	B
Approach Vol, veh/h	1035			402	452	
Approach Delay, s/veh	8.3			10.7	18.1	
Approach LOS	A			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.7	21.8				30.5		18.7
Change Period (Y+Rc), s	4.1	4.9				4.9		4.6
Max Green Setting (Gmax), s	6.9	17.5				28.5		22.0
Max Q Clear Time (g_c+I1), s	4.8	13.9				4.1		11.1
Green Ext Time (p_c), s	0.0	3.0				14.7		3.1

Intersection Summary	
HCM 2010 Ctrl Delay	11.1
HCM 2010 LOS	B

nalized Intersection Summary
n Road & Main Street

11/16/2015

	EBT	EBR	WBL	WBT	NBL	NBR
...ations	↑↑	↱	↰	↑↑	↰	↱
...ume (veh/h)	332	599	95	266	333	74
Number	2	12	1	6	3	18
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	369	666	106	296	370	82
Adj No. of Lanes	2	1	1	2	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1329	595	166	1938	523	467
Arrive On Green	0.38	0.38	0.09	0.55	0.30	0.30
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583
Grp Volume(v), veh/h	369	666	106	296	370	82
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583
Q Serve(g_s), s	3.7	19.1	2.9	2.1	9.4	2.0
Cycle Q Clear(g_c), s	3.7	19.1	2.9	2.1	9.4	2.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1329	595	166	1938	523	467
V/C Ratio(X)	0.28	1.12	0.64	0.15	0.71	0.18
Avail Cap(c_a), veh/h	1329	595	220	2046	788	703
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	11.1	15.9	22.2	5.7	16.0	13.3
Incr Delay (d2), s/veh	0.3	74.6	3.0	0.1	4.1	0.4
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	20.5	1.6	1.1	5.2	0.9
LnGrp Delay(d),s/veh	11.3	90.5	25.2	5.8	20.1	13.7
LnGrp LOS	B	F	C	A	C	B
Approach Vol, veh/h	1035			402	452	
Approach Delay, s/veh	62.3			10.9	18.9	
Approach LOS	E			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.8	23.1				31.9		19.0
Change Period (Y+Rc), s	4.1	4.9				4.9		4.6
Max Green Setting (Gmax), s	6.2	18.2				28.5		22.0
Max Q Clear Time (g_c+I1), s	4.9	21.1				4.1		11.4
Green Ext Time (p_c), s	0.0	0.0				14.7		3.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.0
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	339	58	27	318	5	31	5	32	5	5	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	56	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	377	64	30	353	6	34	6	36	6	6	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	359	0	0	441	0	0	672	852	221	632	882	179
Stage 1	-	-	-	-	-	-	433	433	-	416	416	-
Stage 2	-	-	-	-	-	-	239	419	-	216	466	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1196	-	-	1115	-	-	342	295	783	365	284	833
Stage 1	-	-	-	-	-	-	571	580	-	585	590	-
Stage 2	-	-	-	-	-	-	743	588	-	766	561	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1196	-	-	1115	-	-	323	284	783	335	274	833
Mov Cap-2 Maneuver	-	-	-	-	-	-	428	388	-	437	375	-
Stage 1	-	-	-	-	-	-	565	574	-	579	574	-
Stage 2	-	-	-	-	-	-	705	572	-	717	555	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	12.2	11.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	422	783	1196	-	-	1115	-	-	562
HCM Lane V/C Ratio	0.095	0.045	0.01	-	-	0.027	-	-	0.043
HCM Control Delay (s)	14.4	9.8	8	-	-	8.3	-	-	11.7
HCM Lane LOS	B	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0.1	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	369	7	2	344	6	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	400	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	410	8	2	382	7	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	418	0	610	209
Stage 1	-	-	-	-	414	-
Stage 2	-	-	-	-	196	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1138	-	426	797
Stage 1	-	-	-	-	635	-
Stage 2	-	-	-	-	818	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1138	-	425	797
Mov Cap-2 Maneuver	-	-	-	-	571	-
Stage 1	-	-	-	-	635	-
Stage 2	-	-	-	-	817	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	595	-	-	1138	-
HCM Lane V/C Ratio	0.013	-	-	0.002	-
HCM Control Delay (s)	11.1	-	-	8.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	5	27	5	5	27	32	408	11	16	684	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	55	-	-	45	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	6	30	6	6	30	36	453	12	18	760	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1359	1348	775	1359	1357	459	790	0	0	466	0	0
Stage 1	811	811	-	531	531	-	-	-	-	-	-	-
Stage 2	548	537	-	828	826	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	126	151	398	126	149	602	830	-	-	1095	-	-
Stage 1	373	393	-	532	526	-	-	-	-	-	-	-
Stage 2	521	523	-	365	387	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	111	142	398	108	140	602	830	-	-	1095	-	-
Mov Cap-2 Maneuver	111	142	-	108	140	-	-	-	-	-	-	-
Stage 1	357	387	-	509	503	-	-	-	-	-	-	-
Stage 2	468	500	-	327	381	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26.7	19.3	0.7	0.2
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	830	-	-	213	292	1095	-	-
HCM Lane V/C Ratio	0.043	-	-	0.224	0.141	0.016	-	-
HCM Control Delay (s)	9.5	-	-	26.7	19.3	8.3	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.5	0	-	-

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	16	11	69	16	16	27	58	408	5	37	620	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	12	77	18	18	30	64	453	6	41	689	41

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1401	1380	709	1421	1397	456	730	0	0	459	0	0
Stage 1	792	792	-	585	585	-	-	-	-	-	-	-
Stage 2	609	588	-	836	812	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	118	144	434	114	141	604	874	-	-	1102	-	-
Stage 1	382	401	-	497	498	-	-	-	-	-	-	-
Stage 2	482	496	-	362	392	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	92	128	434	80	126	604	874	-	-	1102	-	-
Mov Cap-2 Maneuver	92	128	-	80	126	-	-	-	-	-	-	-
Stage 1	354	386	-	461	462	-	-	-	-	-	-	-
Stage 2	408	460	-	278	377	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	33.7	42.7	1.2	0.4
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	874	-	-	229	159	1102	-	-
HCM Lane V/C Ratio	0.074	-	-	0.466	0.412	0.037	-	-
HCM Control Delay (s)	9.4	-	-	33.7	42.7	8.4	-	-
HCM Lane LOS	A	-	-	D	E	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	2.3	1.8	0.1	-	-

HCM 2010 Signalized Intersection Summary
13: Minaret Road & Meridian Boulevard

11/16/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	101	244	58	21	148	106	32	117	16	228	249	58
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	112	271	64	23	164	118	36	130	18	253	277	64
Adj No. of Lanes	1	2	0	1	1	1	1	1	1	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	168	772	179	61	392	306	87	392	306	312	494	114
Arrive On Green	0.09	0.27	0.25	0.03	0.21	0.19	0.05	0.21	0.19	0.18	0.34	0.32
Sat Flow, veh/h	1774	2853	662	1774	1863	1583	1774	1863	1583	1774	1465	338
Grp Volume(v), veh/h	112	166	169	23	164	118	36	130	18	253	0	341
Grp Sat Flow(s),veh/h/ln	1774	1770	1746	1774	1863	1583	1774	1863	1583	1774	0	1803
Q Serve(g_s), s	3.2	3.9	4.1	0.7	3.9	3.4	1.0	3.1	0.5	7.1	0.0	8.0
Cycle Q Clear(g_c), s	3.2	3.9	4.1	0.7	3.9	3.4	1.0	3.1	0.5	7.1	0.0	8.0
Prop In Lane	1.00		0.38	1.00		1.00	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	168	479	472	61	392	306	87	392	306	312	0	608
V/C Ratio(X)	0.67	0.35	0.36	0.38	0.42	0.39	0.42	0.33	0.06	0.81	0.00	0.56
Avail Cap(c_a), veh/h	209	649	640	209	683	553	209	644	520	377	0	794
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	0.00	1.00
Uniform Delay (d), s/veh	22.7	15.2	15.4	24.5	17.7	18.2	23.9	17.4	17.1	20.5	0.0	14.1
Incr Delay (d2), s/veh	4.6	0.9	1.0	2.8	1.5	1.7	2.4	1.1	0.2	10.0	0.0	1.7
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	1.7	2.0	2.1	0.4	2.2	1.6	0.6	1.7	0.2	4.3	0.0	4.3
LnGrp Delay(d),s/veh	27.3	16.1	16.4	27.3	19.2	19.9	26.3	18.4	17.2	30.5	0.0	15.8
LnGrp LOS	C	B	B	C	B	B	C	B	B	C		B
Approach Vol, veh/h		447			305			184			594	
Approach Delay, s/veh		19.0			20.1			19.8			22.1	
Approach LOS		B			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	18.0	6.5	21.5	8.9	14.9	13.1	14.9
Change Period (Y+Rc), s	4.1	4.9	4.1	4.9	4.1	4.9	4.1	4.9
Max Green Setting (Gmax), s	6.0	18.1	6.0	21.9	6.0	18.1	10.9	17.0
Max Q Clear Time (g_c+I1), s	2.7	6.1	3.0	10.0	5.2	5.9	9.1	5.1
Green Ext Time (p_c), s	0.0	3.8	0.0	3.1	0.0	3.9	0.1	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	20.5
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
14: Old Mammoth Road & Meridian Boulevard

11/16/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	186	673	111	95	361	74	127	228	48	117	292	58
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	207	748	123	106	401	82	141	253	53	130	324	64
Adj No. of Lanes	1	2	0	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	250	1066	175	136	532	452	178	418	355	164	404	344
Arrive On Green	0.14	0.35	0.35	0.08	0.29	0.29	0.10	0.22	0.22	0.09	0.22	0.22
Sat Flow, veh/h	1774	3044	500	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	207	435	436	106	401	82	141	253	53	130	324	64
Grp Sat Flow(s),veh/h/ln	1774	1770	1774	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	8.0	14.9	14.9	4.1	13.8	2.7	5.5	8.6	1.9	5.0	11.6	2.3
Cycle Q Clear(g_c), s	8.0	14.9	14.9	4.1	13.8	2.7	5.5	8.6	1.9	5.0	11.6	2.3
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	250	620	621	136	532	452	178	418	355	164	404	344
V/C Ratio(X)	0.83	0.70	0.70	0.78	0.75	0.18	0.79	0.60	0.15	0.79	0.80	0.19
Avail Cap(c_a), veh/h	300	690	692	194	615	523	225	504	428	199	477	406
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	29.3	19.7	19.7	31.9	22.8	18.9	30.9	24.4	21.9	31.2	26.1	22.4
Incr Delay (d2), s/veh	14.0	3.1	3.1	10.1	5.0	0.3	12.9	1.9	0.3	14.9	8.9	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	4.9	7.8	7.8	2.4	7.8	1.2	3.3	4.6	0.8	3.1	6.9	1.0
LnGrp Delay(d),s/veh	43.3	22.8	22.8	42.0	27.8	19.2	43.8	26.3	22.1	46.1	34.9	22.8
LnGrp LOS	D	C	C	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1078			589			447			518	
Approach Delay, s/veh		26.7			29.2			31.3			36.2	
Approach LOS		C			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	29.5	11.1	20.2	14.0	25.0	10.6	20.7
Change Period (Y+Rc), s	4.1	4.9	4.1	4.9	4.1	4.9	4.1	4.9
Max Green Setting (Gmax), s	7.7	27.4	8.9	18.0	11.9	23.2	7.9	19.0
Max Q Clear Time (g_c+I1), s	6.1	16.9	7.5	13.6	10.0	15.8	7.0	10.6
Green Ext Time (p_c), s	0.0	5.5	0.1	1.7	0.1	4.3	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	29.9
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	13.1
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	154	443	16	0	11	290	24	0	27	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	171	492	18	0	12	322	27	0	30	6	6
Number of Lanes	0	0	2	0	0	0	2	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	15	10.6	9.9
HCM LOS	B	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	73%	41%	0%	7%	0%	14%
Vol Thru, %	14%	59%	93%	93%	86%	6%
Vol Right, %	14%	0%	7%	0%	14%	80%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	37	376	238	156	169	80
LT Vol	27	154	0	11	0	11
Through Vol	5	222	222	145	145	5
RT Vol	5	0	16	0	24	64
Lane Flow Rate	41	417	264	173	188	89
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.073	0.634	0.383	0.277	0.293	0.143
Departure Headway (Hd)	6.42	5.579	5.325	5.756	5.62	5.774
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	560	651	681	627	642	623
Service Time	4.437	3.279	3.025	3.465	3.329	3.786
HCM Lane V/C Ratio	0.073	0.641	0.388	0.276	0.293	0.143
HCM Control Delay	9.9	17.4	11.3	10.7	10.6	9.7
HCM Lane LOS	A	C	B	B	B	A
HCM 95th-tile Q	0.2	4.5	1.8	1.1	1.2	0.5

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	JHB
Agency/Co.	LSC
Date Performed	11/10/2015
Analysis Time Period	Winter Sat - Existing Cond

Site Information

Intersection	SR 203 EB / Meridian Blvd
Jurisdiction	
Analysis Year	2015

Project Description: Mammoth Mobility Element EIR Traffic

East/West Street: SR 203 EB | North/South Street: Meridian Blvd

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	4	294	72			
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR (veh/h)	4	326	80	0	0	0
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	2	1	0	0	0
Configuration	L	T	R			
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)		74		1	92	
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR (veh/h)	0	82	0	1	102	0
Percent Heavy Vehicles	2	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		T		LT		

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L			T		LT		
v (veh/h)	4			82		103		
C (m) (veh/h)	1636			588		532		
v/c	0.00			0.14		0.19		
95% queue length	0.01			0.48		0.71		
Control Delay (s/veh)	7.2			12.1		13.4		
LOS	A			B		B		
Approach Delay (s/veh)	--	--	12.1			13.4		
Approach LOS	--	--	B			B		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*JHB*
Agency/Co.	*LSC*
Date Performed	*11/10/2015*
Analysis Time Period	*Winter Sat - Existing Cond*

Site Information

Intersection	*SR 203 WB / Meridian Blvd*
Jurisdiction	
Analysis Year	*2015*

Project Description *Mammoth Mobility Element EIR Traffic*

East/West Street: *SR 203 WB* | North/South Street: *Meridian Blvd*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)				*92*	*268*	
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*102*	*297*	*0*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*1*	*2*	*0*
Configuration				*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*78*					
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*86*	*0*	*0*	*0*	*0*	*0*
Percent Heavy Vehicles	*2*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*0*	*0*	*0*	*0*
Configuration	*L*					

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*	*L*					
v (veh/h)		*102*	*86*					
C (m) (veh/h)		*1623*	*605*					
v/c		*0.06*	*0.14*					
95% queue length		*0.20*	*0.49*					
Control Delay (s/veh)		*7.4*	*11.9*					
LOS		*A*	*B*					
Approach Delay (s/veh)	--	--	*11.9*					
Approach LOS	--	--	*B*					

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Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	37	16	11	5	11	27	11	249	5	48	297	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	55	-	-	55	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	18	12	6	12	30	12	277	6	53	330	82

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	803	785	371	797	823	279	412	0	0	282	0	0
Stage 1	478	478	-	304	304	-	-	-	-	-	-	-
Stage 2	325	307	-	493	519	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	302	325	675	305	309	760	1147	-	-	1280	-	-
Stage 1	568	556	-	705	663	-	-	-	-	-	-	-
Stage 2	687	661	-	558	533	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	270	308	675	275	293	760	1147	-	-	1280	-	-
Mov Cap-2 Maneuver	270	308	-	275	293	-	-	-	-	-	-	-
Stage 1	562	533	-	698	656	-	-	-	-	-	-	-
Stage 2	641	654	-	508	511	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.9	13.5	0.3	0.9
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1147	-	-	312	471	1280	-	-
HCM Lane V/C Ratio	0.011	-	-	0.228	0.101	0.042	-	-
HCM Control Delay (s)	8.2	-	-	19.9	13.5	7.9	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.9	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	95	148	11	32	170	64	5	16	21	69	37	138
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	115	-	-	100	-	-	-	-	50	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	106	164	12	36	189	71	6	18	23	77	41	153

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	260	0	0	177	0	0	775	713	171	687	684	224
Stage 1	-	-	-	-	-	-	382	382	-	296	296	-
Stage 2	-	-	-	-	-	-	393	331	-	391	388	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1304	-	-	1399	-	-	315	357	873	361	371	815
Stage 1	-	-	-	-	-	-	640	613	-	712	668	-
Stage 2	-	-	-	-	-	-	632	645	-	633	609	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1304	-	-	1399	-	-	213	320	873	310	332	815
Mov Cap-2 Maneuver	-	-	-	-	-	-	213	320	-	310	332	-
Stage 1	-	-	-	-	-	-	588	563	-	654	651	-
Stage 2	-	-	-	-	-	-	468	628	-	548	559	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3	0.9	14	15.4
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	286	873	1304	-	-	1399	-	-	310	623
HCM Lane V/C Ratio	0.082	0.027	0.081	-	-	0.025	-	-	0.247	0.312
HCM Control Delay (s)	18.7	9.2	8	-	-	7.6	-	-	20.4	13.4
HCM Lane LOS	C	A	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0.1	0.3	-	-	0.1	-	-	1	1.3

Scenario Two

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	21	27	95	16	16	11	74	175	27	69	673	106
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	28	100	17	17	12	78	184	28	73	708	112

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1277	1277	764	1278	1319	198	820	0	0	213	0	0
Stage 1	909	909	-	354	354	-	-	-	-	-	-	-
Stage 2	368	368	-	924	965	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	143	166	404	143	157	843	809	-	-	1357	-	-
Stage 1	329	354	-	663	630	-	-	-	-	-	-	-
Stage 2	652	621	-	323	333	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	108	133	404	77	126	843	809	-	-	1357	-	-
Mov Cap-2 Maneuver	108	133	-	77	126	-	-	-	-	-	-	-
Stage 1	293	318	-	590	561	-	-	-	-	-	-	-
Stage 2	555	553	-	199	299	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29.5	49.8	2.7	0.6
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	809	-	-	121	404	124	1357	-	-
HCM Lane V/C Ratio	0.096	-	-	0.418	0.248	0.365	0.054	-	-
HCM Control Delay (s)	9.9	0	-	54.6	16.8	49.8	7.8	0	-
HCM Lane LOS	A	A	-	F	C	E	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	1.8	1	1.5	0.2	-	-

HCM 2010 Signalized Intersection Summary
2: Minaret Road & Lake Mary Road/Main Street

12/17/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	85	438	103	59	328	138	243	249	80	544	43	106
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	89	461	108	62	345	145	256	262	84	605	0	112
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	125	778	348	107	742	785	383	402	342	1001	0	434
Arrive On Green	0.07	0.22	0.22	0.06	0.21	0.21	0.22	0.22	0.22	0.28	0.00	0.27
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	3548	0	1583
Grp Volume(v), veh/h	89	461	108	62	345	145	256	262	84	605	0	112
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	0	1583
Q Serve(g_s), s	3.5	8.4	4.1	2.5	6.2	3.7	9.5	9.3	3.2	10.7	0.0	4.0
Cycle Q Clear(g_c), s	3.5	8.4	4.1	2.5	6.2	3.7	9.5	9.3	3.2	10.7	0.0	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	125	778	348	107	742	785	383	402	342	1001	0	434
V/C Ratio(X)	0.71	0.59	0.31	0.58	0.46	0.18	0.67	0.65	0.25	0.60	0.00	0.26
Avail Cap(c_a), veh/h	150	931	417	150	931	870	513	539	458	1376	0	601
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	0.00	1.00
Uniform Delay (d), s/veh	32.8	25.3	23.6	33.0	25.0	10.1	25.9	25.8	23.4	22.4	0.0	20.5
Incr Delay (d2), s/veh	10.4	1.3	0.9	3.6	0.8	0.2	4.7	4.2	0.9	2.4	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	4.2	1.9	1.3	3.1	2.5	5.2	5.2	1.5	5.5	0.0	1.9
LnGrp Delay(d),s/veh	43.3	26.6	24.5	36.6	25.8	10.3	30.6	30.0	24.3	24.8	0.0	21.8
LnGrp LOS	D	C	C	D	C	B	C	C	C	C		C
Approach Vol, veh/h		658			552			602			717	
Approach Delay, s/veh		28.5			22.9			29.5			24.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.4	19.9		24.4	9.1	19.1		19.6
Change Period (Y+Rc), s	4.1	4.9		4.6	4.1	4.9		4.9
Max Green Setting (Gmax), s	6.0	18.1		27.4	6.0	18.1		20.0
Max Q Clear Time (g_c+I1), s	4.5	10.4		12.7	5.5	8.2		11.5
Green Ext Time (p_c), s	0.0	4.5		7.1	0.0	5.5		3.2

Intersection Summary	
HCM 2010 Ctrl Delay	26.3
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	1011	31	22	522	44	5	5	11	26	5	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	1064	33	23	549	46	5	5	12	27	5	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	596	0	0	1097	0	0	1447	1765	548	1196	1758	298
Stage 1	-	-	-	-	-	-	1123	1123	-	619	619	-
Stage 2	-	-	-	-	-	-	324	642	-	577	1139	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	976	-	-	632	-	-	92	83	480	142	84	698
Stage 1	-	-	-	-	-	-	219	279	-	443	478	-
Stage 2	-	-	-	-	-	-	662	467	-	469	274	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	976	-	-	632	-	-	77	74	480	120	75	698
Mov Cap-2 Maneuver	-	-	-	-	-	-	77	74	-	120	75	-
Stage 1	-	-	-	-	-	-	207	263	-	418	452	-
Stage 2	-	-	-	-	-	-	598	441	-	423	259	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.7	36.8	36.7
HCM LOS			E	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	135	976	-	-	632	-	-	168
HCM Lane V/C Ratio	0.164	0.022	-	-	0.037	-	-	0.332
HCM Control Delay (s)	36.8	8.8	0.2	-	10.9	0.3	-	36.7
HCM Lane LOS	E	A	A	-	B	A	-	E
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0.1	-	-	1.4

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	109	1071	32	50	543	102	25	3	32	93	9	78
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	-	150	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	115	1127	34	53	572	107	26	3	34	98	9	82

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	679	0	0	1161	0	0	1770	2158	581	1526	2122	339
Stage 1	-	-	-	-	-	-	1374	1374	-	731	731	-
Stage 2	-	-	-	-	-	-	396	784	-	795	1391	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	909	-	-	597	-	-	53	47	457	~ 81	50	657
Stage 1	-	-	-	-	-	-	153	211	-	379	425	-
Stage 2	-	-	-	-	-	-	601	402	-	347	207	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	909	-	-	597	-	-	36	37	457	~ 62	40	657
Mov Cap-2 Maneuver	-	-	-	-	-	-	101	113	-	149	101	-
Stage 1	-	-	-	-	-	-	134	184	-	331	387	-
Stage 2	-	-	-	-	-	-	467	366	-	276	181	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.8	37	51.4
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	174	909	-	-	597	-	-	143	657
HCM Lane V/C Ratio	0.363	0.126	-	-	0.088	-	-	0.751	0.125
HCM Control Delay (s)	37	9.5	-	-	11.6	-	-	82	11.3
HCM Lane LOS	E	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	1.5	0.4	-	-	0.3	-	-	4.5	0.4

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

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	86	1074	36	11	667	35	12	0	18	17	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	40
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	91	1131	38	12	702	37	13	0	19	18	0	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	739	0	0	1168	0	0	1705	2093	584	1490	2093	369
Stage 1	-	-	-	-	-	-	1331	1331	-	744	744	-
Stage 2	-	-	-	-	-	-	374	762	-	746	1349	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	863	-	-	594	-	-	59	52	455	86	52	628
Stage 1	-	-	-	-	-	-	163	222	-	373	420	-
Stage 2	-	-	-	-	-	-	619	412	-	372	217	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	863	-	-	594	-	-	52	46	455	75	46	628
Mov Cap-2 Maneuver	-	-	-	-	-	-	118	131	-	180	132	-
Stage 1	-	-	-	-	-	-	146	199	-	334	412	-
Stage 2	-	-	-	-	-	-	590	404	-	319	194	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.2	24.9	19.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	212	863	-	-	594	-	-	180	628
HCM Lane V/C Ratio	0.149	0.105	-	-	0.019	-	-	0.099	0.027
HCM Control Delay (s)	24.9	9.7	-	-	11.2	-	-	27.2	10.9
HCM Lane LOS	C	A	-	-	B	-	-	D	B
HCM 95th %tile Q(veh)	0.5	0.4	-	-	0.1	-	-	0.3	0.1

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	31	1052	26	19	665	60	21	0	26	108	5	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	35
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	1107	27	20	700	63	22	0	27	114	5	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	763	0	0	1135	0	0	1579	1989	567	1391	1972	382
Stage 1	-	-	-	-	-	-	1186	1186	-	772	772	-
Stage 2	-	-	-	-	-	-	393	803	-	619	1200	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	845	-	-	611	-	-	74	60	467	~ 102	62	616
Stage 1	-	-	-	-	-	-	200	260	-	358	407	-
Stage 2	-	-	-	-	-	-	603	394	-	443	256	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	845	-	-	611	-	-	65	56	467	~ 91	58	616
Mov Cap-2 Maneuver	-	-	-	-	-	-	150	158	-	206	155	-
Stage 1	-	-	-	-	-	-	192	250	-	344	394	-
Stage 2	-	-	-	-	-	-	549	381	-	401	246	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.3	23.9	38.5
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	240	845	-	-	611	-	-	203	616
HCM Lane V/C Ratio	0.206	0.039	-	-	0.033	-	-	0.586	0.046
HCM Control Delay (s)	23.9	9.4	-	-	11.1	-	-	45.1	11.1
HCM Lane LOS	C	A	-	-	B	-	-	E	B
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0.1	-	-	3.2	0.1

Notes

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

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	994	192	11	668	76	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1046	202	12	703	80	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1248	0	1522	624
Stage 1	-	-	-	-	1147	-
Stage 2	-	-	-	-	375	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	553	-	109	428
Stage 1	-	-	-	-	265	-
Stage 2	-	-	-	-	665	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	553	-	107	428
Mov Cap-2 Maneuver	-	-	-	-	209	-
Stage 1	-	-	-	-	265	-
Stage 2	-	-	-	-	651	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	31.6
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	236	-	-	553	-
HCM Lane V/C Ratio	0.437	-	-	0.021	-
HCM Control Delay (s)	31.6	-	-	11.6	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	2.1	-	-	0.1	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	352	664	80	281	398	69
Number	2	12	1	6	3	18
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	371	699	84	296	419	73
Adj No. of Lanes	2	1	1	2	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1273	1088	149	1847	570	509
Arrive On Green	0.36	0.36	0.08	0.52	0.32	0.32
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583
Grp Volume(v), veh/h	371	699	84	296	419	73
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583
Q Serve(g_s), s	3.8	12.6	2.3	2.2	10.7	1.7
Cycle Q Clear(g_c), s	3.8	12.6	2.3	2.2	10.7	1.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1273	1088	149	1847	570	509
V/C Ratio(X)	0.29	0.64	0.57	0.16	0.73	0.14
Avail Cap(c_a), veh/h	1310	1104	212	2011	799	713
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	11.7	4.5	22.5	6.4	15.4	12.3
Incr Delay (d2), s/veh	0.3	1.9	2.5	0.1	4.5	0.3
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	5.8	1.2	1.1	6.0	0.8
LnGrp Delay(d),s/veh	12.0	6.4	25.0	6.5	19.9	12.6
LnGrp LOS	B	A	C	A	B	B
Approach Vol, veh/h	1070			380	492	
Approach Delay, s/veh	8.3			10.6	18.8	
Approach LOS	A			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.3	22.4				30.6		20.4
Change Period (Y+Rc), s	4.1	4.9				4.9		4.6
Max Green Setting (Gmax), s	6.0	18.0				28.1		22.4
Max Q Clear Time (g_c+I1), s	4.3	14.6				4.2		12.7
Green Ext Time (p_c), s	0.0	2.8				15.0		3.1

Intersection Summary	
HCM 2010 Ctrl Delay	11.4
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	344	53	22	313	5	31	5	32	5	5	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	56	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	362	56	23	329	5	33	5	34	5	5	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	335	0	0	418	0	0	627	794	209	585	819	167
Stage 1	-	-	-	-	-	-	413	413	-	378	378	-
Stage 2	-	-	-	-	-	-	214	381	-	207	441	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1221	-	-	1138	-	-	368	319	797	394	309	848
Stage 1	-	-	-	-	-	-	587	592	-	616	614	-
Stage 2	-	-	-	-	-	-	768	612	-	776	575	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1221	-	-	1138	-	-	351	309	797	365	300	848
Mov Cap-2 Maneuver	-	-	-	-	-	-	450	409	-	463	398	-
Stage 1	-	-	-	-	-	-	581	586	-	610	602	-
Stage 2	-	-	-	-	-	-	735	600	-	729	569	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.5	11.9	11.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	444	797	1221	-	-	1138	-	-	586
HCM Lane V/C Ratio	0.085	0.042	0.009	-	-	0.02	-	-	0.04
HCM Control Delay (s)	13.9	9.7	8	-	-	8.2	-	-	11.4
HCM Lane LOS	B	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0.1	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	369	12	2	324	0	11	0	6	5	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	400	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	388	13	2	341	0	12	0	6	5	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	341	0	0	401	0	0	570	740	201	539	746	171
Stage 1	-	-	-	-	-	-	395	395	-	345	345	-
Stage 2	-	-	-	-	-	-	175	345	-	194	401	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1215	-	-	1154	-	-	404	343	806	426	340	843
Stage 1	-	-	-	-	-	-	602	603	-	644	635	-
Stage 2	-	-	-	-	-	-	810	635	-	789	599	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1215	-	-	1154	-	-	401	342	806	422	339	843
Mov Cap-2 Maneuver	-	-	-	-	-	-	544	499	-	422	339	-
Stage 1	-	-	-	-	-	-	602	603	-	644	634	-
Stage 2	-	-	-	-	-	-	804	634	-	783	599	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	11	11.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	615	1215	-	-	1154	-	-	562
HCM Lane V/C Ratio	0.029	-	-	-	0.002	-	-	0.019
HCM Control Delay (s)	11	0	-	-	8.1	-	-	11.5
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	5	17	5	5	32	22	418	11	21	679	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	55	-	-	45	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	5	18	5	5	34	23	440	12	22	715	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1280	1266	724	1271	1269	446	733	0	0	452	0	0
Stage 1	768	768	-	492	492	-	-	-	-	-	-	-
Stage 2	512	498	-	779	777	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	143	169	426	145	168	612	872	-	-	1109	-	-
Stage 1	394	411	-	558	548	-	-	-	-	-	-	-
Stage 2	545	544	-	389	407	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	127	161	426	131	160	612	872	-	-	1109	-	-
Mov Cap-2 Maneuver	127	161	-	131	160	-	-	-	-	-	-	-
Stage 1	384	403	-	543	534	-	-	-	-	-	-	-
Stage 2	496	530	-	360	399	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.3	17	0.5	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	872	-	-	237	345	1109	-	-
HCM Lane V/C Ratio	0.027	-	-	0.124	0.128	0.02	-	-
HCM Control Delay (s)	9.2	-	-	22.3	17	8.3	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	16	11	69	16	16	27	53	378	5	32	580	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	12	73	17	17	28	56	398	5	34	611	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1230	1210	627	1249	1224	401	644	0	0	403	0	0
Stage 1	695	695	-	512	512	-	-	-	-	-	-	-
Stage 2	535	515	-	737	712	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	154	183	484	150	179	649	941	-	-	1156	-	-
Stage 1	433	444	-	545	536	-	-	-	-	-	-	-
Stage 2	529	535	-	410	436	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	127	167	484	113	163	649	941	-	-	1156	-	-
Mov Cap-2 Maneuver	127	167	-	113	163	-	-	-	-	-	-	-
Stage 1	407	431	-	513	504	-	-	-	-	-	-	-
Stage 2	460	503	-	329	423	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.2	29.2	1.1	0.4
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	941	-	-	287	210	1156	-	-
HCM Lane V/C Ratio	0.059	-	-	0.352	0.296	0.029	-	-
HCM Control Delay (s)	9.1	-	-	24.2	29.2	8.2	-	-
HCM Lane LOS	A	-	-	C	D	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.5	1.2	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	91	189	48	16	113	86	27	112	11	178	209	53
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	96	199	51	17	119	91	28	118	12	187	220	56
Adj No. of Lanes	1	2	0	1	1	1	1	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	806	202	49	416	324	73	416	325	237	453	115
Arrive On Green	0.09	0.29	0.27	0.03	0.22	0.20	0.04	0.22	0.21	0.13	0.32	0.30
Sat Flow, veh/h	1774	2806	702	1774	1863	1583	1774	1863	1583	1774	1433	365
Grp Volume(v), veh/h	96	124	126	17	119	91	28	118	12	187	0	276
Grp Sat Flow(s),veh/h/ln	1774	1770	1739	1774	1863	1583	1774	1863	1583	1774	0	1798
Q Serve(g_s), s	2.5	2.6	2.7	0.5	2.6	2.4	0.8	2.6	0.3	5.0	0.0	6.1
Cycle Q Clear(g_c), s	2.5	2.6	2.7	0.5	2.6	2.4	0.8	2.6	0.3	5.0	0.0	6.1
Prop In Lane	1.00		0.40	1.00		1.00	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	162	509	500	49	416	324	73	416	325	237	0	569
V/C Ratio(X)	0.59	0.24	0.25	0.35	0.29	0.28	0.39	0.28	0.04	0.79	0.00	0.49
Avail Cap(c_a), veh/h	222	653	642	222	687	555	222	684	552	255	0	693
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	0.00	1.00
Uniform Delay (d), s/veh	21.3	13.3	13.5	23.3	15.7	16.4	22.8	15.7	15.5	20.5	0.0	13.5
Incr Delay (d2), s/veh	2.5	0.5	0.6	3.2	0.8	1.0	2.5	0.8	0.1	13.7	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.3	1.4	0.3	1.4	1.1	0.4	1.4	0.1	3.3	0.0	3.2
LnGrp Delay(d),s/veh	23.8	13.8	14.1	26.5	16.5	17.4	25.3	16.5	15.6	34.1	0.0	14.9
LnGrp LOS	C	B	B	C	B	B	C	B	B	C		B
Approach Vol, veh/h		346			227			158			463	
Approach Delay, s/veh		16.7			17.6			18.0			22.7	
Approach LOS		B			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.3	18.0	6.0	19.4	8.5	14.9	10.5	14.9
Change Period (Y+Rc), s	4.1	4.9	4.1	4.9	4.1	4.9	4.1	4.9
Max Green Setting (Gmax), s	6.0	17.1	6.0	17.9	6.0	17.1	6.9	17.0
Max Q Clear Time (g_c+I1), s	2.5	4.7	2.8	8.1	4.5	4.6	7.0	4.6
Green Ext Time (p_c), s	0.0	2.8	0.0	2.2	0.0	2.9	0.0	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	19.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	191	678	101	90	366	69	112	183	43	102	237	53
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	201	714	106	95	385	73	118	193	45	107	249	56
Adj No. of Lanes	1	2	0	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	1081	160	140	537	457	151	361	307	146	356	303
Arrive On Green	0.14	0.35	0.35	0.08	0.29	0.29	0.09	0.19	0.19	0.08	0.19	0.19
Sat Flow, veh/h	1774	3093	459	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	201	408	412	95	385	73	118	193	45	107	249	56
Grp Sat Flow(s),veh/h/ln	1774	1770	1782	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	6.7	11.9	11.9	3.2	11.3	2.1	4.0	5.7	1.4	3.6	7.6	1.8
Cycle Q Clear(g_c), s	6.7	11.9	11.9	3.2	11.3	2.1	4.0	5.7	1.4	3.6	7.6	1.8
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	248	618	623	140	537	457	151	361	307	146	356	303
V/C Ratio(X)	0.81	0.66	0.66	0.68	0.72	0.16	0.78	0.53	0.15	0.73	0.70	0.19
Avail Cap(c_a), veh/h	317	732	737	201	648	551	201	550	468	201	550	468
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	25.4	16.8	16.8	27.3	19.4	16.2	27.3	22.1	20.4	27.3	23.0	20.7
Incr Delay (d2), s/veh	10.6	2.0	2.0	4.3	3.5	0.2	11.7	1.6	0.3	6.8	3.3	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	4.0	6.1	6.2	1.7	6.3	0.9	2.4	3.1	0.7	2.0	4.2	0.8
LnGrp Delay(d),s/veh	36.0	18.8	18.8	31.6	22.9	16.4	39.0	23.7	20.7	34.1	26.3	21.0
LnGrp LOS	D	B	B	C	C	B	D	C	C	C	C	C
Approach Vol, veh/h		1021			553			356			412	
Approach Delay, s/veh		22.2			23.5			28.4			27.6	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	26.2	9.3	16.5	12.6	22.5	9.1	16.7
Change Period (Y+Rc), s	4.1	4.9	4.1	4.9	4.1	4.9	4.1	4.9
Max Green Setting (Gmax), s	6.9	25.2	6.9	18.0	10.9	21.2	6.9	18.0
Max Q Clear Time (g_c+I1), s	5.2	13.9	6.0	9.6	8.7	13.3	5.6	7.7
Green Ext Time (p_c), s	0.0	5.5	0.0	2.0	0.1	4.3	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	24.4
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	149	383	16	0	11	250	19	0	32	5	5
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	157	403	17	0	12	263	20	0	34	5	5
Number of Lanes	0	0	2	0	0	0	2	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	12.7	9.8	9.6
HCM LOS	B	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	76%	44%	0%	8%	0%	14%
Vol Thru, %	12%	56%	92%	92%	87%	6%
Vol Right, %	12%	0%	8%	0%	13%	80%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	42	341	208	136	144	80
LT Vol	32	149	0	11	0	11
Through Vol	5	192	192	125	125	5
RT Vol	5	0	16	0	19	64
Lane Flow Rate	44	358	218	143	152	84
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.075	0.537	0.31	0.219	0.226	0.126
Departure Headway (Hd)	6.108	5.392	5.117	5.511	5.377	5.394
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	590	663	697	646	661	658
Service Time	4.108	3.164	2.89	3.295	3.161	3.486
HCM Lane V/C Ratio	0.075	0.54	0.313	0.221	0.23	0.128
HCM Control Delay	9.6	14.3	10.2	9.9	9.7	9.3
HCM Lane LOS	A	B	B	A	A	A
HCM 95th-tile Q	0.2	3.2	1.3	0.8	0.9	0.4

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	JHB
Agency/Co.	LSC
Date Performed	11/10/2015
Analysis Time Period	Winter Sat - Scenario 2

Site Information

Intersection	SR 203 EB / Meridian Blvd
Jurisdiction	
Analysis Year	2030

Project Description: Mammoth Mobility Element EIR Traffic

East/West Street: SR 203 EB | North/South Street: Meridian Blvd

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	4	299	72			
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.90	0.90	0.90
Hourly Flow Rate, HFR (veh/h)	4	314	75	0	0	0
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	2	1	0	0	0
Configuration	L	T	R			
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)		104		1	123	
Peak-Hour Factor, PHF	0.90	0.95	0.90	0.95	0.95	0.90
Hourly Flow Rate, HFR (veh/h)	0	109	0	1	129	0
Percent Heavy Vehicles	2	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		T		LT		

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L			T		LT		
v (veh/h)	4			109		130		
C (m) (veh/h)	1636			598		544		
v/c	0.00			0.18		0.24		
95% queue length	0.01			0.66		0.93		
Control Delay (s/veh)	7.2			12.4		13.7		
LOS	A			B		B		
Approach Delay (s/veh)	--	--	12.4			13.7		
Approach LOS	--	--	B			B		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JHB	Intersection	SR 203 WB / Meridian Blvd
Agency/Co.	LSC	Jurisdiction	
Date Performed	11/10/2015	Analysis Year	2030
Analysis Time Period	Winter Sat - Scenario 2		

Project Description: Mammoth Mobility Element EIR Traffic

East/West Street: SR 203 WB | North/South Street: Meridian Blvd

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)				123	263	
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.95	0.95	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	129	276	0
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	0	0	1	2	0
Configuration				L	T	
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	108					
Peak-Hour Factor, PHF	0.95	0.90	0.90	0.90	0.90	1.00
Hourly Flow Rate, HFR (veh/h)	113	0	0	0	0	0
Percent Heavy Vehicles	2	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	0	0	0	0	0
Configuration	L					

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L					
v (veh/h)		129	113					
C (m) (veh/h)		1623	561					
v/c		0.08	0.20					
95% queue length		0.26	0.75					
Control Delay (s/veh)		7.4	13.0					
LOS		A	B					
Approach Delay (s/veh)	--	--	13.0					
Approach LOS	--	--	B					

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Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	37	16	6	5	11	22	6	199	5	38	237	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	55	-	-	55	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	17	6	5	12	23	6	209	5	40	249	57

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	600	585	278	594	611	212	306	0	0	215	0	0
Stage 1	358	358	-	225	225	-	-	-	-	-	-	-
Stage 2	242	227	-	369	386	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	413	423	761	417	409	828	1255	-	-	1355	-	-
Stage 1	660	628	-	778	718	-	-	-	-	-	-	-
Stage 2	762	716	-	651	610	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	382	409	761	390	395	828	1255	-	-	1355	-	-
Mov Cap-2 Maneuver	382	409	-	390	395	-	-	-	-	-	-	-
Stage 1	657	609	-	774	715	-	-	-	-	-	-	-
Stage 2	725	713	-	609	592	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.3	11.9	0.2	0.9
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1255	-	-	410	565	1355	-	-
HCM Lane V/C Ratio	0.005	-	-	0.151	0.071	0.03	-	-
HCM Control Delay (s)	7.9	-	-	15.3	11.9	7.7	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	85	123	1	1	140	49	1	1	1	54	1	118
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	115	-	-	100	-	-	-	-	50	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	89	129	1	1	147	52	1	1	1	57	1	124

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	199	0	0	131	0	0	547	510	130	484	484	173
Stage 1	-	-	-	-	-	-	309	309	-	175	175	-
Stage 2	-	-	-	-	-	-	238	201	-	309	309	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1373	-	-	1454	-	-	448	467	920	493	483	871
Stage 1	-	-	-	-	-	-	701	660	-	827	754	-
Stage 2	-	-	-	-	-	-	765	735	-	701	660	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1373	-	-	1454	-	-	364	436	920	467	451	871
Mov Cap-2 Maneuver	-	-	-	-	-	-	364	436	-	467	451	-
Stage 1	-	-	-	-	-	-	656	617	-	773	753	-
Stage 2	-	-	-	-	-	-	655	734	-	654	617	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.2	0	12.4	11.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	397	920	1373	-	-	1454	-	-	467	864
HCM Lane V/C Ratio	0.005	0.001	0.065	-	-	0.001	-	-	0.122	0.145
HCM Control Delay (s)	14.1	8.9	7.8	-	-	7.5	-	-	13.8	9.9
HCM Lane LOS	B	A	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0	0	0.2	-	-	0	-	-	0.4	0.5

Scenario Three

Intersection	
Int Delay, s/veh	15.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	35	105	25	20	15	80	195	40	100	745	115
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	37	111	26	21	16	84	205	42	105	784	121

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1468	1471	845	1469	1511	226	905	0	0	247	0	0
Stage 1	1055	1055	-	395	395	-	-	-	-	-	-	-
Stage 2	413	416	-	1074	1116	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	106	127	363	106	120	813	752	-	-	1319	-	-
Stage 1	273	302	-	630	605	-	-	-	-	-	-	-
Stage 2	616	592	-	266	283	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	67	92	363	41	87	813	752	-	-	1319	-	-
Mov Cap-2 Maneuver	67	92	-	41	87	-	-	-	-	-	-	-
Stage 1	238	252	-	548	526	-	-	-	-	-	-	-
Stage 2	504	515	-	132	236	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	62.3	180.6	2.6	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	752	-	-	80	363	70	1319	-	-
HCM Lane V/C Ratio	0.112	-	-	0.789	0.304	0.902	0.08	-	-
HCM Control Delay (s)	10.4	0	-	137.7	19.2	180.6	8	0	-
HCM Lane LOS	B	A	-	F	C	F	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	3.9	1.3	4.5	0.3	-	-

HCM 2010 Signalized Intersection Summary
2: Minaret Road & Lake Mary Road/Main Street

12/14/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	115	500	190	105	385	160	465	315	125	615	75	140
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	121	526	200	111	405	168	489	332	132	703	0	147
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	137	658	294	137	658	769	509	534	454	1053	0	461
Arrive On Green	0.08	0.19	0.19	0.08	0.19	0.19	0.29	0.29	0.29	0.30	0.00	0.29
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	3548	0	1583
Grp Volume(v), veh/h	121	526	200	111	405	168	489	332	132	703	0	147
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	0	1583
Q Serve(g_s), s	7.1	14.9	12.3	6.4	11.0	6.4	28.4	16.2	6.8	18.2	0.0	7.6
Cycle Q Clear(g_c), s	7.1	14.9	12.3	6.4	11.0	6.4	28.4	16.2	6.8	18.2	0.0	7.6
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	137	658	294	137	658	769	509	534	454	1053	0	461
V/C Ratio(X)	0.88	0.80	0.68	0.81	0.62	0.22	0.96	0.62	0.29	0.67	0.00	0.32
Avail Cap(c_a), veh/h	137	674	301	137	674	776	509	534	454	1391	0	612
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	0.00	1.00
Uniform Delay (d), s/veh	47.8	40.7	39.7	47.5	39.1	15.5	36.7	32.3	29.0	32.2	0.0	29.0
Incr Delay (d2), s/veh	42.9	7.5	7.4	28.1	2.2	0.3	30.5	3.4	0.8	3.0	0.0	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	5.1	7.9	6.0	4.2	5.6	4.5	18.2	8.8	3.1	9.3	0.0	3.5
LnGrp Delay(d),s/veh	90.6	48.2	47.1	75.6	41.3	15.7	67.2	35.8	29.8	35.2	0.0	30.6
LnGrp LOS	F	D	D	E	D	B	E	D	C	D		C
Approach Vol, veh/h		847			684			953			850	
Approach Delay, s/veh		54.0			40.6			51.1			34.4	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.1	23.4		35.0	12.1	23.4		34.0
Change Period (Y+Rc), s	4.1	4.9		4.6	4.1	4.9		4.9
Max Green Setting (Gmax), s	8.0	19.0		40.4	8.0	19.0		29.1
Max Q Clear Time (g_c+I1), s	8.4	16.9		20.2	9.1	13.0		30.4
Green Ext Time (p_c), s	0.0	1.7		10.3	0.0	4.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	45.4
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	19.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	1150	65	25	560	80	10	20	15	50	15	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	1211	68	26	589	84	11	21	16	53	16	58

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	674	0	0	1279	0	0	1652	2023	639	1352	2016	337
Stage 1	-	-	-	-	-	-	1297	1297	-	684	684	-
Stage 2	-	-	-	-	-	-	355	726	-	668	1332	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	913	-	-	539	-	-	65	57	419	109	58	659
Stage 1	-	-	-	-	-	-	171	230	-	405	447	-
Stage 2	-	-	-	-	-	-	635	428	-	414	222	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	913	-	-	539	-	-	39	47	419	60	48	659
Mov Cap-2 Maneuver	-	-	-	-	-	-	39	47	-	60	48	-
Stage 1	-	-	-	-	-	-	154	207	-	364	412	-
Stage 2	-	-	-	-	-	-	514	395	-	322	200	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.8	156.2	266.5
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	63	913	-	-	539	-	-	98
HCM Lane V/C Ratio	0.752	0.029	-	-	0.049	-	-	1.289
HCM Control Delay (s)	156.2	9.1	0.4	-	12	0.4	-	266.5
HCM Lane LOS	F	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	3.3	0.1	-	-	0.2	-	-	8.9

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	95	930	25	40	490	160	20	5	25	135	10	115
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	-	150	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	100	979	26	42	516	168	21	5	26	142	11	121

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	684	0	0	1005	0	0	1539	1960	503	1376	1889	342
Stage 1	-	-	-	-	-	-	1192	1192	-	684	684	-
Stage 2	-	-	-	-	-	-	347	768	-	692	1205	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	905	-	-	685	-	-	79	63	514	~ 104	70	654
Stage 1	-	-	-	-	-	-	199	259	-	405	447	-
Stage 2	-	-	-	-	-	-	642	409	-	400	255	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	905	-	-	685	-	-	53	53	514	~ 84	58	654
Mov Cap-2 Maneuver	-	-	-	-	-	-	130	140	-	184	139	-
Stage 1	-	-	-	-	-	-	177	230	-	360	420	-
Stage 2	-	-	-	-	-	-	479	384	-	330	227	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.6	27.8	52.4
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	210	905	-	-	685	-	-	180	654
HCM Lane V/C Ratio	0.251	0.11	-	-	0.061	-	-	0.848	0.185
HCM Control Delay (s)	27.8	9.5	-	-	10.6	-	-	84.6	11.8
HCM Lane LOS	D	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	1	0.4	-	-	0.2	-	-	6	0.7

Notes

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

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	65	905	120	50	610	50	50	10	110	40	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	40
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	68	953	126	53	642	53	53	11	116	42	0	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	695	0	0	1079	0	0	1579	1953	539	1392	1990	347
Stage 1	-	-	-	-	-	-	1153	1153	-	774	774	-
Stage 2	-	-	-	-	-	-	426	800	-	618	1216	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	897	-	-	642	-	-	74	63	487	101	60	649
Stage 1	-	-	-	-	-	-	210	270	-	357	406	-
Stage 2	-	-	-	-	-	-	577	395	-	443	252	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	897	-	-	642	-	-	62	53	487	64	51	649
Mov Cap-2 Maneuver	-	-	-	-	-	-	146	147	-	157	131	-
Stage 1	-	-	-	-	-	-	194	250	-	330	372	-
Stage 2	-	-	-	-	-	-	504	362	-	299	233	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.8	42.1	25.3
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	267	897	-	-	642	-	-	157	649
HCM Lane V/C Ratio	0.67	0.076	-	-	0.082	-	-	0.268	0.049
HCM Control Delay (s)	42.1	9.3	-	-	11.1	-	-	36.1	10.8
HCM Lane LOS	E	A	-	-	B	-	-	E	B
HCM 95th %tile Q(veh)	4.4	0.2	-	-	0.3	-	-	1	0.2

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	1025	15	20	645	75	15	0	20	170	5	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	35
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	1079	16	21	679	79	16	0	21	179	5	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	758	0	0	1095	0	0	1502	1918	547	1332	1887	379
Stage 1	-	-	-	-	-	-	1118	1118	-	761	761	-
Stage 2	-	-	-	-	-	-	384	800	-	571	1126	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	849	-	-	633	-	-	84	67	481	~ 112	70	619
Stage 1	-	-	-	-	-	-	221	281	-	364	412	-
Stage 2	-	-	-	-	-	-	611	395	-	473	278	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	849	-	-	633	-	-	72	64	481	~ 103	66	619
Mov Cap-2 Maneuver	-	-	-	-	-	-	166	172	-	223	169	-
Stage 1	-	-	-	-	-	-	217	276	-	357	398	-
Stage 2	-	-	-	-	-	-	533	382	-	444	273	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.3	20.8	57.4
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	265	849	-	-	633	-	-	221	619
HCM Lane V/C Ratio	0.139	0.019	-	-	0.033	-	-	0.834	0.085
HCM Control Delay (s)	20.8	9.3	-	-	10.9	-	-	70.5	11.4
HCM Lane LOS	C	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0.1	-	-	6.3	0.3

Notes

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

Intersection	
Int Delay, s/veh	3.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1005	210	30	625	115	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1058	221	32	658	121	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1279	0	1560	639
Stage 1	-	-	-	-	1168	-
Stage 2	-	-	-	-	392	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	539	-	~ 103	419
Stage 1	-	-	-	-	258	-
Stage 2	-	-	-	-	652	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	539	-	~ 97	419
Mov Cap-2 Maneuver	-	-	-	-	201	-
Stage 1	-	-	-	-	258	-
Stage 2	-	-	-	-	613	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	49.6
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	229	-	-	539	-
HCM Lane V/C Ratio	0.689	-	-	0.059	-
HCM Control Delay (s)	49.6	-	-	12.1	-
HCM Lane LOS	E	-	-	B	-
HCM 95th %tile Q(veh)	4.4	-	-	0.2	-

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	375	665	105	300	355	75
Number	2	12	1	6	3	18
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	395	700	111	316	374	79
Adj No. of Lanes	2	1	1	2	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1285	1058	171	1911	531	474
Arrive On Green	0.36	0.36	0.10	0.54	0.30	0.30
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583
Grp Volume(v), veh/h	395	700	111	316	374	79
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583
Q Serve(g_s), s	4.0	13.1	3.0	2.2	9.3	1.8
Cycle Q Clear(g_c), s	4.0	13.1	3.0	2.2	9.3	1.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1285	1058	171	1911	531	474
V/C Ratio(X)	0.31	0.66	0.65	0.17	0.70	0.17
Avail Cap(c_a), veh/h	1308	1069	249	2090	805	719
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	11.4	4.9	21.7	5.8	15.5	12.9
Incr Delay (d2), s/veh	0.3	2.2	3.0	0.1	4.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	6.2	1.6	1.1	5.1	0.8
LnGrp Delay(d),s/veh	11.7	7.1	24.7	5.9	19.5	13.2
LnGrp LOS	B	A	C	A	B	B
Approach Vol, veh/h	1095			427	453	
Approach Delay, s/veh	8.7			10.8	18.4	
Approach LOS	A			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.8	22.1				30.9		18.9
Change Period (Y+Rc), s	4.1	4.9				4.9		4.6
Max Green Setting (Gmax), s	6.9	17.5				28.5		22.0
Max Q Clear Time (g_c+I1), s	5.0	15.1				4.2		11.3
Green Ext Time (p_c), s	0.0	2.1				15.5		3.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.4
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	345	85	45	345	10	45	10	45	10	10	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	56	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	363	89	47	363	11	47	11	47	11	11	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	374	0	0	453	0	0	711	897	226	671	937	187
Stage 1	-	-	-	-	-	-	429	429	-	463	463	-
Stage 2	-	-	-	-	-	-	282	468	-	208	474	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1181	-	-	1104	-	-	320	278	777	342	263	823
Stage 1	-	-	-	-	-	-	574	582	-	548	562	-
Stage 2	-	-	-	-	-	-	701	560	-	775	556	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1181	-	-	1104	-	-	295	264	777	302	249	823
Mov Cap-2 Maneuver	-	-	-	-	-	-	408	371	-	407	351	-
Stage 1	-	-	-	-	-	-	569	577	-	543	538	-
Stage 2	-	-	-	-	-	-	645	536	-	708	551	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.9	13	12.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	401	777	1181	-	-	1104	-	-	491
HCM Lane V/C Ratio	0.144	0.061	0.009	-	-	0.043	-	-	0.075
HCM Control Delay (s)	15.5	9.9	8.1	-	-	8.4	-	-	12.9
HCM Lane LOS	C	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.5	0.2	0	-	-	0.1	-	-	0.2

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	395	5	0	395	5	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	400	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	416	5	0	416	5	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	421	0	626	211
Stage 1	-	-	-	-	418	-
Stage 2	-	-	-	-	208	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1135	-	416	794
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	807	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1135	-	416	794
Mov Cap-2 Maneuver	-	-	-	-	566	-
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	807	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	566	-	-	1135	-
HCM Lane V/C Ratio	0.009	-	-	-	-
HCM Control Delay (s)	11.4	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	5	40	5	5	25	45	450	10	15	785	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	55	-	-	45	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	5	42	5	5	26	47	474	11	16	826	42

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1468	1458	847	1477	1474	479	868	0	0	484	0	0
Stage 1	879	879	-	574	574	-	-	-	-	-	-	-
Stage 2	589	579	-	903	900	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	106	129	362	104	127	587	776	-	-	1079	-	-
Stage 1	342	365	-	504	503	-	-	-	-	-	-	-
Stage 2	494	501	-	332	357	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	92	119	362	84	118	587	776	-	-	1079	-	-
Mov Cap-2 Maneuver	92	119	-	84	118	-	-	-	-	-	-	-
Stage 1	321	360	-	473	473	-	-	-	-	-	-	-
Stage 2	438	471	-	285	352	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	37.9	22.5	0.9	0.1
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	776	-	-	176	242	1079	-	-
HCM Lane V/C Ratio	0.061	-	-	0.389	0.152	0.015	-	-
HCM Control Delay (s)	9.9	-	-	37.9	22.5	8.4	-	-
HCM Lane LOS	A	-	-	E	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.7	0.5	0	-	-

Intersection	
Int Delay, s/veh	10.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	15	85	20	20	35	75	475	5	50	715	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	16	89	21	21	37	79	500	5	53	753	53

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1573	1547	779	1598	1572	503	805	0	0	505	0	0
Stage 1	884	884	-	661	661	-	-	-	-	-	-	-
Stage 2	689	663	-	937	911	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	89	114	396	86	110	569	819	-	-	1060	-	-
Stage 1	340	363	-	452	460	-	-	-	-	-	-	-
Stage 2	436	459	-	318	353	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	62	98	396	52	94	569	819	-	-	1060	-	-
Mov Cap-2 Maneuver	62	98	-	52	94	-	-	-	-	-	-	-
Stage 1	307	345	-	408	416	-	-	-	-	-	-	-
Stage 2	350	415	-	223	335	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	66.8	88.3	1.3	0.5
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	819	-	-	174	114	1060	-	-
HCM Lane V/C Ratio	0.096	-	-	0.726	0.693	0.05	-	-
HCM Control Delay (s)	9.9	-	-	66.8	88.3	8.6	-	-
HCM Lane LOS	A	-	-	F	F	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	4.5	3.7	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	150	345	105	35	210	160	60	195	30	345	480	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	158	363	111	37	221	168	63	205	32	363	505	95
Adj No. of Lanes	1	2	0	1	1	1	1	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	199	739	223	80	390	311	110	409	327	410	593	112
Arrive On Green	0.11	0.28	0.26	0.05	0.21	0.20	0.06	0.22	0.21	0.23	0.39	0.38
Sat Flow, veh/h	1774	2681	809	1774	1863	1583	1774	1863	1583	1774	1525	287
Grp Volume(v), veh/h	158	238	236	37	221	168	63	205	32	363	0	600
Grp Sat Flow(s),veh/h/ln	1774	1770	1720	1774	1863	1583	1774	1863	1583	1774	0	1812
Q Serve(g_s), s	6.1	7.9	8.1	1.4	7.5	6.7	2.4	6.8	1.1	13.9	0.0	21.2
Cycle Q Clear(g_c), s	6.1	7.9	8.1	1.4	7.5	6.7	2.4	6.8	1.1	13.9	0.0	21.2
Prop In Lane	1.00		0.47	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	199	488	474	80	390	311	110	409	327	410	0	704
V/C Ratio(X)	0.80	0.49	0.50	0.46	0.57	0.54	0.57	0.50	0.10	0.88	0.00	0.85
Avail Cap(c_a), veh/h	228	555	540	154	507	411	157	476	384	455	0	768
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	0.00	1.00
Uniform Delay (d), s/veh	30.4	21.2	21.5	32.6	24.9	25.3	32.0	24.0	22.5	26.0	0.0	19.7
Incr Delay (d2), s/veh	14.8	1.6	1.7	3.0	2.8	3.1	3.5	2.0	0.3	16.8	0.0	9.8
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	3.8	4.1	4.0	0.8	4.1	3.2	1.3	3.7	0.5	8.7	0.0	12.4
LnGrp Delay(d),s/veh	45.2	22.9	23.2	35.6	27.6	28.4	35.5	26.0	22.8	42.8	0.0	29.5
LnGrp LOS	D	C	C	D	C	C	D	C	C	D		C
Approach Vol, veh/h		632			426			300			963	
Approach Delay, s/veh		28.6			28.6			27.7			34.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	23.3	8.3	31.3	11.8	18.7	20.2	19.4
Change Period (Y+Rc), s	4.1	4.9	4.1	4.9	4.1	4.9	4.1	4.9
Max Green Setting (Gmax), s	6.0	21.1	6.1	28.8	8.9	18.2	17.9	17.0
Max Q Clear Time (g_c+I1), s	3.4	10.1	4.4	23.2	8.1	9.5	15.9	8.8
Green Ext Time (p_c), s	0.0	5.1	0.0	3.1	0.0	4.3	0.3	4.3

Intersection Summary	
HCM 2010 Ctrl Delay	30.9
HCM 2010 LOS	C

HCM 2010 Signalized Intersection Summary
14: Old Mammoth Road & Meridian Boulevard

12/14/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	190	695	130	110	370	80	150	265	55	130	360	65
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	200	732	137	116	389	84	158	279	58	137	379	68
Adj No. of Lanes	1	2	0	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	240	970	181	147	509	433	195	468	398	172	444	377
Arrive On Green	0.14	0.33	0.33	0.08	0.27	0.27	0.11	0.25	0.25	0.10	0.24	0.24
Sat Flow, veh/h	1774	2977	557	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	200	435	434	116	389	84	158	279	58	137	379	68
Grp Sat Flow(s),veh/h/ln	1774	1770	1764	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	8.1	16.3	16.3	4.8	14.2	3.0	6.4	9.8	2.1	5.6	14.4	2.5
Cycle Q Clear(g_c), s	8.1	16.3	16.3	4.8	14.2	3.0	6.4	9.8	2.1	5.6	14.4	2.5
Prop In Lane	1.00		0.32	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	240	576	575	147	509	433	195	468	398	172	444	377
V/C Ratio(X)	0.83	0.75	0.76	0.79	0.76	0.19	0.81	0.60	0.15	0.79	0.85	0.18
Avail Cap(c_a), veh/h	261	648	646	165	581	494	213	471	400	223	481	409
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	31.2	22.3	22.3	33.3	24.7	20.6	32.2	24.4	21.5	32.7	27.0	22.4
Incr Delay (d2), s/veh	18.3	4.8	4.9	19.1	5.7	0.3	18.4	2.4	0.2	12.6	13.7	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	5.2	8.6	8.6	3.1	8.1	1.3	4.2	5.3	1.0	3.3	9.1	1.1
LnGrp Delay(d),s/veh	49.5	27.2	27.2	52.4	30.4	20.9	50.6	26.8	21.8	45.3	40.6	22.7
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	D	C
Approach Vol, veh/h		1069			589			495			584	
Approach Delay, s/veh		31.3			33.4			33.8			39.6	
Approach LOS		C			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	29.0	12.2	22.5	14.1	25.1	11.3	23.5
Change Period (Y+Rc), s	4.1	4.9	4.1	4.9	4.1	4.9	4.1	4.9
Max Green Setting (Gmax), s	6.9	27.1	8.9	19.1	10.9	23.1	9.3	18.7
Max Q Clear Time (g_c+I1), s	6.8	18.3	8.4	16.4	10.1	16.2	7.6	11.8
Green Ext Time (p_c), s	0.0	4.8	0.0	1.2	0.0	4.0	0.1	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	34.0
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	14.8
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	165	520	15	0	10	340	35	0	25	5	5
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	174	547	16	0	11	358	37	0	26	5	5
Number of Lanes	0	0	2	0	0	0	2	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	17.5	11.4	10.2
HCM LOS	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	71%	39%	0%	6%	0%	15%
Vol Thru, %	14%	61%	95%	94%	83%	5%
Vol Right, %	14%	0%	5%	0%	17%	80%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	35	425	275	180	205	100
LT Vol	25	165	0	10	0	15
Through Vol	5	260	260	170	170	5
RT Vol	5	0	15	0	35	80
Lane Flow Rate	37	447	289	189	216	105
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.068	0.704	0.437	0.31	0.344	0.173
Departure Headway (Hd)	6.644	5.669	5.434	5.89	5.741	5.931
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	539	640	663	610	628	605
Service Time	4.682	3.391	3.156	3.62	3.471	3.965
HCM Lane V/C Ratio	0.069	0.698	0.436	0.31	0.344	0.174
HCM Control Delay	10.2	20.8	12.3	11.3	11.5	10.2
HCM Lane LOS	B	C	B	B	B	B
HCM 95th-tile Q	0.2	5.7	2.2	1.3	1.5	0.6

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	JHB
Agency/Co.	LSC
Date Performed	11/10/2015
Analysis Time Period	Winter Sat - Scenario 3

Site Information

Intersection	SR 203 EB / Meridian Blvd
Jurisdiction	
Analysis Year	2030

Project Description: Mammoth Mobility Element EIR Traffic

East/West Street: SR 203 EB | North/South Street: Meridian Blvd

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	5	300	90			
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.90	0.90	0.90
Hourly Flow Rate, HFR (veh/h)	5	315	94	0	0	0
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	2	1	0	0	0
Configuration	L	T	R			
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)		95		1	120	
Peak-Hour Factor, PHF	0.90	0.95	0.90	0.95	0.95	0.90
Hourly Flow Rate, HFR (veh/h)	0	100	0	1	126	0
Percent Heavy Vehicles	2	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		T		LT		

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L			T		LT		
v (veh/h)	5			100		127		
C (m) (veh/h)	1636			594		527		
v/c	0.00			0.17		0.24		
95% queue length	0.01			0.60		0.94		
Control Delay (s/veh)	7.2			12.3		14.0		
LOS	A			B		B		
Approach Delay (s/veh)	--	--	12.3			14.0		
Approach LOS	--	--	B			B		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JHB	Intersection	SR 203 WB / Meridian Blvd
Agency/Co.	LSC	Jurisdiction	
Date Performed	11/10/2015	Analysis Year	2030
Analysis Time Period	Winter Sat - Scenario 3		

Project Description: Mammoth Mobility Element EIR Traffic

East/West Street: SR 203 WB | North/South Street: Meridian Blvd

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)				120	295	
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.95	0.95	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	126	310	0
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	0	0	1	2	0
Configuration				L	T	
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	100					
Peak-Hour Factor, PHF	0.95	0.90	0.90	0.90	0.90	1.00
Hourly Flow Rate, HFR (veh/h)	105	0	0	0	0	0
Percent Heavy Vehicles	2	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	0	0	0	0	0
Configuration	L					

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L					
v (veh/h)		126	105					
C (m) (veh/h)		1623	553					
v/c		0.08	0.19					
95% queue length		0.25	0.69					
Control Delay (s/veh)		7.4	13.0					
LOS		A	B					
Approach Delay (s/veh)	--	--	13.0					
Approach LOS	--	--	B					

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Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	35	35	15	5	20	65	15	345	5	115	410	100
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	55	-	-	55	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	37	16	5	21	68	16	363	5	121	432	105

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1168	1126	484	1150	1176	366	537	0	0	368	0	0
Stage 1	726	726	-	397	397	-	-	-	-	-	-	-
Stage 2	442	400	-	753	779	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	170	205	583	175	191	679	1031	-	-	1191	-	-
Stage 1	416	430	-	629	603	-	-	-	-	-	-	-
Stage 2	594	602	-	402	406	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	126	181	583	131	169	679	1031	-	-	1191	-	-
Mov Cap-2 Maneuver	126	181	-	131	169	-	-	-	-	-	-	-
Stage 1	410	386	-	619	594	-	-	-	-	-	-	-
Stage 2	507	593	-	318	365	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	47.1	18.7	0.4	1.5
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1031	-	-	171	357	1191	-	-
HCM Lane V/C Ratio	0.015	-	-	0.523	0.265	0.102	-	-
HCM Control Delay (s)	8.5	-	-	47.1	18.7	8.4	-	-
HCM Lane LOS	A	-	-	E	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	2.6	1.1	0.3	-	-

Intersection	
Int Delay, s/veh	129.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	115	190	55	170	220	105	30	85	115	115	200	215
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	115	-	-	100	-	-	-	-	50	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	121	200	58	179	232	111	32	89	121	121	211	226

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	342	0	0	258	0	0	1334	1171	229	1161	1145	287
Stage 1	-	-	-	-	-	-	471	471	-	645	645	-
Stage 2	-	-	-	-	-	-	863	700	-	516	500	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1217	-	-	1307	-	-	131	193	810	172	~ 200	752
Stage 1	-	-	-	-	-	-	573	560	-	461	467	-
Stage 2	-	-	-	-	-	-	349	441	-	542	543	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1217	-	-	1307	-	-	-	150	810	~ 65	~ 155	752
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	150	-	~ 65	~ 155	-
Stage 1	-	-	-	-	-	-	516	504	-	415	403	-
Stage 2	-	-	-	-	-	-	101	381	-	341	489	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.6	2.8		$ 390
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	810	1217	-	-	1307	-	-	65	263
HCM Lane V/C Ratio	-	0.149	0.099	-	-	0.137	-	-	1.862	1.661
HCM Control Delay (s)	-	10.2	8.3	-	-	8.2	-	-	$ 544.3	$ 347.3
HCM Lane LOS	-	B	A	-	-	A	-	-	F	F
HCM 95th %tile Q(veh)	-	0.5	0.3	-	-	0.5	-	-	11.1	27.7

Notes

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

Scenario Four

Intersection	
Int Delay, s/veh	15.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	35	105	25	20	15	80	195	40	100	745	115
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	37	111	26	21	16	84	205	42	105	784	121

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1468	1471	845	1469	1511	226	905	0	0	247	0	0
Stage 1	1055	1055	-	395	395	-	-	-	-	-	-	-
Stage 2	413	416	-	1074	1116	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	106	127	363	106	120	813	752	-	-	1319	-	-
Stage 1	273	302	-	630	605	-	-	-	-	-	-	-
Stage 2	616	592	-	266	283	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	67	92	363	41	87	813	752	-	-	1319	-	-
Mov Cap-2 Maneuver	67	92	-	41	87	-	-	-	-	-	-	-
Stage 1	238	252	-	548	526	-	-	-	-	-	-	-
Stage 2	504	515	-	132	236	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	62.3	180.6	2.6	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	752	-	-	80	363	70	1319	-	-
HCM Lane V/C Ratio	0.112	-	-	0.789	0.304	0.902	0.08	-	-
HCM Control Delay (s)	10.4	0	-	137.7	19.2	180.6	8	0	-
HCM Lane LOS	B	A	-	F	C	F	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	3.9	1.3	4.5	0.3	-	-

HCM 2010 Signalized Intersection Summary
2: Minaret Road & Lake Mary Road/Main Street

12/14/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	110	530	160	90	400	165	385	310	115	655	65	135
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	116	558	168	95	421	174	405	326	121	738	0	142
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	688	308	121	642	805	452	475	403	1149	0	503
Arrive On Green	0.08	0.19	0.19	0.07	0.18	0.18	0.25	0.25	0.25	0.32	0.00	0.32
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	3548	0	1583
Grp Volume(v), veh/h	116	558	168	95	421	174	405	326	121	738	0	142
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	0	1583
Q Serve(g_s), s	6.5	15.2	9.6	5.3	11.1	6.1	22.2	15.9	6.2	17.9	0.0	6.8
Cycle Q Clear(g_c), s	6.5	15.2	9.6	5.3	11.1	6.1	22.2	15.9	6.2	17.9	0.0	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	144	688	308	121	642	805	452	475	403	1149	0	503
V/C Ratio(X)	0.80	0.81	0.55	0.78	0.66	0.22	0.90	0.69	0.30	0.64	0.00	0.28
Avail Cap(c_a), veh/h	144	702	314	127	667	816	457	480	408	1611	0	709
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	0.00	1.00
Uniform Delay (d), s/veh	45.6	38.9	36.6	46.3	38.4	13.7	36.3	34.0	30.3	29.1	0.0	25.8
Incr Delay (d2), s/veh	26.5	7.8	3.1	24.7	2.9	0.2	21.0	5.5	1.0	2.4	0.0	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	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	8.2	4.5	3.4	5.7	4.5	13.6	8.9	2.8	9.1	0.0	3.1
LnGrp Delay(d),s/veh	72.1	46.7	39.7	70.9	41.2	13.9	57.3	39.5	31.3	31.6	0.0	27.0
LnGrp LOS	E	D	D	E	D	B	E	D	C	C		C
Approach Vol, veh/h		842			690			852			880	
Approach Delay, s/veh		48.8			38.4			46.8			30.8	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.9	23.6		36.7	12.2	22.3		29.7
Change Period (Y+Rc), s	4.1	4.9		4.6	4.1	4.9		4.9
Max Green Setting (Gmax), s	7.1	19.1		45.2	8.1	18.1		25.1
Max Q Clear Time (g_c+I1), s	7.3	17.2		19.9	8.5	13.1		24.2
Green Ext Time (p_c), s	0.0	1.5		12.2	0.0	3.7		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	41.2
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	36

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	1215	60	30	590	90	10	20	15	55	15	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	1279	63	32	621	95	11	21	16	58	16	58

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	716	0	0	1342	0	0	1745	2142	671	1435	2127	358
Stage 1	-	-	-	-	-	-	1363	1363	-	732	732	-
Stage 2	-	-	-	-	-	-	382	779	-	703	1395	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	880	-	-	509	-	-	55	48	399	94	49	638
Stage 1	-	-	-	-	-	-	156	214	-	379	425	-
Stage 2	-	-	-	-	-	-	612	404	-	394	207	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	880	-	-	509	-	-	29	38	399	~ 43	39	638
Mov Cap-2 Maneuver	-	-	-	-	-	-	29	38	-	~ 43	39	-
Stage 1	-	-	-	-	-	-	137	189	-	334	380	-
Stage 2	-	-	-	-	-	-	477	361	-	296	182	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	1	240.8	$ 529
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	50	880	-	-	509	-	-	71
HCM Lane V/C Ratio	0.947	0.03	-	-	0.062	-	-	1.853
HCM Control Delay (s)	240.8	9.2	0.5	-	12.5	0.6	-	$ 529
HCM Lane LOS	F	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	4.1	0.1	-	-	0.2	-	-	11.8

Notes

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

Intersection	
Int Delay, s/veh	13.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	115	1135	30	50	575	140	25	5	30	125	10	105
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	-	150	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	121	1195	32	53	605	147	26	5	32	132	11	111

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	753	0	0	1226	0	0	1866	2311	613	1626	2252	376
Stage 1	-	-	-	-	-	-	1453	1453	-	784	784	-
Stage 2	-	-	-	-	-	-	413	858	-	842	1468	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	853	-	-	564	-	-	45	38	435	~ 68	41	622
Stage 1	-	-	-	-	-	-	137	194	-	352	402	-
Stage 2	-	-	-	-	-	-	587	372	-	325	190	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	853	-	-	564	-	-	28	30	435	~ 50	32	622
Mov Cap-2 Maneuver	-	-	-	-	-	-	88	99	-	~ 130	87	-
Stage 1	-	-	-	-	-	-	118	166	-	302	364	-
Stage 2	-	-	-	-	-	-	425	337	-	250	163	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.8	45.9	112
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	149	853	-	-	564	-	-	125	622
HCM Lane V/C Ratio	0.424	0.142	-	-	0.093	-	-	1.137	0.178
HCM Control Delay (s)	45.9	9.9	-	-	12	-	-	189.8	12
HCM Lane LOS	E	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	1.9	0.5	-	-	0.3	-	-	8.4	0.6

Notes

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

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	90	1110	90	30	705	45	35	5	70	30	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	40
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	1168	95	32	742	47	37	5	74	32	0	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	789	0	0	1263	0	0	1839	2258	632	1605	2282	395
Stage 1	-	-	-	-	-	-	1405	1405	-	829	829	-
Stage 2	-	-	-	-	-	-	434	853	-	776	1453	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	827	-	-	546	-	-	47	41	423	70	39	604
Stage 1	-	-	-	-	-	-	147	204	-	331	383	-
Stage 2	-	-	-	-	-	-	570	374	-	356	194	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	827	-	-	546	-	-	39	34	423	49	32	604
Mov Cap-2 Maneuver	-	-	-	-	-	-	103	112	-	137	103	-
Stage 1	-	-	-	-	-	-	130	181	-	293	361	-
Stage 2	-	-	-	-	-	-	513	352	-	253	172	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.5	45.2	26.4
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	200	827	-	-	546	-	-	137	604
HCM Lane V/C Ratio	0.579	0.115	-	-	0.058	-	-	0.231	0.044
HCM Control Delay (s)	45.2	9.9	-	-	12	-	-	39	11.2
HCM Lane LOS	E	A	-	-	B	-	-	E	B
HCM 95th %tile Q(veh)	3.2	0.4	-	-	0.2	-	-	0.8	0.1

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	30	1155	25	20	715	70	20	0	25	145	5	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	35
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	1216	26	21	753	74	21	0	26	153	5	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	826	0	0	1242	0	0	1713	2160	621	1503	2137	413
Stage 1	-	-	-	-	-	-	1292	1292	-	832	832	-
Stage 2	-	-	-	-	-	-	421	868	-	671	1305	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	800	-	-	556	-	-	58	47	430	~ 84	48	588
Stage 1	-	-	-	-	-	-	172	232	-	330	382	-
Stage 2	-	-	-	-	-	-	581	368	-	412	228	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	800	-	-	556	-	-	49	43	430	~ 74	44	588
Mov Cap-2 Maneuver	-	-	-	-	-	-	128	139	-	186	135	-
Stage 1	-	-	-	-	-	-	165	223	-	317	368	-
Stage 2	-	-	-	-	-	-	507	354	-	371	219	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	27.1	68.2
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	210	800	-	-	556	-	-	184	588
HCM Lane V/C Ratio	0.226	0.039	-	-	0.038	-	-	0.858	0.081
HCM Control Delay (s)	27.1	9.7	-	-	11.7	-	-	85.2	11.7
HCM Lane LOS	D	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0.1	-	-	6.2	0.3

Notes

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

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1100	225	20	715	90	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1158	237	21	753	95	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1395	0	1694	697
Stage 1	-	-	-	-	1276	-
Stage 2	-	-	-	-	418	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	486	-	~ 84	383
Stage 1	-	-	-	-	226	-
Stage 2	-	-	-	-	632	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	486	-	~ 80	383
Mov Cap-2 Maneuver	-	-	-	-	177	-
Stage 1	-	-	-	-	226	-
Stage 2	-	-	-	-	605	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	47.3
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	200	-	-	486	-
HCM Lane V/C Ratio	0.605	-	-	0.043	-
HCM Control Delay (s)	47.3	-	-	12.7	-
HCM Lane LOS	E	-	-	B	-
HCM 95th %tile Q(veh)	3.4	-	-	0.1	-

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	395	730	90	315	420	70
Number	2	12	1	6	3	18
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	416	768	95	332	442	74
Adj No. of Lanes	2	1	1	2	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1262	1095	155	1839	584	521
Arrive On Green	0.36	0.36	0.09	0.52	0.33	0.33
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583
Grp Volume(v), veh/h	416	768	95	332	442	74
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583
Q Serve(g_s), s	4.5	15.4	2.7	2.6	11.8	1.7
Cycle Q Clear(g_c), s	4.5	15.4	2.7	2.6	11.8	1.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1262	1095	155	1839	584	521
V/C Ratio(X)	0.33	0.70	0.61	0.18	0.76	0.14
Avail Cap(c_a), veh/h	1266	1096	205	1943	772	689
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	12.4	4.9	23.3	6.7	15.8	12.5
Incr Delay (d2), s/veh	0.4	2.7	2.9	0.1	5.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	7.3	1.4	1.3	6.5	0.8
LnGrp Delay(d),s/veh	12.8	7.6	26.2	6.8	21.2	12.8
LnGrp LOS	B	A	C	A	C	B
Approach Vol, veh/h	1184			427	516	
Approach Delay, s/veh	9.4			11.1	20.0	
Approach LOS	A			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.6	22.8				31.5		21.4
Change Period (Y+Rc), s	4.1	4.9				4.9		4.6
Max Green Setting (Gmax), s	6.0	18.0				28.1		22.4
Max Q Clear Time (g_c+I1), s	4.7	17.4				4.6		13.8
Green Ext Time (p_c), s	0.0	0.6				16.3		3.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.3
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	350	80	40	340	10	45	10	45	10	10	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	56	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	368	84	42	358	11	47	11	47	11	11	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	368	0	0	453	0	0	700	885	226	658	921	184
Stage 1	-	-	-	-	-	-	432	432	-	447	447	-
Stage 2	-	-	-	-	-	-	268	453	-	211	474	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1187	-	-	1104	-	-	326	282	777	350	269	827
Stage 1	-	-	-	-	-	-	572	581	-	560	572	-
Stage 2	-	-	-	-	-	-	714	568	-	771	556	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1187	-	-	1104	-	-	301	269	777	310	256	827
Mov Cap-2 Maneuver	-	-	-	-	-	-	413	376	-	415	358	-
Stage 1	-	-	-	-	-	-	567	576	-	555	550	-
Stage 2	-	-	-	-	-	-	661	546	-	704	551	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.9	12.9	12.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	406	777	1187	-	-	1104	-	-	499
HCM Lane V/C Ratio	0.143	0.061	0.009	-	-	0.038	-	-	0.074
HCM Control Delay (s)	15.3	9.9	8.1	-	-	8.4	-	-	12.8
HCM Lane LOS	C	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.5	0.2	0	-	-	0.1	-	-	0.2

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	395	10	0	375	0	10	0	5	5	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	400	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	416	11	0	395	0	11	0	5	5	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	395	0	0	426	0	0	618	816	213	603	821	197
Stage 1	-	-	-	-	-	-	421	421	-	395	395	-
Stage 2	-	-	-	-	-	-	197	395	-	208	426	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1160	-	-	1130	-	-	373	310	792	383	308	811
Stage 1	-	-	-	-	-	-	581	587	-	602	603	-
Stage 2	-	-	-	-	-	-	786	603	-	775	584	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1160	-	-	1130	-	-	371	310	792	380	308	811
Mov Cap-2 Maneuver	-	-	-	-	-	-	522	474	-	535	473	-
Stage 1	-	-	-	-	-	-	581	587	-	602	603	-
Stage 2	-	-	-	-	-	-	781	603	-	770	584	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	11.3	10.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	589	1160	-	-	1130	-	-	645
HCM Lane V/C Ratio	0.027	-	-	-	-	-	-	0.016
HCM Control Delay (s)	11.3	0	-	-	0	-	-	10.7
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	5	30	5	5	30	35	460	10	20	780	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	55	-	-	45	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	5	32	5	5	32	37	484	11	21	821	32

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1461	1447	837	1460	1458	489	853	0	0	495	0	0
Stage 1	879	879	-	563	563	-	-	-	-	-	-	-
Stage 2	582	568	-	897	895	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	107	131	367	107	129	579	786	-	-	1069	-	-
Stage 1	342	365	-	511	509	-	-	-	-	-	-	-
Stage 2	499	506	-	334	359	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	93	122	367	90	121	579	786	-	-	1069	-	-
Mov Cap-2 Maneuver	93	122	-	90	121	-	-	-	-	-	-	-
Stage 1	326	358	-	487	485	-	-	-	-	-	-	-
Stage 2	445	482	-	295	352	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	34	20.9	0.7	0.2
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	786	-	-	176	269	1069	-	-
HCM Lane V/C Ratio	0.047	-	-	0.299	0.157	0.02	-	-
HCM Control Delay (s)	9.8	-	-	34	20.9	8.4	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.2	0.5	0.1	-	-

Intersection	
Int Delay, s/veh	7.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	15	85	20	20	35	70	445	5	45	675	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	16	89	21	21	37	74	468	5	47	711	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1476	1450	734	1500	1471	471	758	0	0	474	0	0
Stage 1	829	829	-	618	618	-	-	-	-	-	-	-
Stage 2	647	621	-	882	853	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	104	131	420	100	127	593	853	-	-	1088	-	-
Stage 1	365	385	-	477	481	-	-	-	-	-	-	-
Stage 2	460	479	-	341	376	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	76	114	420	64	111	593	853	-	-	1088	-	-
Mov Cap-2 Maneuver	76	114	-	64	111	-	-	-	-	-	-	-
Stage 1	333	368	-	436	439	-	-	-	-	-	-	-
Stage 2	375	437	-	246	360	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	49.1	62.9	1.3	0.5
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	853	-	-	201	136	1088	-	-
HCM Lane V/C Ratio	0.086	-	-	0.628	0.58	0.044	-	-
HCM Control Delay (s)	9.6	-	-	49.1	62.9	8.5	-	-
HCM Lane LOS	A	-	-	E	F	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	3.6	2.9	0.1	-	-

HCM 2010 Signalized Intersection Summary
13: Minaret Road & Meridian Boulevard

12/14/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	140	290	95	30	175	140	55	190	25	295	440	85
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	147	305	100	32	184	147	58	200	26	311	463	89
Adj No. of Lanes	1	2	0	1	1	1	1	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	693	223	75	371	293	110	444	355	368	583	112
Arrive On Green	0.11	0.26	0.25	0.04	0.20	0.18	0.06	0.24	0.22	0.21	0.38	0.37
Sat Flow, veh/h	1774	2635	848	1774	1863	1583	1774	1863	1583	1774	1519	292
Grp Volume(v), veh/h	147	203	202	32	184	147	58	200	26	311	0	552
Grp Sat Flow(s),veh/h/ln	1774	1770	1713	1774	1863	1583	1774	1863	1583	1774	0	1811
Q Serve(g_s), s	5.2	6.1	6.4	1.1	5.6	5.4	2.0	5.9	0.8	10.8	0.0	17.4
Cycle Q Clear(g_c), s	5.2	6.1	6.4	1.1	5.6	5.4	2.0	5.9	0.8	10.8	0.0	17.4
Prop In Lane	1.00		0.49	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	188	465	450	75	371	293	110	444	355	368	0	695
V/C Ratio(X)	0.78	0.44	0.45	0.43	0.50	0.50	0.53	0.45	0.07	0.85	0.00	0.79
Avail Cap(c_a), veh/h	249	606	587	169	554	449	171	519	419	497	0	838
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	0.00	1.00
Uniform Delay (d), s/veh	28.0	19.7	20.0	30.0	22.9	23.5	29.2	20.9	19.6	24.5	0.0	17.6
Incr Delay (d2), s/veh	9.7	1.4	1.5	2.8	2.2	2.8	2.9	1.5	0.2	8.8	0.0	5.9
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	3.0	3.2	3.2	0.6	3.1	2.6	1.1	3.2	0.4	6.2	0.0	9.7
LnGrp Delay(d),s/veh	37.7	21.1	21.5	32.8	25.1	26.3	32.1	22.4	19.8	33.3	0.0	23.5
LnGrp LOS	D	C	C	C	C	C	C	C	B	C		C
Approach Vol, veh/h		552			363			284			863	
Approach Delay, s/veh		25.6			26.3			24.1			27.0	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	20.9	8.0	28.7	10.8	16.8	17.3	19.3
Change Period (Y+Rc), s	4.1	4.9	4.1	4.9	4.1	4.9	4.1	4.9
Max Green Setting (Gmax), s	6.0	21.1	6.1	28.8	8.9	18.2	17.9	17.0
Max Q Clear Time (g_c+I1), s	3.1	8.4	4.0	19.4	7.2	7.6	12.8	7.9
Green Ext Time (p_c), s	0.0	4.8	0.0	4.4	0.1	4.2	0.4	4.3

Intersection Summary	
HCM 2010 Ctrl Delay	26.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	195	700	120	105	375	75	135	220	50	115	305	60
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	205	737	126	111	395	79	142	232	53	121	321	63
Adj No. of Lanes	1	2	0	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	1037	177	142	528	449	179	434	369	155	408	347
Arrive On Green	0.14	0.34	0.34	0.08	0.28	0.28	0.10	0.23	0.23	0.09	0.22	0.22
Sat Flow, veh/h	1774	3024	517	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	205	431	432	111	395	79	142	232	53	121	321	63
Grp Sat Flow(s),veh/h/ln	1774	1770	1772	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	7.9	14.8	14.8	4.3	13.5	2.6	5.5	7.6	1.9	4.7	11.4	2.3
Cycle Q Clear(g_c), s	7.9	14.8	14.8	4.3	13.5	2.6	5.5	7.6	1.9	4.7	11.4	2.3
Prop In Lane	1.00		0.29	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	247	607	607	142	528	449	179	434	369	155	408	347
V/C Ratio(X)	0.83	0.71	0.71	0.78	0.75	0.18	0.79	0.54	0.14	0.78	0.79	0.18
Avail Cap(c_a), veh/h	276	686	686	175	615	523	226	498	423	236	509	432
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	29.3	20.0	20.0	31.6	22.8	18.9	30.7	23.5	21.3	31.3	25.8	22.2
Incr Delay (d2), s/veh	16.5	3.3	3.3	15.4	4.8	0.2	12.9	1.4	0.2	7.1	7.1	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	5.0	7.7	7.8	2.7	7.6	1.2	3.3	4.1	0.8	2.6	6.6	1.0
LnGrp Delay(d),s/veh	45.8	23.3	23.3	47.0	27.6	19.1	43.6	24.9	21.5	38.4	32.9	22.5
LnGrp LOS	D	C	C	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1068			585			427			505	
Approach Delay, s/veh		27.6			30.1			30.7			32.9	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	28.9	11.1	20.2	13.8	24.7	10.2	21.2
Change Period (Y+Rc), s	4.1	4.9	4.1	4.9	4.1	4.9	4.1	4.9
Max Green Setting (Gmax), s	6.9	27.1	8.9	19.1	10.9	23.1	9.3	18.7
Max Q Clear Time (g_c+I1), s	6.3	16.8	7.5	13.4	9.9	15.5	6.7	9.6
Green Ext Time (p_c), s	0.0	5.4	0.1	2.0	0.1	4.3	0.1	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	29.7
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	13.1
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	160	460	15	0	10	300	30	0	30	5	5
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	168	484	16	0	11	316	32	0	32	5	5
Number of Lanes	0	0	2	0	0	0	2	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	15.1	10.8	10
HCM LOS	C	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	75%	41%	0%	6%	0%	15%
Vol Thru, %	12%	59%	94%	94%	83%	5%
Vol Right, %	12%	0%	6%	0%	17%	80%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	390	245	160	180	100
LT Vol	30	160	0	10	0	15
Through Vol	5	230	230	150	150	5
RT Vol	5	0	15	0	30	80
Lane Flow Rate	42	411	258	168	189	105
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.076	0.63	0.378	0.272	0.298	0.169
Departure Headway (Hd)	6.465	5.644	5.394	5.806	5.657	5.77
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	556	645	671	621	639	623
Service Time	4.486	3.344	3.094	3.52	3.371	3.787
HCM Lane V/C Ratio	0.076	0.637	0.385	0.271	0.296	0.169
HCM Control Delay	10	17.5	11.3	10.7	10.8	10
HCM Lane LOS	A	C	B	B	B	A
HCM 95th-tile Q	0.2	4.4	1.8	1.1	1.2	0.6

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	JHB
Agency/Co.	LSC
Date Performed	12/11/2015
Analysis Time Period	Winter Sat - Scenario 4

Site Information

Intersection	SR 203 EB / Meridian Blvd
Jurisdiction	
Analysis Year	2030

Project Description: Mammoth Mobility Element EIR Traffic

East/West Street: SR 203 EB | North/South Street: Meridian Blvd

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	5	305	90			
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.90	0.90	0.90
Hourly Flow Rate, HFR (veh/h)	5	321	94	0	0	0
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	2	1	0	0	0
Configuration	L	T	R			
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)		125		1	150	
Peak-Hour Factor, PHF	0.90	0.95	0.90	0.95	0.95	0.90
Hourly Flow Rate, HFR (veh/h)	0	131	0	1	157	0
Percent Heavy Vehicles	2	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		T		LT		

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L			T		LT		
v (veh/h)	5			131		158		
C (m) (veh/h)	1636			590		522		
v/c	0.00			0.22		0.30		
95% queue length	0.01			0.84		1.27		
Control Delay (s/veh)	7.2			12.8		14.9		
LOS	A			B		B		
Approach Delay (s/veh)	--	--	12.8			14.9		
Approach LOS	--	--	B			B		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	JHB
Agency/Co.	LSC
Date Performed	12/11/2015
Analysis Time Period	Winter Sat - Scenario 4

Site Information

Intersection	SR 203 WB / Meridian Blvd
Jurisdiction	
Analysis Year	2030

Project Description: Mammoth Mobility Element EIR Traffic

East/West Street: SR 203 WB | North/South Street: Meridian Blvd

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)				150	290	
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.95	0.95	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	157	305	0
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	0	0	1	2	0
Configuration				L	T	
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	130					
Peak-Hour Factor, PHF	0.95	0.90	0.90	0.90	0.90	1.00
Hourly Flow Rate, HFR (veh/h)	136	0	0	0	0	0
Percent Heavy Vehicles	2	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	0	0	0	0	0
Configuration	L					

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L					
v (veh/h)		157	136					
C (m) (veh/h)		1623	501					
v/c		0.10	0.27					
95% queue length		0.32	1.09					
Control Delay (s/veh)		7.5	14.8					
LOS		A	B					
Approach Delay (s/veh)	--	--	14.8					
Approach LOS	--	--	B					

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Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	35	35	10	5	20	60	10	295	5	105	350	80
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	55	-	-	55	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	37	11	5	21	63	11	311	5	111	368	84

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1008	969	411	989	1008	313	453	0	0	316	0	0
Stage 1	632	632	-	334	334	-	-	-	-	-	-	-
Stage 2	376	337	-	655	674	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	219	254	641	226	240	727	1108	-	-	1244	-	-
Stage 1	468	474	-	680	643	-	-	-	-	-	-	-
Stage 2	645	641	-	455	454	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	171	229	641	181	216	727	1108	-	-	1244	-	-
Mov Cap-2 Maneuver	171	229	-	181	216	-	-	-	-	-	-	-
Stage 1	463	432	-	673	637	-	-	-	-	-	-	-
Stage 2	564	635	-	373	413	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	32.3	15.9	0.3	1.6
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1108	-	-	214	419	1244	-	-
HCM Lane V/C Ratio	0.01	-	-	0.394	0.214	0.089	-	-
HCM Control Delay (s)	8.3	-	-	32.3	15.9	8.2	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.8	0.8	0.3	-	-

Intersection	
Int Delay, s/veh	43

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	105	165	45	135	190	90	20	65	90	100	155	195
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	115	-	-	100	-	-	-	-	50	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	111	174	47	142	200	95	21	68	95	105	163	205

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	295	0	0	221	0	0	1134	997	197	985	974	247
Stage 1	-	-	-	-	-	-	418	418	-	532	532	-
Stage 2	-	-	-	-	-	-	716	579	-	453	442	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1266	-	-	1348	-	-	180	244	844	227	252	792
Stage 1	-	-	-	-	-	-	612	591	-	531	526	-
Stage 2	-	-	-	-	-	-	421	501	-	586	576	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1266	-	-	1348	-	-	41	199	844	128	206	792
Mov Cap-2 Maneuver	-	-	-	-	-	-	41	199	-	128	206	-
Stage 1	-	-	-	-	-	-	558	539	-	484	471	-
Stage 2	-	-	-	-	-	-	182	448	-	414	525	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.7	2.6	67.3	99
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	104	844	1266	-	-	1348	-	-	128	350
HCM Lane V/C Ratio	0.86	0.112	0.087	-	-	0.105	-	-	0.822	1.053
HCM Control Delay (s)	128.1	9.8	8.1	-	-	8	-	-	102.7	97.9
HCM Lane LOS	F	A	A	-	-	A	-	-	F	F
HCM 95th %tile Q(veh)	5	0.4	0.3	-	-	0.4	-	-	5	13

Scenario Five

Intersection	
Int Delay, s/veh	11.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	35	105	20	20	15	80	200	35	90	760	115
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	37	111	21	21	16	84	211	37	95	800	121

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1466	1466	861	1465	1508	229	921	0	0	247	0	0
Stage 1	1050	1050	-	397	397	-	-	-	-	-	-	-
Stage 2	416	416	-	1068	1111	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	106	128	355	106	121	810	741	-	-	1319	-	-
Stage 1	275	304	-	629	603	-	-	-	-	-	-	-
Stage 2	614	592	-	268	285	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	68	94	355	41	89	810	741	-	-	1319	-	-
Mov Cap-2 Maneuver	68	94	-	41	89	-	-	-	-	-	-	-
Stage 1	239	258	-	546	523	-	-	-	-	-	-	-
Stage 2	502	514	-	134	242	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	52.6	140.6	2.7	0.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	741	-	-	83	355	75	1319	-	-
HCM Lane V/C Ratio	0.114	-	-	0.698	0.311	0.772	0.072	-	-
HCM Control Delay (s)	10.5	0	-	115.4	19.7	140.6	7.9	0	-
HCM Lane LOS	B	A	-	F	C	F	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	3.3	1.3	3.7	0.2	-	-

HCM 2010 Signalized Intersection Summary
2: Minaret Road & Lake Mary Road/Main Street

12/14/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	120	520	190	105	400	165	470	325	130	635	75	145
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	126	547	200	111	421	174	495	342	137	724	0	153
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	125	768	343	125	768	781	452	474	403	968	0	421
Arrive On Green	0.07	0.22	0.22	0.07	0.22	0.22	0.25	0.25	0.25	0.27	0.00	0.27
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	3548	0	1583
Grp Volume(v), veh/h	126	547	200	111	421	174	495	342	137	724	0	153
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	0	1583
Q Serve(g_s), s	6.1	12.4	9.8	5.4	9.1	5.4	22.0	14.5	6.1	16.1	0.0	6.8
Cycle Q Clear(g_c), s	6.1	12.4	9.8	5.4	9.1	5.4	22.0	14.5	6.1	16.1	0.0	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	125	768	343	125	768	781	452	474	403	968	0	421
V/C Ratio(X)	1.01	0.71	0.58	0.89	0.55	0.22	1.10	0.72	0.34	0.75	0.00	0.36
Avail Cap(c_a), veh/h	125	815	365	125	815	802	452	474	403	1067	0	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	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.2	31.3	30.3	39.8	30.1	12.5	32.2	29.4	26.3	28.7	0.0	25.8
Incr Delay (d2), s/veh	82.1	3.4	3.3	47.2	1.2	0.3	70.9	6.8	1.2	4.9	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	6.4	4.6	4.3	4.6	3.7	19.6	8.3	2.8	8.5	0.0	3.2
LnGrp Delay(d),s/veh	122.3	34.8	33.6	87.0	31.2	12.7	103.1	36.2	27.5	33.6	0.0	27.9
LnGrp LOS	F	C	C	F	C	B	F	D	C	C		C
Approach Vol, veh/h		873			706			974			877	
Approach Delay, s/veh		47.1			35.4			69.0			32.6	
Approach LOS		D			D			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.1	22.7		27.6	10.1	22.7		26.0
Change Period (Y+Rc), s	4.1	4.9		4.6	4.1	4.9		4.9
Max Green Setting (Gmax), s	6.0	19.0		25.4	6.0	19.0		21.1
Max Q Clear Time (g_c+I1), s	7.4	14.4		18.1	8.1	11.1		24.0
Green Ext Time (p_c), s	0.0	3.5		4.9	0.0	5.5		0.0

Intersection Summary			
HCM 2010 Ctrl Delay		47.2	
HCM 2010 LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	1205	55	25	635	50	5	10	15	30	10	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	1268	58	26	668	53	5	11	16	32	11	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	721	0	0	1326	0	0	1742	2124	663	1439	2126	361
Stage 1	-	-	-	-	-	-	1350	1350	-	747	747	-
Stage 2	-	-	-	-	-	-	392	774	-	692	1379	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	877	-	-	517	-	-	55	49	404	94	49	636
Stage 1	-	-	-	-	-	-	159	217	-	371	418	-
Stage 2	-	-	-	-	-	-	604	406	-	400	210	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	877	-	-	517	-	-	36	40	404	62	40	636
Mov Cap-2 Maneuver	-	-	-	-	-	-	36	40	-	62	40	-
Stage 1	-	-	-	-	-	-	141	192	-	328	382	-
Stage 2	-	-	-	-	-	-	511	371	-	322	186	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.9	93.2	132.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	70	877	-	-	517	-	-	90
HCM Lane V/C Ratio	0.451	0.03	-	-	0.051	-	-	0.819
HCM Control Delay (s)	93.2	9.2	0.5	-	12.3	0.5	-	132.3
HCM Lane LOS	F	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	1.8	0.1	-	-	0.2	-	-	4.3

Intersection	
Int Delay, s/veh	29.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	100	995	80	50	525	155	40	5	55	170	30	155
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	-	150	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	105	1047	84	53	553	163	42	5	58	179	32	163

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	716	0	0	1132	0	0	1697	2121	566	1476	2081	358
Stage 1	-	-	-	-	-	-	1300	1300	-	739	739	-
Stage 2	-	-	-	-	-	-	397	821	-	737	1342	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	880	-	-	613	-	-	60	50	467	~ 88	53	638
Stage 1	-	-	-	-	-	-	170	230	-	375	422	-
Stage 2	-	-	-	-	-	-	600	387	-	376	219	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	880	-	-	613	-	-	~ 30	40	467	~ 63	43	638
Mov Cap-2 Maneuver	-	-	-	-	-	-	100	120	-	~ 151	108	-
Stage 1	-	-	-	-	-	-	150	203	-	330	386	-
Stage 2	-	-	-	-	-	-	375	354	-	283	193	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.8	50.4	179.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	179	880	-	-	613	-	-	142	638
HCM Lane V/C Ratio	0.588	0.12	-	-	0.086	-	-	1.483	0.256
HCM Control Delay (s)	50.4	9.6	-	-	11.4	-	-	$ 308.4	12.6
HCM Lane LOS	F	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	3.2	0.4	-	-	0.3	-	-	14.1	1

Notes

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

Intersection	
Int Delay, s/veh	21

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	65	965	190	85	595	75	85	15	140	50	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	40
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	68	1016	200	89	626	79	89	16	147	53	0	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	705	0	0	1216	0	0	1745	2137	608	1498	2198	353
Stage 1	-	-	-	-	-	-	1253	1253	-	845	845	-
Stage 2	-	-	-	-	-	-	492	884	-	653	1353	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	889	-	-	569	-	-	~ 55	48	439	85	44	643
Stage 1	-	-	-	-	-	-	182	242	-	324	377	-
Stage 2	-	-	-	-	-	-	527	362	-	423	216	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	889	-	-	569	-	-	~ 42	37	439	~ 42	34	643
Mov Cap-2 Maneuver	-	-	-	-	-	-	119	122	-	109	86	-
Stage 1	-	-	-	-	-	-	168	223	-	299	318	-
Stage 2	-	-	-	-	-	-	408	305	-	241	199	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.4	179.2	38.4
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	208	889	-	-	569	-	-	109	643
HCM Lane V/C Ratio	1.215	0.077	-	-	0.157	-	-	0.483	0.082
HCM Control Delay (s)	179.2	9.4	-	-	12.5	-	-	65.6	11.1
HCM Lane LOS	F	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	12.9	0.2	-	-	0.6	-	-	2.1	0.3

Notes

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

Intersection	
Int Delay, s/veh	10.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	1125	15	20	695	95	15	0	20	185	5	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	35
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	1184	16	21	732	100	16	0	21	195	5	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	832	0	0	1200	0	0	1635	2098	600	1448	2056	416
Stage 1	-	-	-	-	-	-	1224	1224	-	824	824	-
Stage 2	-	-	-	-	-	-	411	874	-	624	1232	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	796	-	-	577	-	-	67	51	444	~ 92	55	585
Stage 1	-	-	-	-	-	-	190	250	-	333	385	-
Stage 2	-	-	-	-	-	-	589	365	-	440	248	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	796	-	-	577	-	-	57	48	444	~ 84	52	585
Mov Cap-2 Maneuver	-	-	-	-	-	-	143	151	-	200	149	-
Stage 1	-	-	-	-	-	-	186	245	-	326	371	-
Stage 2	-	-	-	-	-	-	514	352	-	411	243	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.3	23.3	96.4
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	233	796	-	-	577	-	-	198	585
HCM Lane V/C Ratio	0.158	0.02	-	-	0.036	-	-	1.01	0.081
HCM Control Delay (s)	23.3	9.6	-	-	11.5	-	-	116.4	11.7
HCM Lane LOS	C	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0.1	-	-	8.8	0.3

Notes

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

Intersection	
Int Delay, s/veh	11.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1050	280	30	655	155	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1105	295	32	689	163	53

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1400	0	1661	700
Stage 1	-	-	-	-	1253	-
Stage 2	-	-	-	-	408	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	484	-	~ 88	382
Stage 1	-	-	-	-	232	-
Stage 2	-	-	-	-	640	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	484	-	~ 82	382
Mov Cap-2 Maneuver	-	-	-	-	181	-
Stage 1	-	-	-	-	232	-
Stage 2	-	-	-	-	598	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	121
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	208	-	-	484	-
HCM Lane V/C Ratio	1.037	-	-	0.065	-
HCM Control Delay (s)	121	-	-	13	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	9.5	-	-	0.2	-

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	355	745	105	305	380	80
Number	2	12	1	6	3	18
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	374	784	111	321	400	84
Adj No. of Lanes	2	1	1	2	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1273	1071	169	1886	551	492
Arrive On Green	0.36	0.36	0.10	0.53	0.31	0.31
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583
Grp Volume(v), veh/h	374	784	111	321	400	84
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583
Q Serve(g_s), s	3.9	16.2	3.1	2.4	10.3	2.0
Cycle Q Clear(g_c), s	3.9	16.2	3.1	2.4	10.3	2.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1273	1071	169	1886	551	492
V/C Ratio(X)	0.29	0.73	0.66	0.17	0.73	0.17
Avail Cap(c_a), veh/h	1273	1071	243	2034	784	699
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	11.7	5.3	22.4	6.1	15.7	12.8
Incr Delay (d2), s/veh	0.3	3.3	3.2	0.1	4.3	0.4
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	7.9	1.7	1.2	5.7	0.9
LnGrp Delay(d),s/veh	12.0	8.6	25.6	6.2	20.0	13.2
LnGrp LOS	B	A	C	A	C	B
Approach Vol, veh/h	1158			432	484	
Approach Delay, s/veh	9.7			11.2	18.8	
Approach LOS	A			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.9	22.4				31.3		19.9
Change Period (Y+Rc), s	4.1	4.9				4.9		4.6
Max Green Setting (Gmax), s	6.9	17.5				28.5		22.0
Max Q Clear Time (g_c+I1), s	5.1	18.2				4.4		12.3
Green Ext Time (p_c), s	0.0	0.0				16.4		3.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.2
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	325	85	45	350	10	45	10	45	10	10	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	56	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	342	89	47	368	11	47	11	47	11	11	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	379	0	0	432	0	0	692	882	216	665	921	189
Stage 1	-	-	-	-	-	-	408	408	-	468	468	-
Stage 2	-	-	-	-	-	-	284	474	-	197	453	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1176	-	-	1124	-	-	330	284	789	345	269	821
Stage 1	-	-	-	-	-	-	591	595	-	545	560	-
Stage 2	-	-	-	-	-	-	699	556	-	786	568	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1176	-	-	1124	-	-	304	270	789	305	255	821
Mov Cap-2 Maneuver	-	-	-	-	-	-	416	375	-	409	356	-
Stage 1	-	-	-	-	-	-	585	589	-	540	537	-
Stage 2	-	-	-	-	-	-	644	533	-	719	563	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.9	12.9	12.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	408	789	1176	-	-	1124	-	-	494
HCM Lane V/C Ratio	0.142	0.06	0.009	-	-	0.042	-	-	0.075
HCM Control Delay (s)	15.3	9.9	8.1	-	-	8.3	-	-	12.9
HCM Lane LOS	C	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.5	0.2	0	-	-	0.1	-	-	0.2

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	375	5	0	400	5	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	400	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	395	5	0	421	5	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	400	0	608	200
Stage 1	-	-	-	-	397	-
Stage 2	-	-	-	-	211	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1155	-	427	808
Stage 1	-	-	-	-	648	-
Stage 2	-	-	-	-	804	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1155	-	427	808
Mov Cap-2 Maneuver	-	-	-	-	578	-
Stage 1	-	-	-	-	648	-
Stage 2	-	-	-	-	804	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	578	-	-	1155	-
HCM Lane V/C Ratio	0.009	-	-	-	-
HCM Control Delay (s)	11.3	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	10.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	30	10	55	5	10	35	65	520	15	20	930	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	55	-	-	45	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	11	58	5	11	37	68	547	16	21	979	58

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1766	1750	1008	1776	1771	555	1037	0	0	563	0	0
Stage 1	1050	1050	-	692	692	-	-	-	-	-	-	-
Stage 2	716	700	-	1084	1079	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	65	86	292	64	83	531	670	-	-	1008	-	-
Stage 1	275	304	-	434	445	-	-	-	-	-	-	-
Stage 2	421	441	-	263	295	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	49	76	292	42	73	531	670	-	-	1008	-	-
Mov Cap-2 Maneuver	49	76	-	42	73	-	-	-	-	-	-	-
Stage 1	247	298	-	390	400	-	-	-	-	-	-	-
Stage 2	343	396	-	199	289	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	160.7	39.7	1.2	0.2
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	670	-	-	102	155	1008	-	-
HCM Lane V/C Ratio	0.102	-	-	0.98	0.34	0.021	-	-
HCM Control Delay (s)	11	-	-	160.7	39.7	8.6	-	-
HCM Lane LOS	B	-	-	F	E	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	6	1.4	0.1	-	-

Intersection	
Int Delay, s/veh	27.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	15	95	20	20	35	80	575	5	50	870	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	16	100	21	21	37	84	605	5	53	916	53

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1852	1826	942	1881	1850	608	968	0	0	611	0	0
Stage 1	1047	1047	-	776	776	-	-	-	-	-	-	-
Stage 2	805	779	-	1105	1074	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	57	77	319	54	74	496	712	-	-	968	-	-
Stage 1	276	305	-	390	407	-	-	-	-	-	-	-
Stage 2	376	406	-	256	296	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	34	64	319	26	62	496	712	-	-	968	-	-
Mov Cap-2 Maneuver	34	64	-	26	62	-	-	-	-	-	-	-
Stage 1	243	288	-	344	359	-	-	-	-	-	-	-
Stage 2	289	358	-	157	280	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	211	289.2	1.3	0.5
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	712	-	-	116	65	968	-	-
HCM Lane V/C Ratio	0.118	-	-	1.18	1.215	0.054	-	-
HCM Control Delay (s)	10.7	-	-	211	289.2	8.9	-	-
HCM Lane LOS	B	-	-	F	F	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	8.6	6.4	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	150	360	100	35	220	170	55	200	25	365	460	95
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	158	379	105	37	232	179	58	211	26	384	484	100
Adj No. of Lanes	1	2	0	1	1	1	1	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	198	769	211	80	398	318	105	380	303	431	581	120
Arrive On Green	0.11	0.28	0.27	0.05	0.21	0.20	0.06	0.20	0.19	0.24	0.39	0.37
Sat Flow, veh/h	1774	2747	752	1774	1863	1583	1774	1863	1583	1774	1499	310
Grp Volume(v), veh/h	158	243	241	37	232	179	58	211	26	384	0	584
Grp Sat Flow(s),veh/h/ln	1774	1770	1730	1774	1863	1583	1774	1863	1583	1774	0	1808
Q Serve(g_s), s	6.1	8.0	8.2	1.4	7.9	7.2	2.2	7.1	0.9	14.7	0.0	20.5
Cycle Q Clear(g_c), s	6.1	8.0	8.2	1.4	7.9	7.2	2.2	7.1	0.9	14.7	0.0	20.5
Prop In Lane	1.00		0.43	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	198	495	484	80	398	318	105	380	303	431	0	701
V/C Ratio(X)	0.80	0.49	0.50	0.46	0.58	0.56	0.55	0.56	0.09	0.89	0.00	0.83
Avail Cap(c_a), veh/h	205	529	517	154	504	408	157	475	383	480	0	790
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	0.00	1.00
Uniform Delay (d), s/veh	30.4	21.1	21.3	32.7	24.8	25.3	32.1	25.1	23.4	25.7	0.0	19.5
Incr Delay (d2), s/veh	18.5	1.6	1.7	3.0	2.9	3.3	3.3	2.7	0.3	16.8	0.0	8.3
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	4.0	4.1	4.1	0.8	4.4	3.4	1.2	4.0	0.4	9.2	0.0	11.8
LnGrp Delay(d),s/veh	49.0	22.7	23.0	35.7	27.7	28.6	35.5	27.8	23.6	42.5	0.0	27.8
LnGrp LOS	D	C	C	D	C	C	D	C	C	D		C
Approach Vol, veh/h		642			448			295			968	
Approach Delay, s/veh		29.3			28.7			28.9			33.6	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	23.7	8.2	31.2	11.8	19.0	21.1	18.3
Change Period (Y+Rc), s	4.1	4.9	4.1	4.9	4.1	4.9	4.1	4.9
Max Green Setting (Gmax), s	6.0	20.1	6.1	29.8	8.0	18.1	18.9	17.0
Max Q Clear Time (g_c+I1), s	3.4	10.2	4.2	22.5	8.1	9.9	16.7	9.1
Green Ext Time (p_c), s	0.0	4.9	0.0	3.8	0.0	4.3	0.3	4.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	235	775	155	120	415	95	175	350	60	150	440	80
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	247	816	163	126	437	100	184	368	63	158	463	84
Adj No. of Lanes	1	2	0	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	275	970	194	152	486	413	216	513	436	192	488	415
Arrive On Green	0.16	0.33	0.33	0.09	0.26	0.26	0.12	0.28	0.28	0.11	0.26	0.26
Sat Flow, veh/h	1774	2941	588	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	247	491	488	126	437	100	184	368	63	158	463	84
Grp Sat Flow(s),veh/h/ln	1774	1770	1759	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	12.3	23.1	23.1	6.3	20.3	4.5	9.1	16.0	2.7	7.8	21.9	3.7
Cycle Q Clear(g_c), s	12.3	23.1	23.1	6.3	20.3	4.5	9.1	16.0	2.7	7.8	21.9	3.7
Prop In Lane	1.00		0.33	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	275	584	580	152	486	413	216	513	436	192	488	415
V/C Ratio(X)	0.90	0.84	0.84	0.83	0.90	0.24	0.85	0.72	0.14	0.82	0.95	0.20
Avail Cap(c_a), veh/h	275	590	587	152	492	418	216	513	436	228	488	415
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	37.2	27.9	27.9	40.3	32.0	26.2	38.6	29.3	24.5	39.2	32.5	25.8
Incr Delay (d2), s/veh	29.2	10.8	10.8	29.2	19.5	0.4	26.2	5.1	0.2	17.5	28.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	12.9	12.9	4.3	13.1	2.0	6.0	8.9	1.2	4.8	15.0	1.7
LnGrp Delay(d),s/veh	66.4	38.6	38.7	69.5	51.6	26.6	64.8	34.4	24.7	56.6	60.8	26.1
LnGrp LOS	E	D	D	E	D	C	E	C	C	E	E	C
Approach Vol, veh/h		1226			663			615			705	
Approach Delay, s/veh		44.3			51.2			42.5			55.7	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	34.5	15.0	28.4	18.0	28.3	13.8	29.6
Change Period (Y+Rc), s	4.1	4.9	4.1	4.9	4.1	4.9	4.1	4.9
Max Green Setting (Gmax), s	7.7	29.9	10.9	23.5	13.9	23.7	11.5	22.9
Max Q Clear Time (g_c+I1), s	8.3	25.1	11.1	23.9	14.3	22.3	9.8	18.0
Green Ext Time (p_c), s	0.0	3.3	0.0	0.0	0.0	1.1	0.1	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	47.9
HCM 2010 LOS	D

Intersection	
Intersection Delay, s/veh	19.5
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	195	595	20	0	10	390	35	0	30	5	5
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	205	626	21	0	11	411	37	0	32	5	5
Number of Lanes	0	0	2	0	0	0	2	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	24.8	12.6	10.6
HCM LOS	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	75%	40%	0%	5%	0%	14%
Vol Thru, %	12%	60%	94%	95%	85%	5%
Vol Right, %	12%	0%	6%	0%	15%	81%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	493	318	205	230	105
LT Vol	30	195	0	10	0	15
Through Vol	5	298	298	195	195	5
RT Vol	5	0	20	0	35	85
Lane Flow Rate	42	518	334	216	242	111
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.081	0.839	0.518	0.367	0.403	0.19
Departure Headway (Hd)	6.959	5.823	5.579	6.125	5.992	6.196
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	514	622	645	587	600	579
Service Time	5.01	3.555	3.311	3.869	3.737	4.238
HCM Lane V/C Ratio	0.082	0.833	0.518	0.368	0.403	0.192
HCM Control Delay	10.6	31.7	14.2	12.4	12.8	10.7
HCM Lane LOS	B	D	B	B	B	B
HCM 95th-tile Q	0.3	9	3	1.7	1.9	0.7

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	JHB
Agency/Co.	LSC
Date Performed	11/10/2015
Analysis Time Period	Winter Sat - Scenario 5

Site Information

Intersection	SR 203 EB / Meridian Blvd
Jurisdiction	
Analysis Year	2030

Project Description: Mammoth Mobility Element EIR Traffic

East/West Street: SR 203 EB | North/South Street: Meridian Blvd

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	5	285	85			
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.90	0.90	0.90
Hourly Flow Rate, HFR (veh/h)	5	300	89	0	0	0
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	2	1	0	0	0
Configuration	L	T	R			
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)		95		1	125	
Peak-Hour Factor, PHF	0.90	0.95	0.90	0.95	0.95	0.90
Hourly Flow Rate, HFR (veh/h)	0	100	0	1	131	0
Percent Heavy Vehicles	2	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		T		LT		

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L			T		LT		
v (veh/h)	5			100		132		
C (m) (veh/h)	1636			606		541		
v/c	0.00			0.17		0.24		
95% queue length	0.01			0.59		0.95		
Control Delay (s/veh)	7.2			12.1		13.8		
LOS	A			B		B		
Approach Delay (s/veh)	--	--	12.1			13.8		
Approach LOS	--	--	B			B		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	JHB
Agency/Co.	LSC
Date Performed	11/10/2015
Analysis Time Period	Winter Sat - Scenario 5

Site Information

Intersection	SR 203 WB / Meridian Blvd
Jurisdiction	
Analysis Year	2030

Project Description: Mammoth Mobility Element EIR Traffic

East/West Street: SR 203 WB | North/South Street: Meridian Blvd

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)				125	300	
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	0	0	0	131	315	0
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	0	0	1	2	0
Configuration				L	T	
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	100					
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Hourly Flow Rate, HFR (veh/h)	105	0	0	0	0	0
Percent Heavy Vehicles	2	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	0	0	0	0	0
Configuration	L					

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L					
v (veh/h)		131	105					
C (m) (veh/h)		1623	543					
v/c		0.08	0.19					
95% queue length		0.26	0.71					
Control Delay (s/veh)		7.4	13.2					
LOS		A	B					
Approach Delay (s/veh)	--	--	13.2					
Approach LOS	--	--	B					

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Intersection	
Int Delay, s/veh	8.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	45	30	20	10	20	60	20	410	10	105	490	115
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	55	-	-	55	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	32	21	11	21	63	21	432	11	111	516	121

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1318	1281	576	1303	1337	437	637	0	0	442	0	0
Stage 1	797	797	-	479	479	-	-	-	-	-	-	-
Stage 2	521	484	-	824	858	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	134	166	517	138	153	620	947	-	-	1118	-	-
Stage 1	380	399	-	568	555	-	-	-	-	-	-	-
Stage 2	539	552	-	367	374	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	97	146	517	101	135	620	947	-	-	1118	-	-
Mov Cap-2 Maneuver	97	146	-	101	135	-	-	-	-	-	-	-
Stage 1	372	359	-	555	543	-	-	-	-	-	-	-
Stage 2	455	540	-	289	337	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	85.6	26.3	0.4	1.3
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	947	-	-	134	262	1118	-	-
HCM Lane V/C Ratio	0.022	-	-	0.746	0.362	0.099	-	-
HCM Control Delay (s)	8.9	-	-	85.6	26.3	8.6	-	-
HCM Lane LOS	A	-	-	F	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	4.4	1.6	0.3	-	-

Intersection	
Int Delay, s/veh	167.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	115	215	60	175	245	110	30	85	115	120	205	205
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	115	-	-	100	-	-	-	-	50	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	121	226	63	184	258	116	32	89	121	126	216	216

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	374	0	0	289	0	0	1400	1242	258	1229	1216	316
Stage 1	-	-	-	-	-	-	500	500	-	684	684	-
Stage 2	-	-	-	-	-	-	900	742	-	545	532	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1184	-	-	1273	-	-	118	175	781	155	~ 181	724
Stage 1	-	-	-	-	-	-	553	543	-	439	449	-
Stage 2	-	-	-	-	-	-	333	422	-	523	526	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1184	-	-	1273	-	-	-	134	781	~ 51	~ 139	724
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	134	-	~ 51	~ 139	-
Stage 1	-	-	-	-	-	-	496	488	-	394	384	-
Stage 2	-	-	-	-	-	-	88	361	-	324	472	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.5	2.7		$ 527.3
HCM LOS			-	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	781	1184	-	-	1273	-	-	51	233
HCM Lane V/C Ratio	-	0.155	0.102	-	-	0.145	-	-	2.477	1.852
HCM Control Delay (s)	-	10.5	8.4	-	-	8.3	-	-	-$ 842.7	$ 435
HCM Lane LOS	-	B	A	-	-	A	-	-	F	F
HCM 95th %tile Q(veh)	-	0.5	0.3	-	-	0.5	-	-	13	30.2

Notes

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

Scenario Six

Intersection	
Int Delay, s/veh	15.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	35	105	25	20	15	80	195	40	100	745	115
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	37	111	26	21	16	84	205	42	105	784	121

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1468	1471	845	1469	1511	226	905	0	0	247	0	0
Stage 1	1055	1055	-	395	395	-	-	-	-	-	-	-
Stage 2	413	416	-	1074	1116	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	106	127	363	106	120	813	752	-	-	1319	-	-
Stage 1	273	302	-	630	605	-	-	-	-	-	-	-
Stage 2	616	592	-	266	283	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	67	92	363	41	87	813	752	-	-	1319	-	-
Mov Cap-2 Maneuver	67	92	-	41	87	-	-	-	-	-	-	-
Stage 1	238	252	-	548	526	-	-	-	-	-	-	-
Stage 2	504	515	-	132	236	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	62.3	180.6	2.6	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	752	-	-	80	363	70	1319	-	-
HCM Lane V/C Ratio	0.112	-	-	0.789	0.304	0.902	0.08	-	-
HCM Control Delay (s)	10.4	0	-	137.7	19.2	180.6	8	0	-
HCM Lane LOS	B	A	-	F	C	F	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	3.9	1.3	4.5	0.3	-	-

HCM 2010 Signalized Intersection Summary
2: Minaret Road & Lake Mary Road/Main Street

12/14/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	115	575	160	90	410	175	390	320	120	700	65	140
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	121	605	168	95	432	184	411	337	126	786	0	147
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	2	0	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	706	316	119	664	834	430	451	384	1193	0	523
Arrive On Green	0.08	0.20	0.20	0.07	0.19	0.19	0.24	0.24	0.24	0.34	0.00	0.33
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1774	1863	1583	3548	0	1583
Grp Volume(v), veh/h	121	605	168	95	432	184	411	337	126	786	0	147
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1863	1583	1774	0	1583
Q Serve(g_s), s	7.0	17.0	9.8	5.4	11.7	6.4	23.6	17.3	6.8	19.5	0.0	7.1
Cycle Q Clear(g_c), s	7.0	17.0	9.8	5.4	11.7	6.4	23.6	17.3	6.8	19.5	0.0	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	139	706	316	119	664	834	430	451	384	1193	0	523
V/C Ratio(X)	0.87	0.86	0.53	0.80	0.65	0.22	0.96	0.75	0.33	0.66	0.00	0.28
Avail Cap(c_a), veh/h	139	710	318	119	669	836	430	451	384	1596	0	703
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	0.00	1.00
Uniform Delay (d), s/veh	47.0	39.9	37.0	47.5	38.8	13.1	38.5	36.2	32.2	29.2	0.0	25.5
Incr Delay (d2), s/veh	39.8	10.8	2.8	30.3	2.8	0.2	32.8	8.2	1.2	2.5	0.0	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	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	9.4	4.5	3.7	6.0	4.9	15.4	9.9	3.1	9.9	0.0	3.2
LnGrp Delay(d),s/veh	86.9	50.7	39.8	77.8	41.6	13.3	71.4	44.4	33.3	31.7	0.0	26.7
LnGrp LOS	F	D	D	E	D	B	E	D	C	C		C
Approach Vol, veh/h		894			711			874			933	
Approach Delay, s/veh		53.5			39.1			55.5			30.9	
Approach LOS		D			D			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.9	24.6		38.7	12.1	23.4		29.0
Change Period (Y+Rc), s	4.1	4.9		4.6	4.1	4.9		4.9
Max Green Setting (Gmax), s	6.8	19.8		45.8	8.0	18.6		24.1
Max Q Clear Time (g_c+I1), s	7.4	19.0		21.5	9.0	13.7		25.6
Green Ext Time (p_c), s	0.0	0.6		12.6	0.0	3.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	44.8
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	11.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	30	1310	55	25	635	50	10	10	15	30	10	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	1379	58	26	668	53	11	11	16	32	11	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	721	0	0	1437	0	0	1863	2245	718	1505	2247	361
Stage 1	-	-	-	-	-	-	1471	1471	-	747	747	-
Stage 2	-	-	-	-	-	-	392	774	-	758	1500	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	877	-	-	468	-	-	45	41	371	84	41	636
Stage 1	-	-	-	-	-	-	133	190	-	371	418	-
Stage 2	-	-	-	-	-	-	604	406	-	365	184	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	877	-	-	468	-	-	25	30	371	47	30	636
Mov Cap-2 Maneuver	-	-	-	-	-	-	25	30	-	47	30	-
Stage 1	-	-	-	-	-	-	108	154	-	302	379	-
Stage 2	-	-	-	-	-	-	506	368	-	265	150	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	1	220.7	231.5
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	45	877	-	-	468	-	-	69
HCM Lane V/C Ratio	0.819	0.036	-	-	0.056	-	-	1.068
HCM Control Delay (s)	220.7	9.3	0.8	-	13.2	0.6	-	231.5
HCM Lane LOS	F	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	3.2	0.1	-	-	0.2	-	-	5.6

Intersection	
Int Delay, s/veh	32.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	140	1355	35	50	660	150	25	5	35	140	10	120
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	-	150	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	147	1426	37	53	695	158	26	5	37	147	11	126

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	853	0	0	1463	0	0	2197	2697	732	1890	2637	426
Stage 1	-	-	-	-	-	-	1739	1739	-	879	879	-
Stage 2	-	-	-	-	-	-	458	958	-	1011	1758	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	782	-	-	458	-	-	~ 25	21	364	~ 43	23	577
Stage 1	-	-	-	-	-	-	90	140	-	309	363	-
Stage 2	-	-	-	-	-	-	552	334	-	257	137	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	782	-	-	458	-	-	~ 13	15	364	~ 28	17	577
Mov Cap-2 Maneuver	-	-	-	-	-	-	54	65	-	~ 88	48	-
Stage 1	-	-	-	-	-	-	73	114	-	251	321	-
Stage 2	-	-	-	-	-	-	369	295	-	179	111	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.8	93.3	$ 300.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	102	782	-	-	458	-	-	83	577
HCM Lane V/C Ratio	0.671	0.188	-	-	0.115	-	-	1.902	0.219
HCM Control Delay (s)	93.3	10.7	-	-	13.9	-	-	$ 531.3	13
HCM Lane LOS	F	B	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	3.4	0.7	-	-	0.4	-	-	13.7	0.8

Notes

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

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	105	1330	95	35	795	45	35	5	75	35	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	40
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	111	1400	100	37	837	47	37	5	79	37	0	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	884	0	0	1500	0	0	2163	2629	750	1858	2655	442
Stage 1	-	-	-	-	-	-	1671	1671	-	934	934	-
Stage 2	-	-	-	-	-	-	492	958	-	924	1721	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	761	-	-	443	-	-	~ 27	23	354	45	23	563
Stage 1	-	-	-	-	-	-	100	151	-	286	343	-
Stage 2	-	-	-	-	-	-	527	334	-	290	143	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	761	-	-	443	-	-	~ 21	18	354	~ 28	18	563
Mov Cap-2 Maneuver	-	-	-	-	-	-	68	79	-	96	66	-
Stage 1	-	-	-	-	-	-	85	129	-	244	314	-
Stage 2	-	-	-	-	-	-	456	306	-	185	122	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.6	94.5	40
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	146	761	-	-	443	-	-	96	563
HCM Lane V/C Ratio	0.829	0.145	-	-	0.083	-	-	0.384	0.056
HCM Control Delay (s)	94.5	10.5	-	-	13.9	-	-	64.2	11.8
HCM Lane LOS	F	B	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	5.4	0.5	-	-	0.3	-	-	1.5	0.2

Notes

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

Intersection	
Int Delay, s/veh	13.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	35	1380	25	20	805	75	20	0	25	160	5	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	35
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	1453	26	21	847	79	21	0	26	168	5	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	926	0	0	1479	0	0	2007	2507	739	1729	2482	463
Stage 1	-	-	-	-	-	-	1539	1539	-	929	929	-
Stage 2	-	-	-	-	-	-	468	968	-	800	1553	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	734	-	-	451	-	-	35	28	360	~ 57	29	546
Stage 1	-	-	-	-	-	-	121	176	-	288	344	-
Stage 2	-	-	-	-	-	-	545	330	-	345	173	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	734	-	-	451	-	-	28	25	360	~ 49	26	546
Mov Cap-2 Maneuver	-	-	-	-	-	-	91	106	-	~ 149	101	-
Stage 1	-	-	-	-	-	-	115	167	-	273	328	-
Stage 2	-	-	-	-	-	-	462	315	-	304	164	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	37.8	149.8
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	156	734	-	-	451	-	-	147	546
HCM Lane V/C Ratio	0.304	0.05	-	-	0.047	-	-	1.182	0.096
HCM Control Delay (s)	37.8	10.2	-	-	13.4	-	-	191.5	12.3
HCM Lane LOS	E	B	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	1.2	0.2	-	-	0.1	-	-	9.9	0.3

Notes

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

Intersection	
Int Delay, s/veh	8.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1195	370	25	780	120	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1258	389	26	821	126	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1647	0	1916	824
Stage 1	-	-	-	-	1453	-
Stage 2	-	-	-	-	463	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	389	-	~ 59	316
Stage 1	-	-	-	-	181	-
Stage 2	-	-	-	-	600	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	389	-	~ 55	316
Mov Cap-2 Maneuver	-	-	-	-	142	-
Stage 1	-	-	-	-	181	-
Stage 2	-	-	-	-	560	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	129.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	162	-	-	389	-
HCM Lane V/C Ratio	1.007	-	-	0.068	-
HCM Control Delay (s)	129.2	-	-	14.9	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	7.9	-	-	0.2	-

Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	405	825	105	345	460	80
Number	2	12	1	6	3	18
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	426	868	111	363	484	84
Adj No. of Lanes	2	1	1	2	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1206	1097	163	1792	615	548
Arrive On Green	0.34	0.34	0.09	0.51	0.35	0.35
Sat Flow, veh/h	3632	1583	1774	3632	1774	1583
Grp Volume(v), veh/h	426	868	111	363	484	84
Grp Sat Flow(s),veh/h/ln	1770	1583	1774	1770	1774	1583
Q Serve(g_s), s	4.9	18.5	3.3	3.1	13.3	2.0
Cycle Q Clear(g_c), s	4.9	18.5	3.3	3.1	13.3	2.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1206	1097	163	1792	615	548
V/C Ratio(X)	0.35	0.79	0.68	0.20	0.79	0.15
Avail Cap(c_a), veh/h	1206	1097	212	1891	752	671
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	13.4	5.7	23.9	7.4	15.9	12.2
Incr Delay (d2), s/veh	0.4	4.7	4.6	0.1	6.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	10.0	1.8	1.5	7.6	0.9
LnGrp Delay(d),s/veh	13.8	10.4	28.5	7.5	22.6	12.5
LnGrp LOS	B	B	C	A	C	B
Approach Vol, veh/h	1294			474	568	
Approach Delay, s/veh	11.5			12.4	21.1	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.0	22.5				31.5		22.8
Change Period (Y+Rc), s	4.1	4.9				4.9		4.6
Max Green Setting (Gmax), s	6.4	17.6				28.1		22.4
Max Q Clear Time (g_c+I1), s	5.3	20.5				5.1		15.3
Green Ext Time (p_c), s	0.0	0.0				17.5		2.9

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	355	85	40	390	10	45	10	45	10	10	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	56	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	374	89	42	411	11	47	11	47	11	11	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	421	0	0	463	0	0	734	944	232	713	984	211
Stage 1	-	-	-	-	-	-	439	439	-	500	500	-
Stage 2	-	-	-	-	-	-	295	505	-	213	484	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1135	-	-	1095	-	-	308	261	770	319	247	794
Stage 1	-	-	-	-	-	-	567	576	-	521	541	-
Stage 2	-	-	-	-	-	-	689	539	-	769	550	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1135	-	-	1095	-	-	284	249	770	282	235	794
Mov Cap-2 Maneuver	-	-	-	-	-	-	399	358	-	389	341	-
Stage 1	-	-	-	-	-	-	562	570	-	516	520	-
Stage 2	-	-	-	-	-	-	636	518	-	702	545	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.8	13.2	13.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	391	770	1135	-	-	1095	-	-	473
HCM Lane V/C Ratio	0.148	0.062	0.009	-	-	0.038	-	-	0.078
HCM Control Delay (s)	15.8	10	8.2	-	-	8.4	-	-	13.3
HCM Lane LOS	C	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.5	0.2	0	-	-	0.1	-	-	0.3

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	400	10	0	425	0	10	0	5	5	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	400	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	2	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	421	11	0	447	0	11	0	5	5	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	447	0	0	432	0	0	650	873	216	658	879	224
Stage 1	-	-	-	-	-	-	426	426	-	447	447	-
Stage 2	-	-	-	-	-	-	224	447	-	211	432	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1110	-	-	1124	-	-	354	287	789	350	285	779
Stage 1	-	-	-	-	-	-	577	584	-	560	572	-
Stage 2	-	-	-	-	-	-	758	572	-	771	581	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1110	-	-	1124	-	-	352	287	789	348	285	779
Mov Cap-2 Maneuver	-	-	-	-	-	-	512	456	-	502	455	-
Stage 1	-	-	-	-	-	-	577	584	-	560	572	-
Stage 2	-	-	-	-	-	-	753	572	-	766	581	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	11.4	11
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	580	1110	-	-	1124	-	-	611
HCM Lane V/C Ratio	0.027	-	-	-	-	-	-	0.017
HCM Control Delay (s)	11.4	0	-	-	0	-	-	11
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	10	50	5	10	30	60	510	15	20	905	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	55	-	-	45	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	11	53	5	11	32	63	537	16	21	953	53

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1713	1700	979	1724	1718	545	1005	0	0	553	0	0
Stage 1	1021	1021	-	671	671	-	-	-	-	-	-	-
Stage 2	692	679	-	1053	1047	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	71	92	303	70	90	538	689	-	-	1017	-	-
Stage 1	285	314	-	446	455	-	-	-	-	-	-	-
Stage 2	434	451	-	274	305	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	55	82	303	48	80	538	689	-	-	1017	-	-
Mov Cap-2 Maneuver	55	82	-	48	80	-	-	-	-	-	-	-
Stage 1	259	308	-	405	413	-	-	-	-	-	-	-
Stage 2	362	410	-	214	299	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	102.4	37.3	1.1	0.2
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	689	-	-	115	158	1017	-	-
HCM Lane V/C Ratio	0.092	-	-	0.778	0.3	0.021	-	-
HCM Control Delay (s)	10.8	-	-	102.4	37.3	8.6	-	-
HCM Lane LOS	B	-	-	F	E	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	4.4	1.2	0.1	-	-

Intersection	
Int Delay, s/veh	20.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	15	95	20	20	35	80	545	5	50	820	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	16	100	21	21	37	84	574	5	53	863	53

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1769	1742	889	1798	1766	576	916	0	0	579	0	0
Stage 1	995	995	-	745	745	-	-	-	-	-	-	-
Stage 2	774	747	-	1053	1021	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	65	87	342	62	84	517	745	-	-	995	-	-
Stage 1	295	323	-	406	421	-	-	-	-	-	-	-
Stage 2	391	420	-	274	314	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	41	73	342	32	71	517	745	-	-	995	-	-
Mov Cap-2 Maneuver	41	73	-	32	71	-	-	-	-	-	-	-
Stage 1	262	306	-	360	374	-	-	-	-	-	-	-
Stage 2	304	373	-	174	297	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	147.9	204.4	1.3	0.5
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	745	-	-	134	77	995	-	-
HCM Lane V/C Ratio	0.113	-	-	1.021	1.025	0.053	-	-
HCM Control Delay (s)	10.4	-	-	147.9	204.4	8.8	-	-
HCM Lane LOS	B	-	-	F	F	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	7.3	5.6	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	140	300	90	30	185	135	50	175	20	295	400	85
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	147	316	95	32	195	142	53	184	21	311	421	89
Adj No. of Lanes	1	2	0	1	1	1	1	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	736	218	76	391	309	106	399	316	366	538	114
Arrive On Green	0.11	0.27	0.26	0.04	0.21	0.20	0.06	0.21	0.20	0.21	0.36	0.35
Sat Flow, veh/h	1774	2695	797	1774	1863	1583	1774	1863	1583	1774	1492	315
Grp Volume(v), veh/h	147	206	205	32	195	142	53	184	21	311	0	510
Grp Sat Flow(s),veh/h/ln	1774	1770	1722	1774	1863	1583	1774	1863	1583	1774	0	1807
Q Serve(g_s), s	4.9	5.8	6.0	1.1	5.6	4.8	1.8	5.2	0.7	10.3	0.0	15.3
Cycle Q Clear(g_c), s	4.9	5.8	6.0	1.1	5.6	4.8	1.8	5.2	0.7	10.3	0.0	15.3
Prop In Lane	1.00		0.46	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	188	483	470	76	391	309	106	399	316	366	0	652
V/C Ratio(X)	0.78	0.43	0.44	0.42	0.50	0.46	0.50	0.46	0.07	0.85	0.00	0.78
Avail Cap(c_a), veh/h	210	582	567	178	579	469	181	549	443	438	0	794
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	0.00	1.00
Uniform Delay (d), s/veh	26.5	18.2	18.4	28.4	21.2	21.6	27.7	20.8	19.7	23.2	0.0	17.4
Incr Delay (d2), s/veh	14.8	1.3	1.4	2.7	2.1	2.3	2.7	1.8	0.2	12.0	0.0	5.8
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	3.2	3.0	3.0	0.6	3.1	2.3	0.9	2.9	0.3	6.2	0.0	8.6
LnGrp Delay(d),s/veh	41.3	19.4	19.8	31.1	23.3	23.9	30.3	22.6	19.9	35.3	0.0	23.1
LnGrp LOS	D	B	B	C	C	C	C	C	B	D		C
Approach Vol, veh/h		558			369			258			821	
Approach Delay, s/veh		25.3			24.2			24.0			27.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	20.6	7.6	25.9	10.4	16.8	16.6	17.0
Change Period (Y+Rc), s	4.1	4.9	4.1	4.9	4.1	4.9	4.1	4.9
Max Green Setting (Gmax), s	6.0	19.1	6.1	25.8	7.1	18.0	14.9	17.0
Max Q Clear Time (g_c+I1), s	3.1	8.0	3.8	17.3	6.9	7.6	12.3	7.2
Green Ext Time (p_c), s	0.0	4.4	0.0	3.7	0.0	4.2	0.3	4.1

Intersection Summary	
HCM 2010 Ctrl Delay	25.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	195	700	130	110	375	85	150	270	55	130	360	65
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	205	737	137	116	395	89	158	284	58	137	379	68
Adj No. of Lanes	1	2	0	1	1	1	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	246	970	180	148	503	427	195	468	398	172	444	378
Arrive On Green	0.14	0.33	0.33	0.08	0.27	0.27	0.11	0.25	0.25	0.10	0.24	0.24
Sat Flow, veh/h	1774	2981	554	1774	1863	1583	1774	1863	1583	1774	1863	1583
Grp Volume(v), veh/h	205	437	437	116	395	89	158	284	58	137	379	68
Grp Sat Flow(s),veh/h/ln	1774	1770	1765	1774	1863	1583	1774	1863	1583	1774	1863	1583
Q Serve(g_s), s	8.3	16.4	16.4	4.7	14.5	3.2	6.4	10.0	2.1	5.6	14.4	2.5
Cycle Q Clear(g_c), s	8.3	16.4	16.4	4.7	14.5	3.2	6.4	10.0	2.1	5.6	14.4	2.5
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	246	576	574	148	503	427	195	468	398	172	444	378
V/C Ratio(X)	0.83	0.76	0.76	0.79	0.79	0.21	0.81	0.61	0.15	0.79	0.85	0.18
Avail Cap(c_a), veh/h	285	610	608	204	556	473	213	470	400	223	481	408
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	31.1	22.4	22.4	33.3	25.0	20.9	32.2	24.5	21.5	32.7	27.0	22.4
Incr Delay (d2), s/veh	15.9	5.6	5.6	11.1	7.2	0.3	18.4	2.6	0.2	12.6	13.6	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	5.2	8.9	8.9	2.8	8.5	1.4	4.2	5.5	0.9	3.3	9.1	1.1
LnGrp Delay(d),s/veh	47.0	28.0	28.0	44.4	32.2	21.2	50.6	27.0	21.8	45.3	40.6	22.7
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	D	C
Approach Vol, veh/h		1079			600			500			584	
Approach Delay, s/veh		31.6			32.9			33.9			39.6	
Approach LOS		C			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	29.0	12.2	22.6	14.4	24.9	11.3	23.5
Change Period (Y+Rc), s	4.1	4.9	4.1	4.9	4.1	4.9	4.1	4.9
Max Green Setting (Gmax), s	8.5	25.5	8.9	19.1	11.9	22.1	9.3	18.7
Max Q Clear Time (g_c+I1), s	6.7	18.4	8.4	16.4	10.3	16.5	7.6	12.0
Green Ext Time (p_c), s	0.0	4.2	0.0	1.3	0.1	3.4	0.1	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	34.0
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	13.5
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	165	470	15	0	10	310	30	0	30	5	5
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	174	495	16	0	11	326	32	0	32	5	5
Number of Lanes	0	0	2	0	0	0	2	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	15.6	10.9	10.1
HCM LOS	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	75%	41%	0%	6%	0%	15%
Vol Thru, %	12%	59%	94%	94%	84%	5%
Vol Right, %	12%	0%	6%	0%	16%	80%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	400	250	165	185	100
LT Vol	30	165	0	10	0	15
Through Vol	5	235	235	155	155	5
RT Vol	5	0	15	0	30	80
Lane Flow Rate	42	421	263	174	195	105
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.076	0.648	0.387	0.281	0.308	0.17
Departure Headway (Hd)	6.514	5.663	5.412	5.83	5.685	5.815
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	552	640	668	618	635	619
Service Time	4.536	3.363	3.112	3.544	3.398	3.832
HCM Lane V/C Ratio	0.076	0.658	0.394	0.282	0.307	0.17
HCM Control Delay	10.1	18.2	11.5	10.8	10.9	10
HCM Lane LOS	B	C	B	B	B	A
HCM 95th-tile Q	0.2	4.7	1.8	1.1	1.3	0.6

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	JHB
Agency/Co.	LSC
Date Performed	11/10/2015
Analysis Time Period	Winter Sat - Scenario 6

Site Information

Intersection	SR 203 EB / Meridian Blvd
Jurisdiction	
Analysis Year	

Project Description: Mammoth Mobility Element EIR Traffic

East/West Street: SR 203 EB | North/South Street: Meridian Blvd

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	5	310	90			
Peak-Hour Factor, PHF	0.95	0.95	0.95	0.90	0.90	0.90
Hourly Flow Rate, HFR (veh/h)	5	326	94	0	0	0
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	2	1	0	0	0
Configuration	L	T	R			
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)		125		1	155	
Peak-Hour Factor, PHF	0.90	0.95	0.90	0.95	0.95	0.90
Hourly Flow Rate, HFR (veh/h)	0	131	0	1	163	0
Percent Heavy Vehicles	2	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		T		LT		

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L			T		LT		
v (veh/h)	5			131		164		
C (m) (veh/h)	1636			586		519		
v/c	0.00			0.22		0.32		
95% queue length	0.01			0.85		1.35		
Control Delay (s/veh)	7.2			12.9		15.1		
LOS	A			B		C		
Approach Delay (s/veh)	--	--	12.9			15.1		
Approach LOS	--	--	B			C		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	JHB
Agency/Co.	LSC
Date Performed	11/10/2015
Analysis Time Period	Winter Sat - Scenario 6

Site Information

Intersection	SR 203 WB / Meridian Blvd
Jurisdiction	
Analysis Year	2030

Project Description: Mammoth Mobility Element EIR Traffic

East/West Street: SR 203 WB | North/South Street: Meridian Blvd

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)				155	295	
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.95	0.95	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	163	310	0
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	0	0	1	2	0
Configuration				L	T	
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	130					
Peak-Hour Factor, PHF	0.95	0.90	0.90	0.90	0.90	1.00
Hourly Flow Rate, HFR (veh/h)	136	0	0	0	0	0
Percent Heavy Vehicles	2	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	0	0	0	0	0
Configuration	L					

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L					
v (veh/h)		163	136					
C (m) (veh/h)		1623	489					
v/c		0.10	0.28					
95% queue length		0.33	1.13					
Control Delay (s/veh)		7.5	15.2					
LOS		A	C					
Approach Delay (s/veh)	--	--	15.2					
Approach LOS	--	--	C					

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Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	40	30	15	5	20	55	15	350	5	95	415	90
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	55	-	-	55	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	32	16	5	21	58	16	368	5	100	437	95

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1126	1089	484	1111	1135	371	532	0	0	374	0	0
Stage 1	684	684	-	403	403	-	-	-	-	-	-	-
Stage 2	442	405	-	708	732	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	182	215	583	186	202	675	1036	-	-	1184	-	-
Stage 1	439	449	-	624	600	-	-	-	-	-	-	-
Stage 2	594	598	-	426	427	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	140	194	583	147	182	675	1036	-	-	1184	-	-
Mov Cap-2 Maneuver	140	194	-	147	182	-	-	-	-	-	-	-
Stage 1	432	411	-	614	591	-	-	-	-	-	-	-
Stage 2	516	589	-	350	391	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	42.5	18.3	0.3	1.3
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1036	-	-	182	355	1184	-	-
HCM Lane V/C Ratio	0.015	-	-	0.492	0.237	0.084	-	-
HCM Control Delay (s)	8.5	-	-	42.5	18.3	8.3	-	-
HCM Lane LOS	A	-	-	E	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	2.4	0.9	0.3	-	-

Intersection	
Int Delay, s/veh	51.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	110	185	45	130	210	95	20	65	85	100	155	185
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	115	-	-	100	-	-	-	-	50	65	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	116	195	47	137	221	100	21	68	89	105	163	195

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	321	0	0	242	0	0	1174	1045	218	1029	1019	271
Stage 1	-	-	-	-	-	-	450	450	-	545	545	-
Stage 2	-	-	-	-	-	-	724	595	-	484	474	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1239	-	-	1324	-	-	169	229	822	212	237	768
Stage 1	-	-	-	-	-	-	589	572	-	523	519	-
Stage 2	-	-	-	-	-	-	417	492	-	564	558	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1239	-	-	1324	-	-	32	186	822	117	193	768
Mov Cap-2 Maneuver	-	-	-	-	-	-	32	186	-	117	193	-
Stage 1	-	-	-	-	-	-	534	518	-	474	465	-
Stage 2	-	-	-	-	-	-	181	441	-	395	506	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.7	2.4	100.6	117.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	87	822	1239	-	-	1324	-	-	117	326
HCM Lane V/C Ratio	1.028	0.109	0.093	-	-	0.103	-	-	0.9	1.098
HCM Control Delay (s)	191.3	9.9	8.2	-	-	8	-	-	127.1	115.1
HCM Lane LOS	F	A	A	-	-	A	-	-	F	F
HCM 95th %tile Q(veh)	5.9	0.4	0.3	-	-	0.3	-	-	5.6	13.7

Mitigated LOS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	1150	65	25	560	80	10	20	15	50	15	55
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	26	1211	68	26	589	84	11	21	16	53	16	58
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	44	1658	93	44	1514	215	16	30	23	70	21	76
Arrive On Green	0.02	0.49	0.49	0.02	0.49	0.49	0.04	0.04	0.04	0.10	0.10	0.10
Sat Flow, veh/h	1774	3407	191	1774	3111	443	399	761	580	706	213	772
Grp Volume(v), veh/h	26	628	651	26	334	339	48	0	0	127	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1829	1774	1770	1785	1740	0	0	1691	0	0
Q Serve(g_s), s	0.7	12.9	13.0	0.7	5.5	5.5	1.2	0.0	0.0	3.3	0.0	0.0
Cycle Q Clear(g_c), s	0.7	12.9	13.0	0.7	5.5	5.5	1.2	0.0	0.0	3.3	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.25	0.23		0.33	0.42		0.46
Lane Grp Cap(c), veh/h	44	861	890	44	861	868	70	0	0	167	0	0
V/C Ratio(X)	0.60	0.73	0.73	0.60	0.39	0.39	0.69	0.00	0.00	0.76	0.00	0.00
Avail Cap(c_a), veh/h	194	1084	1120	155	1045	1054	609	0	0	592	0	0
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	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	22.1	9.3	9.4	22.1	7.4	7.4	21.7	0.0	0.0	20.1	0.0	0.0
Incr Delay (d2), s/veh	12.3	1.9	1.9	12.3	0.3	0.3	11.5	0.0	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	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	10.8	11.1	0.8	4.8	4.9	1.5	0.0	0.0	3.4	0.0	0.0
LnGrp Delay(d),s/veh	34.4	11.2	11.2	34.4	7.7	7.7	33.2	0.0	0.0	26.9	0.0	0.0
LnGrp LOS	C	B	B	C	A	A	C			C		
Approach Vol, veh/h		1305			699			48			127	
Approach Delay, s/veh		11.7			8.7			33.2			26.9	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.1	26.2		8.5	5.1	26.2		5.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	28.0		16.0	5.0	27.0		16.0
Max Q Clear Time (g_c+I1), s	2.7	15.0		5.3	2.7	7.5		3.2
Green Ext Time (p_c), s	0.0	7.3		0.3	0.0	9.1		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.1
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	379	522	242	558
Demand Flow Rate, veh/h	386	533	247	569
Vehicles Circulating, veh/h	521	247	450	453
Vehicles Exiting, veh/h	501	450	457	327
Follow-Up Headway, s	2.800	2.800	2.800	2.800
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	10.0	9.4	6.9	13.8
Approach LOS	A	A	A	B

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	4.200	4.200	4.200	4.200
Entry Flow, veh/h	386	533	247	569
Cap Entry Lane, veh/h	857	1061	906	904
Entry HV Adj Factor	0.982	0.980	0.981	0.980
Flow Entry, veh/h	379	522	242	558
Cap Entry, veh/h	842	1040	888	886
V/C Ratio	0.450	0.502	0.273	0.629
Control Delay, s/veh	10.0	9.4	6.9	13.8
LOS	A	A	A	B
95th %tile Queue, veh	2	3	1	5

Intersection	
Intersection Delay, s/veh	19.3
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	174	63	331	1010
Demand Flow Rate, veh/h	178	64	338	1030
Vehicles Circulating, veh/h	934	322	172	134
Vehicles Exiting, veh/h	230	188	940	252
Follow-Up Headway, s	2.800	2.800	2.800	2.800
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.7	4.2	6.2	26.1
Approach LOS	A	A	A	D

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	4.200	4.200	4.200	4.200
Entry Flow, veh/h	178	64	338	1030
Cap Entry Lane, veh/h	622	1001	1125	1158
Entry HV Adj Factor	0.979	0.978	0.979	0.981
Flow Entry, veh/h	174	63	331	1010
Cap Entry, veh/h	609	979	1101	1136
V/C Ratio	0.286	0.064	0.301	0.889
Control Delay, s/veh	9.7	4.2	6.2	26.1
LOS	A	A	A	D
95th %tile Queue, veh	1	0	1	13

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	1215	60	30	590	90	10	20	15	55	15	55
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	26	1279	63	32	621	95	11	21	16	58	16	58
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	43	1693	83	51	1532	234	16	30	23	76	21	76
Arrive On Green	0.02	0.49	0.49	0.03	0.50	0.50	0.04	0.04	0.04	0.10	0.10	0.10
Sat Flow, veh/h	1774	3434	169	1774	3079	470	399	761	580	744	205	744
Grp Volume(v), veh/h	26	658	684	32	356	360	48	0	0	132	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1833	1774	1770	1780	1740	0	0	1694	0	0
Q Serve(g_s), s	0.7	14.3	14.4	0.8	6.0	6.1	1.3	0.0	0.0	3.6	0.0	0.0
Cycle Q Clear(g_c), s	0.7	14.3	14.4	0.8	6.0	6.1	1.3	0.0	0.0	3.6	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.26	0.23		0.33	0.44		0.44
Lane Grp Cap(c), veh/h	43	872	904	51	880	886	69	0	0	174	0	0
V/C Ratio(X)	0.60	0.75	0.76	0.62	0.40	0.41	0.70	0.00	0.00	0.76	0.00	0.00
Avail Cap(c_a), veh/h	186	1040	1077	149	1003	1008	584	0	0	569	0	0
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	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.0	9.8	9.8	22.9	7.5	7.5	22.6	0.0	0.0	20.8	0.0	0.0
Incr Delay (d2), s/veh	12.6	2.6	2.6	11.7	0.3	0.3	12.1	0.0	0.0	6.6	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	7.4	7.7	0.6	2.9	3.0	0.8	0.0	0.0	2.0	0.0	0.0
LnGrp Delay(d),s/veh	35.6	12.4	12.3	34.5	7.8	7.8	34.7	0.0	0.0	27.4	0.0	0.0
LnGrp LOS	D	B	B	C	A	A	C			C		
Approach Vol, veh/h		1368			748			48			132	
Approach Delay, s/veh		12.8			9.0			34.7			27.4	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.4	27.5		8.9	5.2	27.7		5.9
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	28.0		16.0	5.0	27.0		16.0
Max Q Clear Time (g_c+I1), s	2.8	16.4		5.6	2.7	8.1		3.3
Green Ext Time (p_c), s	0.0	7.1		0.3	0.0	9.6		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.9
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	115	1135	30	50	575	140	25	5	30	125	10	105
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	121	1195	32	53	605	147	26	5	32	132	11	111
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	1680	45	73	1216	295	33	6	40	208	17	201
Arrive On Green	0.09	0.48	0.48	0.04	0.43	0.43	0.05	0.05	0.05	0.13	0.13	0.13
Sat Flow, veh/h	1774	3521	94	1774	2826	685	692	133	852	1644	137	1583
Grp Volume(v), veh/h	121	600	627	53	378	374	63	0	0	143	0	111
Grp Sat Flow(s),veh/h/ln	1774	1770	1846	1774	1770	1742	1678	0	0	1781	0	1583
Q Serve(g_s), s	3.5	13.9	14.0	1.5	8.0	8.1	1.9	0.0	0.0	4.0	0.0	3.4
Cycle Q Clear(g_c), s	3.5	13.9	14.0	1.5	8.0	8.1	1.9	0.0	0.0	4.0	0.0	3.4
Prop In Lane	1.00		0.05	1.00		0.39	0.41		0.51	0.92		1.00
Lane Grp Cap(c), veh/h	156	844	881	73	762	750	79	0	0	225	0	201
V/C Ratio(X)	0.78	0.71	0.71	0.73	0.50	0.50	0.80	0.00	0.00	0.63	0.00	0.55
Avail Cap(c_a), veh/h	273	954	995	137	817	805	517	0	0	548	0	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	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.2	10.8	10.8	24.6	10.7	10.7	24.5	0.0	0.0	21.5	0.0	21.3
Incr Delay (d2), s/veh	8.0	2.2	2.1	12.8	0.5	0.5	16.3	0.0	0.0	2.9	0.0	2.4
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	2.0	7.2	7.5	1.0	4.0	3.9	1.3	0.0	0.0	2.1	0.0	1.6
LnGrp Delay(d),s/veh	31.2	12.9	12.8	37.4	11.2	11.2	40.8	0.0	0.0	24.5	0.0	23.7
LnGrp LOS	C	B	B	D	B	B	D			C		C
Approach Vol, veh/h		1348			805			63			254	
Approach Delay, s/veh		14.5			13.0			40.8			24.1	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.1	28.8		10.6	8.6	26.4		6.5
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	28.0		16.0	8.0	24.0		16.0
Max Q Clear Time (g_c+I1), s	3.5	16.0		6.0	5.5	10.1		3.9
Green Ext Time (p_c), s	0.0	8.8		0.8	0.1	9.9		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	15.7
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	4.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	463	411	105	38
Demand Flow Rate, veh/h	472	419	107	38
Vehicles Circulating, veh/h	65	70	397	456
Vehicles Exiting, veh/h	429	434	140	33
Follow-Up Headway, s	2.800	2.800	2.800	2.800
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.7	4.5	4.9	4.4
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Critical Headway, s	4.200	4.113	4.200	4.113	4.113	4.113
Entry Flow, veh/h	222	250	197	222	107	38
Cap Entry Lane, veh/h	1222	1224	1218	1220	953	912
Entry HV Adj Factor	0.979	0.981	0.980	0.981	0.979	0.994
Flow Entry, veh/h	217	245	193	218	105	38
Cap Entry, veh/h	1197	1201	1193	1196	934	907
V/C Ratio	0.182	0.204	0.162	0.182	0.112	0.042
Control Delay, s/veh	4.6	4.8	4.4	4.6	4.9	4.4
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	1	1	1	0	0

Intersection	
Intersection Delay, s/veh	21.2
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	552	363	284	863
Demand Flow Rate, veh/h	563	371	290	880
Vehicles Circulating, veh/h	822	413	778	280
Vehicles Exiting, veh/h	338	655	607	504
Follow-Up Headway, s	2.800	2.800	2.800	2.800
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	30.3	8.5	10.9	24.1
Approach LOS	D	A	B	C

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	4.200	4.200	4.200	4.200
Entry Flow, veh/h	563	371	290	880
Cap Entry Lane, veh/h	678	932	702	1034
Entry HV Adj Factor	0.980	0.979	0.979	0.980
Flow Entry, veh/h	552	363	284	863
Cap Entry, veh/h	665	913	687	1014
V/C Ratio	0.830	0.398	0.413	0.851
Control Delay, s/veh	30.3	8.5	10.9	24.1
LOS	D	A	B	C
95th %tile Queue, veh	9	2	2	11

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	160	460	15	10	300	30	30	5	5	15	5	80
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	168	484	16	11	316	32	32	5	5	16	5	84
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	219	715	24	21	932	94	52	8	8	21	6	109
Arrive On Green	0.12	0.40	0.40	0.01	0.29	0.29	0.04	0.04	0.04	0.08	0.08	0.08
Sat Flow, veh/h	1774	1793	59	1774	3248	327	1340	209	209	247	77	1297
Grp Volume(v), veh/h	168	0	500	11	171	177	42	0	0	105	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1852	1774	1770	1805	1759	0	0	1621	0	0
Q Serve(g_s), s	3.1	0.0	7.6	0.2	2.6	2.7	0.8	0.0	0.0	2.2	0.0	0.0
Cycle Q Clear(g_c), s	3.1	0.0	7.6	0.2	2.6	2.7	0.8	0.0	0.0	2.2	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.18	0.76		0.12	0.15		0.80
Lane Grp Cap(c), veh/h	219	0	739	21	508	518	68	0	0	136	0	0
V/C Ratio(X)	0.77	0.00	0.68	0.53	0.34	0.34	0.62	0.00	0.00	0.77	0.00	0.00
Avail Cap(c_a), veh/h	518	0	1244	207	879	896	822	0	0	758	0	0
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	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.5	0.0	8.5	16.8	9.6	9.7	16.2	0.0	0.0	15.4	0.0	0.0
Incr Delay (d2), s/veh	5.5	0.0	1.1	19.8	0.4	0.4	8.9	0.0	0.0	9.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	4.0	0.2	1.3	1.4	0.6	0.0	0.0	1.3	0.0	0.0
LnGrp Delay(d),s/veh	20.0	0.0	9.6	36.6	10.0	10.0	25.2	0.0	0.0	24.4	0.0	0.0
LnGrp LOS	C		A	D	B	B	C			C		
Approach Vol, veh/h		668			359			42			105	
Approach Delay, s/veh		12.2			10.8			25.2			24.4	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.4	17.7		6.9	8.2	13.8		5.3
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	23.0		16.0	10.0	17.0		16.0
Max Q Clear Time (g_c+I1), s	2.2	9.6		4.2	5.1	4.7		2.8
Green Ext Time (p_c), s	0.0	4.1		0.4	0.2	3.9		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	2	2	1
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	416	463	579
Demand Flow Rate, veh/h	424	472	591
Vehicles Circulating, veh/h	161	135	327
Vehicles Exiting, veh/h	446	783	258
Follow-Up Headway, s	2.800	2.800	2.800
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.9	5.0	11.7
Approach LOS	A	A	B

Lane	Left	Right	Left	Right	Left
Designated Moves	LT	TR	LT	TR	LR
Assumed Moves	LT	TR	LT	TR	LR
RT Channelized					
Lane Util	0.469	0.531	0.470	0.530	1.000
Critical Headway, s	4.200	4.113	4.200	4.113	4.113
Entry Flow, veh/h	199	225	222	250	591
Cap Entry Lane, veh/h	1134	1139	1158	1161	1005
Entry HV Adj Factor	0.982	0.979	0.980	0.981	0.980
Flow Entry, veh/h	195	220	218	245	579
Cap Entry, veh/h	1113	1115	1134	1140	984
V/C Ratio	0.175	0.198	0.192	0.215	0.588
Control Delay, s/veh	4.8	5.0	4.9	5.1	11.7
LOS	A	A	A	A	B
95th %tile Queue, veh	1	1	1	1	4

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	332	437	184	473
Demand Flow Rate, veh/h	338	446	187	482
Vehicles Circulating, veh/h	418	203	397	370
Vehicles Exiting, veh/h	434	381	359	279
Follow-Up Headway, s	2.800	2.800	2.800	2.800
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.0	7.6	5.8	10.0
Approach LOS	A	A	A	B

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	4.200	4.200	4.200	4.200
Entry Flow, veh/h	338	446	187	482
Cap Entry Lane, veh/h	929	1098	944	964
Entry HV Adj Factor	0.981	0.980	0.982	0.981
Flow Entry, veh/h	332	437	184	473
Cap Entry, veh/h	911	1076	927	946
V/C Ratio	0.364	0.406	0.198	0.500
Control Delay, s/veh	8.0	7.6	5.8	10.0
LOS	A	A	A	B
95th %tile Queue, veh	2	2	1	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	100	995	80	50	525	155	40	5	55	170	30	155
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	105	1047	84	53	553	163	42	5	58	179	32	163
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	1347	108	72	1000	294	55	7	77	257	46	268
Arrive On Green	0.08	0.41	0.41	0.04	0.37	0.37	0.08	0.08	0.08	0.17	0.17	0.17
Sat Flow, veh/h	1774	3319	266	1774	2699	793	667	79	921	1516	271	1583
Grp Volume(v), veh/h	105	558	573	53	362	354	105	0	0	211	0	163
Grp Sat Flow(s),veh/h/ln	1774	1770	1816	1774	1770	1723	1667	0	0	1787	0	1583
Q Serve(g_s), s	3.1	14.5	14.6	1.6	8.6	8.7	3.3	0.0	0.0	5.9	0.0	5.1
Cycle Q Clear(g_c), s	3.1	14.5	14.6	1.6	8.6	8.7	3.3	0.0	0.0	5.9	0.0	5.1
Prop In Lane	1.00		0.15	1.00		0.46	0.40		0.55	0.85		1.00
Lane Grp Cap(c), veh/h	135	718	737	72	656	638	139	0	0	302	0	268
V/C Ratio(X)	0.78	0.78	0.78	0.73	0.55	0.55	0.76	0.00	0.00	0.70	0.00	0.61
Avail Cap(c_a), veh/h	234	766	786	134	666	648	502	0	0	538	0	477
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	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.1	13.7	13.7	25.2	13.2	13.3	23.8	0.0	0.0	20.8	0.0	20.4
Incr Delay (d2), s/veh	9.3	4.8	4.7	13.2	1.0	1.0	8.2	0.0	0.0	2.9	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.4	12.6	12.8	1.9	7.7	7.6	3.3	0.0	0.0	5.6	0.0	4.2
LnGrp Delay(d),s/veh	33.4	18.5	18.4	38.4	14.2	14.3	32.0	0.0	0.0	23.7	0.0	22.7
LnGrp LOS	C	B	B	D	B	B	C			C		C
Approach Vol, veh/h		1236			769			105			374	
Approach Delay, s/veh		19.7			15.9			32.0			23.2	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.2	25.6		13.0	8.0	23.7		8.4
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	23.0		16.0	7.0	20.0		16.0
Max Q Clear Time (g_c+I1), s	3.6	16.6		7.9	5.1	10.7		5.3
Green Ext Time (p_c), s	0.0	5.0		1.1	0.0	6.8		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	19.6
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	8.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	65	965	190	85	595	75	85	15	140	50	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	50	-	-	40
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	68	1016	200	89	626	79	89	16	147	53	0	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	705	0	0	1216	0	0	1745	2137	608	1498	2198	353
Stage 1	-	-	-	-	-	-	1253	1253	-	845	845	-
Stage 2	-	-	-	-	-	-	492	884	-	653	1353	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	889	-	-	569	-	-	~ 55	48	439	85	44	643
Stage 1	-	-	-	-	-	-	182	242	-	324	377	-
Stage 2	-	-	-	-	-	-	527	362	-	423	216	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	889	-	-	569	-	-	~ 42	37	439	~ 42	34	643
Mov Cap-2 Maneuver	-	-	-	-	-	-	119	122	-	109	86	-
Stage 1	-	-	-	-	-	-	168	223	-	299	318	-
Stage 2	-	-	-	-	-	-	408	305	-	241	199	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.4	60.9	38.4
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	119	439	889	-	-	569	-	-	109	643
HCM Lane V/C Ratio	0.885	0.336	0.077	-	-	0.157	-	-	0.483	0.082
HCM Control Delay (s)	122	17.3	9.4	-	-	12.5	-	-	65.6	11.1
HCM Lane LOS	F	C	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	5.5	1.5	0.2	-	-	0.6	-	-	2.1	0.3

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	1125	15	20	695	95	15	0	20	185	5	45
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	16	1184	16	21	732	100	16	0	21	195	5	47
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	28	1652	22	36	1460	199	23	0	31	270	7	247
Arrive On Green	0.02	0.46	0.46	0.02	0.47	0.47	0.03	0.00	0.03	0.16	0.16	0.16
Sat Flow, veh/h	1774	3576	48	1774	3130	427	718	0	942	1732	44	1583
Grp Volume(v), veh/h	16	586	614	21	414	418	37	0	0	200	0	47
Grp Sat Flow(s),veh/h/ln	1774	1770	1854	1774	1770	1787	1661	0	0	1776	0	1583
Q Serve(g_s), s	0.4	12.9	12.9	0.6	7.9	7.9	1.1	0.0	0.0	5.2	0.0	1.3
Cycle Q Clear(g_c), s	0.4	12.9	12.9	0.6	7.9	7.9	1.1	0.0	0.0	5.2	0.0	1.3
Prop In Lane	1.00		0.03	1.00		0.24	0.43		0.57	0.97		1.00
Lane Grp Cap(c), veh/h	28	818	857	36	825	834	54	0	0	277	0	247
V/C Ratio(X)	0.56	0.72	0.72	0.58	0.50	0.50	0.69	0.00	0.00	0.72	0.00	0.19
Avail Cap(c_a), veh/h	146	1020	1069	146	1020	1031	547	0	0	585	0	522
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	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.7	10.5	10.5	23.6	9.0	9.0	23.2	0.0	0.0	19.5	0.0	17.8
Incr Delay (d2), s/veh	16.4	1.8	1.7	14.0	0.5	0.5	14.5	0.0	0.0	3.6	0.0	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(95%),veh/ln	0.6	10.8	11.2	0.7	7.0	7.1	1.3	0.0	0.0	5.1	0.0	1.0
LnGrp Delay(d),s/veh	40.1	12.3	12.2	37.6	9.5	9.5	37.7	0.0	0.0	23.1	0.0	18.2
LnGrp LOS	D	B	B	D	A	A	D			C		B
Approach Vol, veh/h		1216			853			37			247	
Approach Delay, s/veh		12.7			10.2			37.7			22.1	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.0	26.4		11.6	4.8	26.6		5.6
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	28.0		16.0	4.0	28.0		16.0
Max Q Clear Time (g_c+I1), s	2.6	14.9		7.2	2.4	9.9		3.1
Green Ext Time (p_c), s	0.0	7.5		0.6	0.0	9.1		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	13.1
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	7.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1050	280	30	655	155	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	50
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1105	295	32	689	163	53

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1400	0	1661	700
Stage 1	-	-	-	-	1253	-
Stage 2	-	-	-	-	408	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	484	-	~ 88	382
Stage 1	-	-	-	-	232	-
Stage 2	-	-	-	-	640	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	484	-	~ 82	382
Mov Cap-2 Maneuver	-	-	-	-	181	-
Stage 1	-	-	-	-	232	-
Stage 2	-	-	-	-	598	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	75.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	181	382	-	-	484	-
HCM Lane V/C Ratio	0.901	0.138	-	-	0.065	-
HCM Control Delay (s)	95.2	15.9	-	-	13	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	6.8	0.5	-	-	0.2	-

Notes

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

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	30	10	55	5	10	35	65	520	15	20	930	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	55	-	-	45	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	11	58	5	11	37	68	547	16	21	979	58

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1766	1750	1008	1747	1771	555	1037	0	0	563	0	0
Stage 1	1050	1050	-	692	692	-	-	-	-	-	-	-
Stage 2	716	700	-	1055	1079	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	65	86	292	67	83	531	670	-	-	1008	-	-
Stage 1	275	304	-	434	445	-	-	-	-	-	-	-
Stage 2	421	441	-	273	295	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	49	76	292	44	73	531	670	-	-	1008	-	-
Mov Cap-2 Maneuver	49	76	-	44	73	-	-	-	-	-	-	-
Stage 1	247	298	-	390	400	-	-	-	-	-	-	-
Stage 2	343	396	-	207	289	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	88.8	38.8	1.2	0.2
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	670	-	-	54	292	158	1008	-	-
HCM Lane V/C Ratio	0.102	-	-	0.78	0.198	0.333	0.021	-	-
HCM Control Delay (s)	11	-	-	182.9	20.4	38.8	8.6	-	-
HCM Lane LOS	B	-	-	F	C	E	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	3.3	0.7	1.4	0.1	-	-

Intersection	
Int Delay, s/veh	13.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	15	95	20	20	35	80	575	5	50	870	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	50	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	16	100	21	21	37	84	605	5	53	916	53

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1834	1826	942	1831	1850	608	968	0	0	611	0	0
Stage 1	1047	1047	-	776	776	-	-	-	-	-	-	-
Stage 2	787	779	-	1055	1074	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	59	77	319	59	74	496	712	-	-	968	-	-
Stage 1	276	305	-	390	407	-	-	-	-	-	-	-
Stage 2	385	406	-	273	296	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	35	64	319	29	62	496	712	-	-	968	-	-
Mov Cap-2 Maneuver	35	64	-	29	62	-	-	-	-	-	-	-
Stage 1	243	288	-	344	359	-	-	-	-	-	-	-
Stage 2	296	358	-	167	280	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	80	173.3	1.3	0.5
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	712	-	-	43	319	40	496	968	-	-
HCM Lane V/C Ratio	0.118	-	-	0.857	0.313	1.053	0.074	0.054	-	-
HCM Control Delay (s)	10.7	-	-	239	21.4$	313.7	12.8	8.9	-	-
HCM Lane LOS	B	-	-	F	C	F	B	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	3.4	1.3	4.1	0.2	0.2	-	-

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	410	558	242	558
Demand Flow Rate, veh/h	418	569	247	569
Vehicles Circulating, veh/h	537	247	483	484
Vehicles Exiting, veh/h	516	483	472	332
Follow-Up Headway, s	2.800	2.800	2.800	2.800
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	10.9	10.1	7.2	14.6
Approach LOS	B	B	A	B

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	4.200	4.200	4.200	4.200
Entry Flow, veh/h	418	569	247	569
Cap Entry Lane, veh/h	847	1061	883	882
Entry HV Adj Factor	0.982	0.980	0.981	0.980
Flow Entry, veh/h	410	558	242	558
Cap Entry, veh/h	831	1040	866	865
V/C Ratio	0.494	0.536	0.280	0.645
Control Delay, s/veh	10.9	10.1	7.2	14.6
LOS	B	B	A	B
95th %tile Queue, veh	3	3	1	5

Intersection	
Intersection Delay, s/veh	19.3
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	174	63	331	1010
Demand Flow Rate, veh/h	178	64	338	1030
Vehicles Circulating, veh/h	934	322	172	134
Vehicles Exiting, veh/h	230	188	940	252
Follow-Up Headway, s	2.800	2.800	2.800	2.800
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.7	4.2	6.2	26.1
Approach LOS	A	A	A	D

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	4.200	4.200	4.200	4.200
Entry Flow, veh/h	178	64	338	1030
Cap Entry Lane, veh/h	622	1001	1125	1158
Entry HV Adj Factor	0.979	0.978	0.979	0.981
Flow Entry, veh/h	174	63	331	1010
Cap Entry, veh/h	609	979	1101	1136
V/C Ratio	0.286	0.064	0.301	0.889
Control Delay, s/veh	9.7	4.2	6.2	26.1
LOS	A	A	A	D
95th %tile Queue, veh	1	0	1	13

Intersection	
Int Delay, s/veh	10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	30	1310	55	25	635	50	10	10	15	30	10	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	1379	58	26	668	53	11	11	16	32	11	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	721	0	0	1437	0	0	1863	2245	718	1505	2247	361
Stage 1	-	-	-	-	-	-	1471	1471	-	747	747	-
Stage 2	-	-	-	-	-	-	392	774	-	758	1500	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	877	-	-	468	-	-	45	41	371	84	41	636
Stage 1	-	-	-	-	-	-	133	190	-	371	418	-
Stage 2	-	-	-	-	-	-	604	406	-	365	184	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	877	-	-	468	-	-	25	30	371	47	30	636
Mov Cap-2 Maneuver	-	-	-	-	-	-	25	30	-	47	30	-
Stage 1	-	-	-	-	-	-	108	154	-	302	379	-
Stage 2	-	-	-	-	-	-	506	368	-	265	150	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	1	220.7	176.4
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	45	877	-	-	468	-	-	41	636
HCM Lane V/C Ratio	0.819	0.036	-	-	0.056	-	-	1.027	0.05
HCM Control Delay (s)	220.7	9.3	0.8	-	13.2	0.6	-	$ 300.4	11
HCM Lane LOS	F	A	A	-	B	A	-	F	B
HCM 95th %tile Q(veh)	3.2	0.1	-	-	0.2	-	-	4	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	140	1355	35	50	660	150	25	5	35	140	10	120
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	147	1426	37	53	695	158	26	5	37	147	11	126
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	1887	49	67	1341	305	33	6	47	211	16	202
Arrive On Green	0.11	0.54	0.54	0.04	0.47	0.47	0.05	0.05	0.05	0.13	0.13	0.13
Sat Flow, veh/h	1774	3525	91	1774	2866	651	639	123	909	1656	124	1583
Grp Volume(v), veh/h	147	715	748	53	429	424	68	0	0	158	0	126
Grp Sat Flow(s),veh/h/ln	1774	1770	1847	1774	1770	1748	1670	0	0	1780	0	1583
Q Serve(g_s), s	5.2	20.4	20.5	1.9	11.0	11.1	2.6	0.0	0.0	5.5	0.0	4.9
Cycle Q Clear(g_c), s	5.2	20.4	20.5	1.9	11.0	11.1	2.6	0.0	0.0	5.5	0.0	4.9
Prop In Lane	1.00		0.05	1.00		0.37	0.38		0.54	0.93		1.00
Lane Grp Cap(c), veh/h	187	947	989	67	828	818	87	0	0	227	0	202
V/C Ratio(X)	0.79	0.75	0.76	0.79	0.52	0.52	0.78	0.00	0.00	0.70	0.00	0.62
Avail Cap(c_a), veh/h	301	1037	1082	109	846	836	412	0	0	439	0	391
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	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.3	11.7	11.8	30.9	12.1	12.1	30.4	0.0	0.0	27.1	0.0	26.8
Incr Delay (d2), s/veh	7.1	2.9	2.8	18.0	0.5	0.5	13.9	0.0	0.0	3.8	0.0	3.1
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	2.9	10.7	11.2	1.3	5.5	5.4	1.5	0.0	0.0	3.0	0.0	2.3
LnGrp Delay(d),s/veh	35.4	14.7	14.6	48.9	12.6	12.7	44.2	0.0	0.0	30.9	0.0	29.9
LnGrp LOS	D	B	B	D	B	B	D			C		C
Approach Vol, veh/h		1610			906			68			284	
Approach Delay, s/veh		16.5			14.8			44.2			30.4	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.5	38.7		12.3	10.8	34.3		7.4
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	38.0		16.0	11.0	31.0		16.0
Max Q Clear Time (g_c+I1), s	3.9	22.5		7.5	7.2	13.1		4.6
Green Ext Time (p_c), s	0.0	12.2		0.8	0.1	13.7		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	35	1380	25	20	805	75	20	0	25	0	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	35
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	1453	26	21	847	79	21	0	26	0	0	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	926	0	0	1479	0	0	2005	2507	739	1729	2482	463
Stage 1	-	-	-	-	-	-	1539	1539	-	929	929	-
Stage 2	-	-	-	-	-	-	466	968	-	800	1553	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	734	-	-	451	-	-	35	28	360	57	29	546
Stage 1	-	-	-	-	-	-	121	176	-	288	344	-
Stage 2	-	-	-	-	-	-	546	330	-	345	173	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	734	-	-	451	-	-	29	25	360	49	26	546
Mov Cap-2 Maneuver	-	-	-	-	-	-	91	106	-	149	101	-
Stage 1	-	-	-	-	-	-	115	167	-	273	328	-
Stage 2	-	-	-	-	-	-	470	315	-	304	164	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	37.8	12.3
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	156	734	-	-	451	-	-	-	546
HCM Lane V/C Ratio	0.304	0.05	-	-	0.047	-	-	-	0.096
HCM Control Delay (s)	37.8	10.2	-	-	13.4	-	-	0	12.3
HCM Lane LOS	E	B	-	-	B	-	-	A	B
HCM 95th %tile Q(veh)	1.2	0.2	-	-	0.1	-	-	-	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	1380	25	20	805	75	20	0	25	160	5	50
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	37	1453	26	21	847	79	21	0	26	168	5	53
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	1913	34	35	1723	161	27	0	34	230	7	212
Arrive On Green	0.03	0.54	0.54	0.02	0.53	0.53	0.04	0.00	0.04	0.13	0.13	0.13
Sat Flow, veh/h	1774	3558	64	1774	3273	305	743	0	920	1725	51	1583
Grp Volume(v), veh/h	37	722	757	21	458	468	47	0	0	173	0	53
Grp Sat Flow(s),veh/h/ln	1774	1770	1852	1774	1770	1809	1663	0	0	1776	0	1583
Q Serve(g_s), s	1.2	18.7	18.8	0.7	9.7	9.7	1.6	0.0	0.0	5.5	0.0	1.8
Cycle Q Clear(g_c), s	1.2	18.7	18.8	0.7	9.7	9.7	1.6	0.0	0.0	5.5	0.0	1.8
Prop In Lane	1.00		0.03	1.00		0.17	0.45		0.55	0.97		1.00
Lane Grp Cap(c), veh/h	55	951	995	35	932	952	61	0	0	237	0	212
V/C Ratio(X)	0.68	0.76	0.76	0.60	0.49	0.49	0.77	0.00	0.00	0.73	0.00	0.25
Avail Cap(c_a), veh/h	181	1146	1199	121	1085	1109	453	0	0	484	0	432
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	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.2	10.6	10.6	28.5	8.9	8.9	28.0	0.0	0.0	24.4	0.0	22.8
Incr Delay (d2), s/veh	13.5	2.5	2.4	15.3	0.4	0.4	18.6	0.0	0.0	4.3	0.0	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	0.8	9.7	10.1	0.5	4.8	4.9	1.1	0.0	0.0	3.0	0.0	0.8
LnGrp Delay(d),s/veh	41.7	13.1	13.0	43.8	9.3	9.3	46.7	0.0	0.0	28.7	0.0	23.4
LnGrp LOS	D	B	B	D	A	A	D			C		C
Approach Vol, veh/h		1516			947			47			226	
Approach Delay, s/veh		13.7			10.0			46.7			27.4	
Approach LOS		B			B			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.2	35.6		11.8	5.8	34.9		6.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	38.0		16.0	6.0	36.0		16.0
Max Q Clear Time (g_c+I1), s	2.7	20.8		7.5	3.2	11.7		3.6
Green Ext Time (p_c), s	0.0	10.8		0.6	0.0	13.3		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	14.1
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	5.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1195	370	25	780	120	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	50
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1258	389	26	821	126	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1647	0	1916	824
Stage 1	-	-	-	-	1453	-
Stage 2	-	-	-	-	463	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	389	-	~ 59	316
Stage 1	-	-	-	-	181	-
Stage 2	-	-	-	-	600	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	389	-	~ 55	316
Mov Cap-2 Maneuver	-	-	-	-	142	-
Stage 1	-	-	-	-	181	-
Stage 2	-	-	-	-	560	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	88.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	142	316	-	-	389	-
HCM Lane V/C Ratio	0.89	0.117	-	-	0.068	-
HCM Control Delay (s)	109.3	17.9	-	-	14.9	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	6	0.4	-	-	0.2	-

Notes

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

Intersection	
Intersection Delay, s/veh	4.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	474	464	105	38
Demand Flow Rate, veh/h	483	473	107	38
Vehicles Circulating, veh/h	65	70	403	510
Vehicles Exiting, veh/h	483	440	145	33
Follow-Up Headway, s	2.800	2.800	2.800	2.800
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.7	4.7	4.9	4.5
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.469	0.531	1.000	1.000
Critical Headway, s	4.200	4.113	4.200	4.113	4.113	4.113
Entry Flow, veh/h	227	256	222	251	107	38
Cap Entry Lane, veh/h	1222	1224	1218	1220	949	875
Entry HV Adj Factor	0.980	0.980	0.982	0.979	0.979	0.994
Flow Entry, veh/h	223	251	218	246	105	38
Cap Entry, veh/h	1198	1200	1196	1194	929	870
V/C Ratio	0.186	0.209	0.182	0.206	0.113	0.043
Control Delay, s/veh	4.6	4.8	4.6	4.8	4.9	4.5
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	1	1	1	0	0

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	355	85	40	353	10	41	10	45	10	10	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	56	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	374	89	42	372	11	43	11	47	11	11	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	382	0	0	463	0	0	714	905	232	674	945	191
Stage 1	-	-	-	-	-	-	439	439	-	461	461	-
Stage 2	-	-	-	-	-	-	275	466	-	213	484	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1173	-	-	1095	-	-	319	275	770	340	260	818
Stage 1	-	-	-	-	-	-	567	576	-	550	564	-
Stage 2	-	-	-	-	-	-	708	561	-	769	550	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1173	-	-	1095	-	-	295	262	770	301	248	818
Mov Cap-2 Maneuver	-	-	-	-	-	-	408	370	-	407	351	-
Stage 1	-	-	-	-	-	-	562	571	-	545	542	-
Stage 2	-	-	-	-	-	-	656	539	-	702	545	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.8	12.9	13
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	400	770	1173	-	-	1095	-	-	485
HCM Lane V/C Ratio	0.134	0.062	0.009	-	-	0.038	-	-	0.074
HCM Control Delay (s)	15.4	10	8.1	-	-	8.4	-	-	13
HCM Lane LOS	C	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.5	0.2	0	-	-	0.1	-	-	0.2

Intersection	
Int Delay, s/veh	10.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	15	95	20	20	35	80	545	5	50	820	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	50	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	16	100	21	21	37	84	574	5	53	863	53

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1750	1742	889	1748	1766	576	916	0	0	579	0	0
Stage 1	995	995	-	745	745	-	-	-	-	-	-	-
Stage 2	755	747	-	1003	1021	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	67	87	342	67	84	517	745	-	-	995	-	-
Stage 1	295	323	-	406	421	-	-	-	-	-	-	-
Stage 2	401	420	-	292	314	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	42	73	342	35	71	517	745	-	-	995	-	-
Mov Cap-2 Maneuver	42	73	-	35	71	-	-	-	-	-	-	-
Stage 1	262	306	-	360	374	-	-	-	-	-	-	-
Stage 2	312	373	-	186	297	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	62.1	131.4	1.3	0.5
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	745	-	-	51	342	47	517	995	-	-
HCM Lane V/C Ratio	0.113	-	-	0.722	0.292	0.896	0.071	0.053	-	-
HCM Control Delay (s)	10.4	-	-	177	19.8	235.4	12.5	8.8	-	-
HCM Lane LOS	B	-	-	F	C	F	B	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	2.9	1.2	3.7	0.2	0.2	-	-

Intersection	
Intersection Delay, s/veh	19.2
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	558	369	258	821
Demand Flow Rate, veh/h	569	377	263	837
Vehicles Circulating, veh/h	779	392	789	286
Vehicles Exiting, veh/h	344	660	559	483
Follow-Up Headway, s	2.800	2.800	2.800	2.800
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	27.8	8.4	10.3	21.0
Approach LOS	D	A	B	C

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	4.200	4.200	4.200	4.200
Entry Flow, veh/h	569	377	263	837
Cap Entry Lane, veh/h	701	948	696	1029
Entry HV Adj Factor	0.980	0.979	0.982	0.980
Flow Entry, veh/h	558	369	258	821
Cap Entry, veh/h	688	928	684	1009
V/C Ratio	0.811	0.398	0.378	0.813
Control Delay, s/veh	27.8	8.4	10.3	21.0
LOS	D	A	B	C
95th %tile Queue, veh	8	2	2	9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	165	470	15	10	310	30	30	5	5	15	5	80
Number	5	2	12	1	6	16	3	8	18	7	4	14
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	174	495	16	11	326	32	32	5	5	16	5	84
Adj No. of Lanes	1	1	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	227	725	23	21	937	91	51	8	8	21	6	109
Arrive On Green	0.13	0.40	0.40	0.01	0.29	0.29	0.04	0.04	0.04	0.08	0.08	0.08
Sat Flow, veh/h	1774	1795	58	1774	3259	318	1340	209	209	247	77	1297
Grp Volume(v), veh/h	174	0	511	11	176	182	42	0	0	105	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1853	1774	1770	1807	1759	0	0	1621	0	0
Q Serve(g_s), s	3.3	0.0	7.9	0.2	2.7	2.8	0.8	0.0	0.0	2.2	0.0	0.0
Cycle Q Clear(g_c), s	3.3	0.0	7.9	0.2	2.7	2.8	0.8	0.0	0.0	2.2	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.18	0.76		0.12	0.15		0.80
Lane Grp Cap(c), veh/h	227	0	748	21	509	520	68	0	0	136	0	0
V/C Ratio(X)	0.77	0.00	0.68	0.53	0.35	0.35	0.62	0.00	0.00	0.77	0.00	0.00
Avail Cap(c_a), veh/h	513	0	1231	205	869	887	813	0	0	750	0	0
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	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.6	0.0	8.5	17.0	9.8	9.8	16.4	0.0	0.0	15.5	0.0	0.0
Incr Delay (d2), s/veh	5.3	0.0	1.1	19.8	0.4	0.4	9.0	0.0	0.0	9.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	4.2	0.2	1.4	1.4	0.6	0.0	0.0	1.3	0.0	0.0
LnGrp Delay(d),s/veh	19.9	0.0	9.6	36.8	10.2	10.2	25.4	0.0	0.0	24.5	0.0	0.0
LnGrp LOS	B		A	D	B	B	C			C		
Approach Vol, veh/h		685			369			42			105	
Approach Delay, s/veh		12.2			11.0			25.4			24.5	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.4	18.0		6.9	8.4	14.0		5.3
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	23.0		16.0	10.0	17.0		16.0
Max Q Clear Time (g_c+I1), s	2.2	9.9		4.2	5.3	4.8		2.8
Green Ext Time (p_c), s	0.0	4.1		0.4	0.2	4.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	89	290	9	0	4	233	22	0	30	5	5
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	94	305	9	0	4	245	23	0	32	5	5
Number of Lanes	0	0	2	0	0	0	2	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	2
HCM Control Delay	10.6	9.4	9.2
HCM LOS	B	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	75%	38%	0%	3%	0%	14%
Vol Thru, %	12%	62%	94%	97%	84%	5%
Vol Right, %	12%	0%	6%	0%	16%	81%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	234	154	121	139	105
LT Vol	30	89	0	4	0	15
Through Vol	5	145	145	117	117	5
RT Vol	5	0	9	0	22	85
Lane Flow Rate	42	246	162	127	146	111
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.067	0.368	0.232	0.189	0.212	0.155
Departure Headway (Hd)	5.699	5.382	5.149	5.353	5.224	5.052
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	622	665	692	666	682	704
Service Time	3.789	3.149	2.916	3.125	2.996	3.126
HCM Lane V/C Ratio	0.068	0.37	0.234	0.191	0.214	0.158
HCM Control Delay	9.2	11.3	9.5	9.4	9.4	9.1
HCM Lane LOS	A	B	A	A	A	A
HCM 95th-tile Q	0.2	1.7	0.9	0.7	0.8	0.5

Intersection	
Intersection Delay, s/veh	6.7
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	2	2	1
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	421	0	447
Demand Flow Rate, veh/h	430	0	456
Vehicles Circulating, veh/h	0	0	333
Vehicles Exiting, veh/h	0	789	97
Follow-Up Headway, s	2.800	2.800	2.800
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.3	0.0	9.0
Approach LOS	A	-	A

Lane	Left	Right	Left	Right	Left
Designated Moves	LT	TR	LT	TR	LR
Assumed Moves	LT	TR	LT	TR	LR
RT Channelized					
Lane Util	0.470	0.530	0.500	0.500	1.000
Critical Headway, s	4.200	4.113	4.200	4.113	4.113
Entry Flow, veh/h	202	228	0	0	456
Cap Entry Lane, veh/h	1286	1286	1286	1286	1000
Entry HV Adj Factor	0.981	0.980	1.000	1.000	0.980
Flow Entry, veh/h	198	223	0	0	447
Cap Entry, veh/h	1261	1260	1286	1286	981
V/C Ratio	0.157	0.177	0.000	0.000	0.456
Control Delay, s/veh	4.2	4.4	2.8	2.8	9.0
LOS	A	A	A	A	A
95th %tile Queue, veh	1	1	0	0	2

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	358	458	178	463
Demand Flow Rate, veh/h	365	467	181	472
Vehicles Circulating, veh/h	413	208	424	386
Vehicles Exiting, veh/h	445	397	354	289
Follow-Up Headway, s	2.800	2.800	2.800	2.800
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.4	8.0	5.9	10.1
Approach LOS	A	A	A	B

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	4.200	4.200	4.200	4.200
Entry Flow, veh/h	365	467	181	472
Cap Entry Lane, veh/h	932	1094	925	952
Entry HV Adj Factor	0.981	0.980	0.981	0.980
Flow Entry, veh/h	358	458	178	463
Cap Entry, veh/h	915	1072	907	934
V/C Ratio	0.391	0.427	0.196	0.496
Control Delay, s/veh	8.4	8.0	5.9	10.1
LOS	A	A	A	B
95th %tile Queue, veh	2	2	1	3